EFFECT OF MICRO AND MACRO-ECONOMIC FACTORS ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN MALAWI

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DOCTOR OF PHILOSOPHY

(Business Administration)

JOMO KENYATTA UNIVERSITY OF

AGRICULTURE AND TECHNOLOGY

2016

Effect of Micro and Macro-Economic Factors in Financial Performance of Commercial Banks in Malawi

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A Thesis Submitted in Partial Fulfillment of the Degree of Doctor of Philosophy in Business Administration (Finance) in the Jomo Kenyatta University of Agriculture and Technology

2016

DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.

Signature ……..…….…. Date ……...

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This thesis has been submitted for examination with our approval as university supervisors.

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DEDICATION

This work is dedicated to my late mother, Mrs Effie Chimkono, my father, Mr Eston Jenter Chimkono, my wife, Chipo and my three children, Thandizo, Edwina and Emmanuel.

ACKNOWLEDGEMENT

I would like to acknowledge my Supervisors, Dr Willy Muturi and Dr Agnes Njeru, for their time and guidance in this thesis. I would also like to acknowledge the Almighty God for His love, grace and mercy, and for giving me the intellectual capability to accomplish this work.

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LIST OF ABBREVIATIONS

ATM	Auto-Teller Machine
BOU	Bank of Uganda
BOT	Bank of Tanzania
BOZ	Bank of Zambia
CESEE	Central and Eastern and South-Eastern Europe
EU	European Union
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GLS	Generalized Least Squares
IMF	International Monetary Fund
MK	Malawi Kwacha
MFWFY	Making Finance Work For You
MSE	Malawi Stock Exchange
NBR	National Bank of Rwanda
NI	Net Interest Margin
NPL	Non-Performing Loans
OLS	Ordinary Least Squares
RBA	Reserve Bank of Australia
RBM	Reserve Bank of Malawi

ROA	Return on Assets
ROE	Return on Equity
ROCE	Return on Capital Employed
UK	United Kingdom
USA	United States of America
WDI	World Development Indicators.

DEFINITION OF TERMS

Asset Quality: Refers to an evaluation of the overall credit risk associated with banks' assets and is most commonly used by the banks determine the proportion of their assets which are at financial risk and to determine how much allowance for potential losses they must make (Yike & Chiu, 2011).

Cost Efficiency: Louzis, Vouldis. and Vasilios (2010) and Podpiera and Weill (2008) refer to cost efficiency as the comparison of what is actually produced or performed with what can be achieved with the same consumption of resources (money, time, labor, among others).

Economic Growth: Dornbusch and Fischer (1990) and Siraj and Pillai (2013) define economic growth as an increase in the capacity of an economy to produce goods and services, compared from one period of time to another; as measured by the gross domestic product (GDP).

Financial Intermediation: According to Beck (2006), financial intermediation refers to the process performed by banks of taking in funds from a depositor and then lending them out to a borrower.

Financial Performance: is defined by Rose and Hudgins, (2008) and Balasubramaniam, (2013) as the ability of meeting the needs of stockholders and stakeholders as measured in terms of profitability.

Lending Interest Rate: Refers to the rate of interest that a borrower is required to pay to a bank or any other financial institution when a borrower money from them i.e. the price for borrowing (Dornbush **&** Fisher**,** 1990).

Moderating Variable: Refers to a variable that influences, or moderates, the relationship between other variables and affects the direction and/or strength of the relationship between dependent and independent variables (Salas & Suarina, 2002; Rajan & Dhal, 2003; Fofack, 2005).

Non-Performing Loan: According to the Reserve Bank of Malawi Directive referenced as NO.DO1-06/ASCL (RBM Directive, 2006), loans extended by the commercial banks in Malawi are classified as non-performing loans if interest and principal payments are more than 90 days overdue or a consumer loan is more than 180 days overdue.

Reserve Requirement (or **Cash Reserve Ratio**): According to Dornbusch and Fischer (1990), Cash Reserve Requirement (CRR) is the specified minimum fraction of the total deposits of customers, which commercial banks have to hold as reserves either in cash or as deposits with the central bank.

ABSTRACT

The general objective of the study was to investigate the effect of micro and macro-economic factors on the financial performance of commercial banks in the Malawian banking sector. The specific objectives were to establish the effect of micro and macro-economic factors which include Asset Quality as measured by the Non-Performing Loan (NPL) ratio, Cost Efficiency (CE), Cash Reserve Requirement (CRR) and Lending Interest Rate (LIR) on the financial performance of commercial banks in Malawi. An additional objective was to examine the effect of Economic Growth (GDP) as a moderating variable. The study used secondary data covering a fifteen-year period from 2000 to 2014. The population for the study was made up of all the commercial banks licensed by the Reserve Bank of Malawi (RBM), Malawi's central bank. The target population of the study constituted the ten commercial banks, except one, in the Malawian banking sector as licensed by the RBM. The study used census technique and analyzed data obtained from the commercial banks. The data collected was in form of audited financial reports which were collected from each of the banks and from Bankscope, an international database for financial statements for commercial banks. Additional data, particularly in respect to Economic Growth, was obtained from publications prepared by the RBM and the World Bank. The study used mixed research design encompassing both descriptive and correlational research techniques. Under the descriptive statistics, important metrics including the mean, standard deviation and variance of each of the key variables were obtained and analyzed across the commercial banks. A series of diagnostic tests were conducted including tests for normality, stationarity, multicollinearity, autocorrelation and heteroscedasticity. Hausman test for random and fixed effects was also undertaken. Generalized Least Squares model was used for the quantitative analysis based on its suitability in dealing with panel data and in resolving problems of autocorrelation and heteroscedasticity which were detected. The study found that independent variables: Asset Quality and Cost efficiency, and Lending Interest Rate had the expected signs

and were statistically-significant at the 5% level, hence, it was concluded that they had an effect on the financial performance of commercial banks in Malawi. Cash Reserve Requirement was, however, found not to be statistically significant at the 5% level. The study also found that the moderating variable, Economic Growth had a significant influence on the effect of the four independent variables based on the analysis of F-statistic and R-square of the moderated and unmoderated models. Various recommendations were made, the main ones being that the regulatory framework in Malawi should ensure that commercial banks have strong credit risk management practices for the identification, measurement and monitoring of credit risk. The study also recommends that commercial banks in Malawi should institute robust credit risk management systems in order to achieve high asset quality through the minimization of incidence of non-performing loans on their books so as to enhance their respective banks' financial performance.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

1.1.1 Overview of Micro and Macro-Economic Factors

All over the world and throughout the financial history, banks are known to play an important role in the financial system. Banks, mobilize savings and demand deposits, on the one hand, and extend credit, on the other. In this way, they turn illiquid assets into liquid assets (Diamond & Dybvig, 1983). Banks also facilitate improvement in the society's living standards by supporting various products and services to the market such as trading activities, channeling of financial resources between savers and borrowers and issuing required financial resources to reduce risk and uncertainty in the economy as a whole. Gutu, (2015) echoes the same idea and explains that banks are important entities in the economy because they are the conduit for the process of forwarding the resources from those who have a surplus to those who have a deficit. Through their intermediation activities, banks facilitate the development process of an economy. Therefore, for this critical role of banks to be sustainable, banks need to financially perform satisfactorily to enable them efficiently undertake their intermediation role (Gutu, 2015).

An efficient banking system is resilient and stable and can withstand various shocks and hence bring about financial stability in an economy. Banks' financial performance, however, is determined by micro- and macro-economic factors. Both categories are important as they affect the financial performance of banks in specific ways. According to Talaso, (2015), the micro determinants originate from bank specific and industry specific variables affecting financial performance, hence, they are also known as bank-specific factors. The group of the bank-specific determinants of performance involves operating efficiency and financial risk. Studies dealing with internal determinants employ various variables which may include asset quality, cost efficiency (expenses

management), bank size, leverage, liquidity, risk management and among others. The group of micro determinants referred as industry specific variables describes the industry-structure factors that affect bank profits, which are not the direct result of managerial decisions. These are industry concentration and the ownership status of banks. The Structure-Conduct Performance hypothesis figures prominently among theories that relate market power to bank profitability.

The macroeconomic factors refer to the environment within which the banking system operates. These factors are also known as external factors and represent variables that are not related to the banks' management but reflect the economic and legal environment that affects the operation and performance of financial institutions. Brinson, Singer and Beebower (1991), defined macro-economic variables as those that are pertinent to a broad economy at the regional or national level and affect a large population rather than a few selected individuals. The variables identified as having major influence include; cash reserve ratio, interest rates, inflation, gross domestic product (GDP), currency exchange rate, legal and regulatory environment and risk. This study employs both micro and macro-economic factors and examines their effect on the performance of commercial banks in the Malawian banking sector.

1.1.2 Non-performing Loans and Bank Performance

Among the various factors that affect performance of bank, most studies single out poor asset quality, as measured by the level of non-performing loans (NPLs), as a major cause of bank failures and financial instability. The discussion on NPLs has gained increasing attention in the last few decades largely because the immediate consequence of large amount of NPLs in the banking system is bank failure as well as economic slowdown (Lata, 2014). Saba, Kouser and Azeem (2012) comment that the nexus between the NPLs and financial performance of banks, is regarded a fact in literature of banking. Increase in NPLs rate is referred often as the failure of credit policy too. NPLs have become an important metric for banks not only because of the recent financial crisis that

the world went through but also due to the intrinsic significance of the phenomenon of NPLs especially in regard to how they affect the financial intermediation role of commercial banks which constitutes the banks' main source of their income, and ultimately, the financial stability of an economy (Klein, 2013). Lending is the main business of financial institutions and loans are naturally the main asset and the major source of revenue for banks (Kwambai & Wandera, 2013). Khemraj and Pasha (2012) assert that it is widely accepted that the quantity or percentage of NPLs is often associated with bank failures and financial crises in both developing and developed countries.

According to Fofack (2005), the occurrence of banking crises have historically, often been associated with a massive accumulation of NPLs which can account for a sizable share of total assets of insolvent banks and financial institutions (Fofack, 2005). As explained by Kwambai and Wandera (2013), this is due to the fact that lending is the main business of financial institutions and loans are naturally the main asset for banks. Khemraj and Pasha (2012) echo the same argument and explain that high percentages NPLs are often associated with performance problems of bank and financial crises in both developing and developed countries. There is abundant evidence that the financial and banking crises in East Asia and Sub-Saharan African countries were preceded by high NPL levels. The global financial crisis, which originated in the USA, was also attributed to the rapid default of sub-prime loans and mortgages. In view of this reality it is, therefore, understandable why a lot of emphasis is placed on NPLs when examining financial vulnerabilities. The efficiency of the banking sector can be severely compromised by NPLs. According to Olweny and Shipho (2011) poor asset quality led to many bank failures in Kenya in the early 1980s during which period 37 banks collapsed following the banking crises of 1986-1989, 1993-1994 and 1998. Most of the financial institutions that collapse in 1986 failed due to non-performing loans. The monetary authorities in Malawi, the Reserve Bank of Malawi, reported an increasing level of non-performing assets in the banking sector in Malawi (RBM, 2012). The asset quality, as measured by NPLs, deteriorated and the problem was reflected in the position

of the percentage of non-performing loans (NPLs) to gross loans (RBM, 2014). This situation was of concern recognizing that the financial performance for any commercial bank in the banking industry is measured in terms of profitability. Evidence from Asia indicates that there was more than threefold increase in the volume of NPLs in Indonesian banks in the period leading up to the financial crisis (Cortavarria, Dziobek, Kanaya & Song, 2000) and over sixty banks collapsed during the crisis. NPLs represented about seventy five percent of total loan portfolios. Karim, Chan, Hassan, 2010, indicate that in both Malaysia and Singapore, growth and innovation was constrained by banks which faced the accumulation of NPLs which eroded their capital.

In the Middle East, according to Espinoza and Prasad (2010), the global crisis exposed the vulnerabilities of the banks in the Gulf Cooperation Council (GCC) to varying degrees. GCC countries experienced significant banking credit between 2003 and 2008. The favourable macroeconomic environment preceding the global crisis had been conducive to favourable credit conditions and lower NPLs. In 2009, the NPLs rose sharply and credit stagnated, causing worries that economic recovery could be stagnated by credit constraints. NPL levels increase as the economic situation deteriorates and interest payments rise. Conversely, deterioration in banks' balance sheets may feed back into the economy because banks will tighten credit conditions, especially if there remains uncertainty in the valuation of projects and of assets. Krueger and Tornell (1999) attribute the credit crunch in Mexico after the 1995 crisis partially to NPLs. They point out that banks were burdened with credits of negative real value, thereby reducing the capacity of the banks in providing fresh fund for new projects. In Asia, both Malaysia and Singapore, growth and innovation has been constrained by banks which faced the accumulation of NPLs which eroded their capital (Karim *et al,* 2010).

Commenting on the Central and Eastern and South-Eastern Europe (CESEE), Klein (2013) discloses that high and rising levels of NPLs in most of the CESEE countries exerted a strong pressure on banks' balance sheets which adversely effected the banks' lending operations. NPLs in the region increased to an average of 11 percent (end-2011)

from just above 3 percent in 2007 and this was a destabilizing factor, with the feedback effects from the banking system to economic activity undermining a sustained recovery and posed significant vulnerabilities going forward. In North America, the USA saw its NPL ratio rise to an alarming 7.50 percent during its peak in the first quarter of 2010 from below 3.0 percent, prior to 2008, in light of the ongoing financial crisis, though it declined to 5.55 percent during the fourth quarter of 2011. In South America, Argentina experienced domestic credit growth of 36.14 percent during the second quarter of 2012, while Brazil saw domestic credit growing by 13.36 percent during the third quarter of 2012. These growth rates were not accompanied by significant increases in NPLs at least not for Argentina, Brazil and Mexico. Bréard, Blancas, Correa and Arbe (2014), comment that asset quality metrics in South America pointed towards a record-low level of NPLs which reached 3.0 percent of total loans. The Mexican banking sector was well capitalized, however, the NPL ratio increased to 3.4 percent in December, 2013, above the 2.5 percent registered a year earlier, due to financial problems among major home builders. In Colombia, the NPL ratio rose modestly, reaching 2.1 percent in October, 2013 from 1.9 percent from previous year. In Venezuela, the local credit context remained stable. Based on official data, credit growth (only in the banking system) accelerated whilst the NPL ratio decreased to 0.6 percent in July, 2013 from 0.9 percent the previous year.

1.1.3 Global Perspective of Micro and Macro-Economic Factors and Bank Performance

A number studies have carried out research on factors that affect bank profitability using linear regression models. Much of their focus was on internal factors with only few factors involved. Furthermore the econometric approach in many cases was insufficiently described (Molyneux & Thornton, 1992). However, a meaningful analysis should consider both micro and macro environment. In developed countries a number of studies have investigated the reasons for inefficiency in commercial banks, with more weights placed on X-inefficiency. Basing on CAMEL model, which is mostly used in

banking supervision, the empirical findings indicate liquidity as well as the quality of an asset influenced the efficiency and performance of commercial banks. Wheelock and Wilson, (1995) using stochastic cost and profit approach investigated the reasons for bank failure in the USA, the empirical findings indicated that well-capitalized banks, highly liquid banks and less NPL are likely to perform higher in efficiency and profitability compared to those with low capital, low liquidity and poor asset quality. Similar findings were obtained in the same country by, Berger and Humphrey (1997).

Other cross country studies were done in European countries aimed at investigating macro and micro economic factors for banking performance. A study by Casu and Molyneux (2003) used Data Envelopment Analysis (DEA). The study examined efficiency status of various European banks using tobit regression model. Determinants of bank efficiency were taken into account, the empirical findings indicated that from the establishment of the European single market, there had been little improvement in efficiency levels, with country specific factors being the cause for efficiency in most banks. However with bootstrapping method, similar conclusion was made as geographical factors do influence the efficiency, but capital ratio and Return on Average Equity did not influence bank efficiency levels.

In Latin America different studies were done to examine factors influencing the efficiency in banks. In Brazil, the study by Tarbak and Ruiz (2008) examined the cost and profitability in Brazilian banks later on determinants of efficiency were examined, in this study bank specific characteristics were found to influence bank efficiency, with capital strength indicating a strong significant relationship . The other country within this category is Mexico and a study by Garcia-Garza (2011) found that Mexican banking sector, the main determinants of increase in bank performance were increased loan intensity and GDP growth, but inefficiency was caused by non performing loans, increased noninterest expenses and inflation rate .

In Saudi Arabia, a study by Assaf, Barros, and Matousek (2011), found that Saudi Arabian banks consistently improved their efficiency status since (2004). In case of determinants it was found that bank size significantly influence the efficiency of banks with larger value increase the technical efficiency of the banks, on another hand NPM (Net profit Margin) was found to be significant and positive however its coefficient is small, which implies that even efficient banks still have a lower profit margin. In contrast with the above non parametric approach the other study was done using Stochastic Frontier Approach (SFA) over a recent unstudied period in the same country, SFA was used to estimate profit and cost efficiency there after factors determining inefficiency were determined.

Cross sectional study was done in MENA countries (Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malta, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, West Bank and Gaza, and Yemen) which are also considered countries within the emerging markets. The empirical findings revealed Islamic banks operating in Middle East performed well compared to the counterpart in Asian countries. Moreover during the period of the study pure technical efficiency were found to be higher than scale efficiency in MENA countries compared to the Asian countries. The Tobit regression model indicates Loan intensity, the size of the banks measured by market share, capitalization and profitability were significantly related to efficiency however technically small banks and those with a lower NPL ratio were found to be more efficient than others in this study.

In developing countries various factors were also used to determine the efficiency of commercial banks. Some are bank specific characteristics, industry specific characteristics as well as macro environment. In the developing countries, ownership is considered as one of the industry specific determinant in most developing country studies. Other factors included inflation which is normally caused by economic instability within these countries. Additionally, economic growth measured by GDP was another key factor, in addition to bank size and the level of NPL just to mention a few. A

number of studies within sub-Saharan Africa fall within this category. Sandrine Kablan, (2010) undertook a study on bank efficiency and determinants in sub Saharan Africa. aimed at assessing the level of financial development as well as the efficiency of banks within this part of the world. The study observed that most Sub Saharan African countries were found to be cost efficient however the NPL were found to undermine the efficiency of these banks which called upon the improvement in regulatory and credit environment. Furthermore the political and economic environment has affected the efficiency and financial development in Sub Saharan Africa which resulted in lowering of efficiency levels.

1.1.4 Perspective from the Malawi Banking Sector

Malawi ranks among ten of the poorest economies in the world with a GDP per capita of less than US$350, the incidence of poverty of nearly 50 percent and food accounting 51 percent of the consumer price index (CPI). Only 19 percent of the adult population that is banked and financial exclusion for the micro-small and medium enterprise (MSME) sector at 59 percent mean that the development of a vibrant MSME sector and the economy are both adversely affected (FinScope, 2012). The Malawi economy is dominated by uni-modal rain-fed agriculture which accounts for 30 percent of GDP, 90 percent of exports and engages nearly 90 percent of the labour force. Manufacturing which is largely agro-based, has a share in GDP of just 10 percent. However, the shares of both sectors in GDP have recently been declining against mining and tertiary activities since 2009.

According to RBM (2013), inflation has remained a challenge to the macro-economic stability of the country. In the past three years, for example, inflation as measured by the Consumer Price Index rose from 7.7% in September 2011 to 36.4% in March, 2013. Official reserves declined from US$299.0 in September, 2011 to US$185.4 million in March, 2013. The foreign exchange rate of the Malawi Kwacha to the US Dollar depreciated from US$1.0:MK166.0 as at September, 2011 to US$1.0:MK405.0 as at

March, 2013. Given in the Table 1.1 provides a five-year trend of the selected economic indicators:

Table 1.1: Trend of Selected Economic Indicators

	2010 September	2011 March	2012 September	2013 March
Inflation Rate	7.7%	11.4%	28.3%	36.4%
Official Reserves (US$'million)	299.0	190.2	178.5	185.4
Exchange Rate to the US Dollar	166	167	299	405

Source: Reserve Bank of Malawi (2013)

Kaluba and Chirwa (2015) explain that the country's economic performance in terms of growth of real GDP has improved considerably from an average of 1.6 percent per annum during 2000-2004 to 7 percent between 2005 and 2009 but declining to around 5 percent thereafter. The recent growth performance has however not translated into significant poverty reduction noting that the poverty incidence has hovered around 50 percent throughout the post-2005 period while inequality has remained high but stable in urban centres but low and growing in rural areas. The economic structure has changed slightly with agriculture's share in GDP declining from over 35 percent before 1999 to below 30 percent thereafter.

Relative to the development and size of the economy the Malawi banking sector is fairly developed with assets representing 37 percent of GDP (Kaluba & Chirwa, 2015). The banking sector in Malawi, however, is still the primary form of financial intermediation and, as such, it is the largest conduit for the mobilization of domestic savings, the main source of external capital to firms and the key player in the payment system. The

financial sector in Malawi is relatively shallow and is largely not integrated into the global financial system (RBM, 2013). The country's banking sector is small with the commercial banks which are regulated by the central bank, the Reserve Bank of Malawi.

The financial sector was liberalized from1994 and this included a flexible exchange rate and saw the annual inflation rate shooting to a record of over 60 percent in 1995 countered by a bank rate of 50 percent. The inflation rate was brought down to single digits between 2007 and 2011 at the back of some success with subsidy backed food production. After that, inflation went up to an average over 25 percent in 2013. On account of its small economy, Malawi depends on its neighbors for access to the sea and international markets. For this reason, the country suffered for more than two decades from the chronic instabilities in the neighboring countries, especially the civil war in Mozambique (Malawi Government, 2012). Each time there are economic or political disturbances in the neighboring countries, Malawi is affected by the spill-over effects. Malawi remains in a vulnerable position. Due to its over-reliance on agriculture and foreign aid, the country is susceptible to the whims of Mother Nature, global commodity prices and international donors. Agriculture has long been the backbone of the Malawian economy.

1.1.5 Structure and Composition of the Malawian Banking Sector

The banking sector in Malawi is made up of the Reserve Bank of Malawi (RBM), eleven commercial banks, one leasing company and two discount houses. Compared to countries within the region, Malawi's banking industry is small yet growing in terms of product range and coverage (RBM, 2010). The RBM, Malawi's Central Bank, was established in 1965 under an Act of Parliament. It is responsible for ensuring monetary stability, maintaining a sound financial system and managing foreign exchange. The Reserve Bank is the regulatory and supervisory authority of all banks and other financial institutions. The RBM handles and processes all applications from prospective investors wishing to establish a bank in Malawi. As at 31st December, 2014, there were eleven

licensed commercial banks which provided a wide range of commercial banking services including acceptance of deposits in the form of demand, savings and time; foreign exchange services, provision of short and medium term credit facilities and financing of international trade. The commercial banks in the Malawian banking sector include the National Bank of Malawi, Standard Bank Malawi, First Merchant Bank Limited, NBS Bank Limited, Ecobank Malawi Limited, FDH Bank Malawi, Malawi Savings Bank, Opportunity International Bank Malawi Limited, Indebank Limited, Nedbank Malawi Limited and CDH Investment Bank.

The National Bank is the largest commercial bank in Malawi. It was incorporated in July 1971, but licensed under the Banking Act (1989) in September 1990. The bank was listed on the MSE in August, 2000. As at end 2014, it operated 14 branches and 17 agencies. The Standard Bank is the second largest commercial bank in Malawi. The bank was registered as a commercial bank in Malawi in March 1969 and was listed on the MSE in April, 1998. In December 2001, Standard Bank, through its subsidiary Stanbic Africa Holdings, acquired a 60.18% interest in the bank and became the majority shareholder. The bank then went through several name changes from Stanbic Bank to Standard Bank Limited on 1st June, 2007 to identify with its parent bank, the Standard Bank Group of South Africa. As at end 2014, the bank operated 7 branches and 21 agencies. First Merchant Bank is the third largest bank in Malawi. The bank was granted a banking licence in 1995 and was listed on the MSE in 2009. FMB was founded as a joint partnership between the Anadkat family and Prime Bank of Kenya. It is Malawi's first private bank. The bank had 9 branches and 20 agencies as at end 2014. The NBS Bank is the fourth largest commercial bank in Malawi. The bank was initially called New Building Society (NBS) which was formed in 1964 following the merger of Central Africa Building Society, Commonwealth Century Building Society and First Permanent Building Society. The key activity was financing of mortgages for the construction and acquisition of homes. The NBS was transformed into a commercial bank following the issuance of a banking license by the RBM. It changed its name into

NBS Bank and was subsequently listed on the MSE on 27th June, 2007. As at 31st December, 2014, the bank had 13 branches and 39 agencies.

Ecobank Malawi Limited (previously known as Loita Bank) is the fifth largest bank in Malawi. It was granted a banking license following acquisition of majority shareholding by Ecobank Transnational Incorporated (ETI). It operated 8 branches in Malawi as at end 2014. The FDH Bank is the sixth largest commercial bank in Malawi. The bank operated 11 branches and 2 agencies as at end 2014. The Malawi Savings Bank is the seventh largest commercial bank in Malawi. It is a wholly owned government bank and was granted license to operate as a commercial bank in March 1995. As at end 2014, it operated 14 branches and 36 agencies. The Opportunity Bank is the eighth largest commercial bank in Malawi. It was granted a banking license on 21st March 2002 but remains a subsidiary of Opportunity Transformation Investment (USA). As at end 2014, the bank had 6 branches and 40 agencies. Indebank is the ninth largest commercial bank in Malawi. The bank was initially called the Investment and Development Bank of Malawi and was inaugurated on 30th December, 1972 with the main objective of contributing to the advancement of productive business enterprises. Indebank was licensed as a commercial bank in May 2001 following the merger of Investment and Development Bank of Malawi and Indefinance. Indebank operated 6 branches and 10 agencies as at December, 2014. Nedbank is the tenth largest commercial bank in Malawi. The bank which is a subsidiary of the Nedbank Group, South Africa, was granted a banking license on December 2002. As at end 2010, it operated 4 branches and 2 agencies. CDHIB was founded in 1998 as Continental Discount House Limited (CDH), which has operated in the financial sector since August that year. In May 2011, CDH was granted a banking license by the RBM. The institution dropped the discount house license it previously held, but continues to offer almost all services it used to under the discount house license. It then rebranded to CDH Investment Bank. In April 2012, CDHIB commenced commercial and investment banking business. Leasing and Finance Company is the only leasing company in Malawi and provides asset financing services to companies and households wishing to purchase motor vehicles, machinery or

other capital goods. It was licensed under the Banking Act (1989) in September 1990. It is wholly owned by First Merchant Bank. There are two discount houses namely: Continental Discount House (CDH) Limited and First Discount House (CDH) Limited. These help provide liquidity to the secondary market for government bills and registered stocks by accepting to purchase (sell) these financial instruments from (to) the general public. CDH was licensed under the Banking Act (1989) in March, 1998 while FDH was licensed in July 2001.

Malawi's money market includes all the commercial banks, discount houses, and the leasing company. Other players include financial firms dealing in specialist services and a few privately managed pension funds. Currently there are two major pension funds management companies namely, NICO Life and Old Mutual. The major products traded on the money market are government papers i.e. Treasury and RBM Bills. Primary trades are carried out on behalf of clients by Stockbrokers Malawi Limited, discount houses, CDH Stockbrokers, FDH Stockbrokers and African Alliance Limited.

1.2 Statement of the Problem

Among the various micro and macro-economic factors that affect a banking system, non-performing loans pose a worrisome threat to the performance of banks and the financial stability of an economy as a whole (Wangai, Bosire & Gathogo, 2014). By affecting the financial stability of the economy of a country, they undermine the financial intermediation role of commercial banks, and ultimately, the economy (Klein, 2013). Over the past decade, the credit quality of loan portfolios across most countries in the world remained relatively stable until the financial crises hit the global economy in 2007-2008. Since then, average bank asset quality deteriorated sharply due to the global economic recession (Beck *et al*, 2013).

In the banking sector in Malawi, credit risk was elevated and resulted in deterioration of banking sector asset quality as measured by the ratio of NPLs to gross loans and leases (RBM, 2013). Clarifying on the problem, RBM (2014), indicated that the problem of

NPLs in the Malawian banking sector had continued to worsen. NPLs as a percentage of gross loans worsened from 6.5 percent recorded in September 2012 to 11.6 percent in March 2013, to 13.6 percent in September 2013 and to 15.4 percent in December, 2013. The ratio deteriorated further to 15.7 percent in March, 2014.

To place the Malawi situation in context, it is noted that the level of NPLs in East African commercial banks were lower and within acceptable levels, which signified that the banking industry in this region was in a better shape (MFWFY, 2014). At the close of 2012, in the Ugandan, Kenyan, Tanzanian and Rwandan economies, the NPL ratios stood at 3.9 percent, 4.7 percent, 7.4 percent and 5.8 percent, respectively (BOU, 2012; CBK, 2012; BOT, 2013 and NBR, 2012). In Southern African countries, as at December, 2012, the NPL position of Mozambique, Mauritius and South Africa was 2.3 percent, 3.6 percent and 4.6 percent respectively (WDI, 2013). In key economies outside Africa, according to the RBA (2013), the NPL position in the Eurozone, UK, USA was within the range of 5 percent and 7.8 percent; whilst in Canada and Australia, the NPL ratio stood at under 2.0 percent over the same time. A study by Bréard *et al* (2014), indicates that NPLs as at 31st December, 2013 in South American countries were also lower than in the Malawian banking system as follows: Brazil, Mexico, Colombia, and Venezuela were 3.0 percent, 3.4 percent, 2.1 percent and 0.6 percent, respectively.

Some studies were carried out on the Malawian banking sector but they did not investigate the effect of the micro and macro-economic factors on the financial performance of commercial banks in the Malawian banking sector. The studies which are discussed under Empirical Literature Review include both those which were done in Malawi by Chirwa (1999) who used cointegration and error correction model and found a long-run relationship between profitability and market structure; Chirwa (2001) who used the market structure–performance hypothesis and found a significant relationship between monopoly power and commercial bank profitability. Mlachila and Chirwa (2002) examined financial reforms and interest rate spreads in Malawi, Kanyoma (2006) focused on the financial performance of privatized banks. Lipunga (2014) studied the

risk disclosure level in annual reports of the Malawian commercial banks and the related influence on profitability; and Kaluba and Chirwa (2015) tailored their investigation on competition and banking industry regulation in Malawi. The cited studies did not directly investigate the effect of micro and macro-economic factors on the financial performance of commercial banks in Malawi. This was the point of entry of this research. This study, therefore, contributes meaningfully to knowledge, specifically, in respect to the Malawian banking sector.

1.3 Objectives of the Study

The study had the following objectives:

1.3.1 General Objective

The general objective of this study is to investigate the effect of micro and macro-economic factors on the financial performance of commercial banks in the Malawian banking sector.

1.3.2. Specific Objectives

The specific objectives of the study are as follows:

1. To establish the effect of asset quality on the financial performance of banks in the Malawian banking sector.
2. To assess the effect of cost efficiency on the financial performance of banks in the Malawian banking sector.
3. To establish the effect of cash reserve requirement on the financial performance of banks in the Malawian banking sector.
4. To establish the effect of lending interest rate on the financial performance of banks in the Malawian banking sector.

5. To explore the moderating effect of economic growth on the relationship between the micro and macro-economic factors which affect the financial performance of Malawian commercial banks.

1.4 Study Hypotheses

The study had the following five hypotheses:

Research Hypothesis One:

$H_0$1: Asset Quality has no effect on the financial performance of banks in the Malawian banking sector.

$H_1$1: Asset Quality has an effect on the financial performance of banks in the Malawian banking sector.

Research Hypothesis Two:

$H_0$2: Cost Efficiency has no effect on the financial performance of banks in the Malawian banking sector.

$H_1$2: Cost Efficiency has an effect on the financial performance of banks in the Malawian banking sector.

Research Hypothesis Three:

$H_0$3: Cash Reserve Requirement has no effect on the financial performance of banks in the Malawian banking sector.

$H_1$3: Cash Reserve Requirement has an effect on the financial performance of banks in the Malawian banking sector.

Research Hypothesis Four:

$H_0$4: Lending Interest Rate has no effect on the financial performance of banks in the Malawian banking sector.

$H_1$4: Lending Interest Rate has an effect on the financial performance of banks in the Malawian banking sector.

Research Hypothesis Five:

$H_0$5: Economic growth, as a moderating variable, has no influence on the effect of micro and other macro-economic factors which affect the financial performance of banks in the Malawian banking sector.

$H_1$5: Economic growth, as a moderating variable, has an influence on the effect of micro and other macro-economic factors which affect the financial performance of banks in the Malawian banking sector.

1.5 Justification of the Study

Commercial banks in the Malawi economy are considered to be highly important because of their special role in financial intermediation and the support which the sector provides to the overall financial stability of the economy. As of 2010, the bank credit to deposit ratio stood at 70.9 percent (RBM, 2016). According to FinScope (2014), interventions from both the public and private sectors contributed to enhanced financial services access resulting in an increase in the banked population by 14% between 2010 and 2014. Total assets of the banking sector stood at MK780 billion whilst gross loans extended by the banks was at MK316.3 billion. However, according to the Reserve Bank of Malawi, the asset quality as measured by NPLs worsened from 6.5 percent in September 2012 to 15.7 percent in March, 2014, thereby posing a systemic risk to the banking sector specifically, and the financial stability of the economy as a whole. Despite this development there was unavailability of a comprehensive empirical

research on the effect of micro and macro-economic factors on the financial performance of commercial banks in Malawi banking sector.

1.6 Significance of the Study

The findings of this study are of particular importance to various sectors. The various scholars and other researchers interested in the financial performance of commercial banks will benefit from the findings of this study. The findings will add to the body of knowledge in this field, mainly, to the banking sector in Malawi. Particularly the study will benefit the following:

Management: The study findings are of importance to management of commercial banks since they address the effect of micro and macro-economic factors on the profitability of commercial banks in Malawi. This will contribute to better understanding by the Management team and will assist them design and implement informed strategies to ensure enhanced and sustained performance of the Malawian commercial banks.

Policy makers: The study findings are of value to the Government of Malawi as they will bring into light various policies which are essential to be implemented in the Malawian banking sector to ensure that commercial banks operate with vibrancy and perform their intermediation role efficiently.

Researchers and Scholars: The study findings are of great importance to researchers as they will gain both theoretical and practical experience on the effect of micro and macro-economic factors which have a significant effect on performance of commercial banks in Malawi. The study makes empirical contribution to the field of bank performance in general and particularly to the performance of commercial banks in Malawi.

Malawi's banking sector: The findings of the study to be used by the banking sector to enhance the management of micro and macro-economic factors and devise appropriate ways to assuage any adverse effect on the financial performance of commercial banks in Malawi.

1.7 Scope

The study investigated the effect of micro and macro-economic factors on the financial performance of commercial banks in Malawi over a fifteen year-period, from 2000 to 2014. The study restricted itself to the areas of investigation as addressed by the research objectives which involved establishing the effect of micro and macro-economic factors, specifically, Asset Quality, Cost Efficiency, Cash Reserve Requirement and Lending Interest Rate on the financial performance of banks in the Malawi; as well as exploring the moderating effect of Economic Growth on the relationship between the cited variables and financial performance of Malawian commercial banks.

The academic scope of the study covered the identification of the variables used in the study, employment of appropriate data as well as formulation of the appropriate model. The academic scope also covered the interpretation and policy implications of the findings. Geographically, the study was undertaken in the banking sector in Malawi whilst the theoretical scope of the study included identification and review of the relevant theories that were aligned to the study objectives.

1.8 Limitations of the Study

The study focused on a specific number of micro and macro-economic variables that affect the financial performance of commercial banks in the Malawian banking sector. It is recognized that there are other variables that affect bank performance. It was not possible to include all the variables in one study. This limitation was, however, mitigated by the fact that the variables used in the study provided important insight into the effect of micro and macro-economic factors on the financial performance of

commercial banks in Malawi. An additional limitation is that the study restricted itself to the licensed commercial banks in Malawi and excluded other financial intermediation players such as the foreign exchange bureaus, mortgage banks, micro finance institutions, Savings and Credit Cooperatives (SACCO's) and pension funds. Therefore, the findings of the study may not be generalized to the whole financial services industry in Malawi. Related to this, the study focused on the banking sector in Malawi, hence, the findings may be generalized to other countries only with caution.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature by various scholars in respect to micro and macro-economic factors which affect the financial performance of commercial banks. The chapter aims to present the gaps in the literature requiring investigation and the development of a research model and research hypotheses. The chapter is divided into three main parts. The first part covers the theoretical review on bank performance and the various explanatory variables that have been investigated leading to the development of the conceptual framework guiding this study. The second part presents the empirical review of the past studies done by various researchers and their findings. The chapter also gives a critique of the existing literature and finally, a summary and an analysis of the research gaps is given.

2.2 Theoretical Review

Popper (1963) explains that theory is a set of statements or principles devised to explain a group of facts or phenomena especially one that has been repeatedly tested. Similarly, Hawking (1996) submits that theories are analytical tools for understanding, explaining, and making predictions about a given subject matter. In a similar vein, Camp (2010) explains that a theory is a set of interrelated constructs (concepts), definitions and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting phenomena.

2.2.1 Portfolio Theory

Theories pertaining to the financial performance of banks were pioneered by the balanced portfolio theory which provided an insight to the study of bank profitability and the application of two industrial organizations models: the Market Power (MP) and

Efficiency Structure (ES) theories (Athanasoglou, Brissimis and Delis (2006). The portfolio theory approach is the most relevant in bank performance studies since a good portfolio points directly to the quality of asset book. Additionally, the ability to obtain maximum profits depends on the feasible set of assets and liabilities determined by the management and the unit costs incurred by the bank for producing each component of assets (Nzongang & Atemnkeng, 2006). Portfolio Theory was initially developed by Harry Markowitz in the early 1950s (Markowitz, 1952). In the 70s, Black and Scholes (1973) published the theory and provided banks with a strategy on how to diversify their loans and investments. Prior to this, banks had no real investment strategy and their only option was to obtain as much collateral as possible and make default an unattractive option.

The theory was the first serious theoretical attempt to quantify the relationship between risk and return. Portfolio theory characterizes risk as the uncertainty of returns, and uses standard statistical techniques to quantify the relationship between risk and return. These techniques include the application of statistical measures such as variance and standard deviation to quantify the uncertainty of returns. The theory purports that investors can construct portfolios to optimize or maximize expected return based on a given level of market risk, emphasizing that risk is an inherent part of higher reward. Thus, it is possible to construct an 'efficient frontier' of optimal portfolios, offering the maximum possible expected return for a given level of risk. The theory suggests that it is not enough to look at the expected risk and return of one particular stock. By investing in more than one stock, an investor can reap the benefits of diversification, particularly a reduction in the riskiness of the portfolio. Portfolio Theory quantifies the benefits of diversification, also known as 'not putting all of your eggs in one basket'. Olweny and Shipho (2011) explains that the optimum holding of each asset in a wealth holder's portfolio is a function of policy decisions determined by a number of factors such as the vector of rates of return on all assets held in the portfolio, a vector of risks associated with the ownership of each financial assets and the size of the portfolio. It implies

portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management.

Applied in banking the MP hypothesis posits that the performance of bank is influenced by the market structure of the industry. There are two distinct approaches within the MP theory; the Structure-Conduct-Performance (SCP) and the Relative Market Power hypothesis (RMP). Tregenna (2009) explains that under the SCP approach, the level of concentration in the banking market gives rise to potential market power by banks, which may raise their profitability. Olweny and Shipho (2011) clarify that banks in more concentrated markets are most likely to make abnormal profits by their ability to lower deposits rates and to charge higher loan rates as a results of collusive (explicit or tacit) or monopolistic reasons, than firms operating in less concentrated markets, irrespective of their efficiency. The RMP hypothesis, on its part, argues that bank profitability is influenced by market share. It assumes that only large banks with differentiated products can influence prices and increase profits. They are able to exercise market power and earn non-competitive profits. The basic postulate under the ES hypothesis is that banks earn high profits because they are more efficient than others. The ES hypothesis has two prongs, namely the X-efficiency and Scale–efficiency hypothesis. The X-efficiency approach, more efficient firms are more profitable because of their lower costs. Such firms tend to gain larger market shares, which may manifest in higher levels on market concentration, but without any causal relationship from concentration to profitability (Athanasoglou *et al*, 2006). The scale approach emphasizes economies of scale rather than differences in management or production technology. Larger firms can obtain lower unit cost and higher profits through economies of scale. This enables large firms to acquire market shares, which may manifest in higher concentration and then profitability.

The above theoretical analysis shows that MP theory assumes bank profitability is a function of external market factors, while the ES and Portfolio theories largely assume that bank performance is influenced by internal efficiencies and managerial decisions.

Several models of the banking firm have been developed to deal with specific aspects of bank behavior but none is acceptable as descriptive of all bank behavior. Some of these approaches are: univariant analysis, multiple discriminant analysis, multiple regression analysis, canonical correlations analysis and neural network method. Olugbenga and Olankunle (1998) noted that a major limitation of the univariant analysis approach is that it does not recognize the possibility of joint significance of financial ratios, while the canonical correlations method precludes the explicit calculation of marginal value of independent variables on the dependent variable. Nor can the significance of individual explanatory factors be ascertained. They noted that multiple regression approaches correct for these limitations and they produce comparable results to the discriminant analysis method.

Bakar and Tahir (2009) evaluated the performance of the multiple linear regression technique and artificial neural network techniques with a goal to find a powerful tool in predicting bank performance. Data of thirteen banks in Malaysia for the period 2001-2006 was used in the study. ROA was used as a measure of bank performance and seven variables including liquidity, credit risk, cost to income ratio, size, concentration ratio, were used as independent variables. It was noted that neural network method outperforms the multiple linear regression method but it lacks explanation on the parameters used and they concluded that multiple linear regressions, notwithstanding its limitations, which include the possible violations of its assumptions, can be used to study the linear relationship between the dependent variable and independent variables. The method provides significant explanatory variables to bank performance and explains the effect and direction of the contributing variables in a satisfactory way. This study adopted the multiple linear regression method to determine the effects of micro and macro-economic factors on the performance of commercial banks in Malawi. The Portfolio Theories underpin the dependent variable: Financial Performance.

2.2.2 Theory of Information Asymmetry

The theory of Information Asymmetry emerged in the 1970s and 1980s to explain common phenomena that mainstream general equilibrium economics could not explain. The essence of the theory of asymmetric information is that it proposes that an imbalance of information between buyers and sellers can lead to inefficient outcomes in certain markets. The theory is attributed to three economists namely Akerlof (1970), Spence (1973) and Stiglitz (1975) who were jointly awarded the Nobel Prize in economics in 2001 for their respective contributions to the theory.

Akerlof (1970) explained that motor vehicle buyers possess different information from sellers which accords the sellers an incentive to sell goods of less than average market quality. The word 'lemons' was used to refer to cars which were not in good condition or had internal defects. He further explained that buyers cannot effectively single out lemons from good motor vehicles and therefore sellers of good cars cannot get better than average market prices. Extending Akerlof's argument, Spence (1973), modeled employees as uncertain investments for firms and argued that the employers may not be certain about the productive capabilities when hiring. He further argued that the information asymmetry between employers and employees led to scenarios where low-paying jobs create a persistent equilibrium trap that discourages the bidding up of wages in certain markets. Through his work, Stiglitz (1975) placed the concept of asymmetric information into a contained general equilibrium model to describe negative externalities that price out the bottom of markets. For instance, the uncertain health insurance premium needed for high-risk individuals causes all premiums to rise, forcing low-risk individuals away from their preferred insurance policies.

There are a number of implications of asymmetric information, including moral hazard and adverse selection. Moral hazard occurs when people alter their behaviour in the belief that someone else will deal with the effects of their careless behaviour. This occurs because either they think that they are not likely to be found out, such as a

manager not bothering to keep costs to a minimum; or they think they are 'insured' against the damage and loss associated with the behavior. Applying the concept in finance, according to Bebczuk (2003) moral hazard means the borrower's ability to apply the funds to different uses than those agreed upon with the lender, who is hindered by his lack of information and control over the borrower, thereby reducing the likelihood of a loan being repaid. As in the moral hazard case, monitoring costs are tied to a hidden action by the borrower, who takes advantage of his better information to declare lower-than-actual earnings. Another example of moral hazard is when firms' owners 'siphon off' funds, legally or illegally, to themselves or to associates, for example, through loss-making contracts signed with associated firms.

Adverse selection occurs as a result of asymmetric knowledge, as is well illustrated in the lemons problem. When parties to a transaction are ignorant of certain aspects of the transaction, such as the quality of the product they are buying, they are forced to make assumptions, often based on price. For example, a buyer may assume that goods are of poor quality if their price is low, and that goods are of high quality if their price is high. Bebczuk (2003) clarifies that a lender suffers adverse selection when he is not capable of distinguishing between projects with different credit risk when allocating credit. Given two projects with equal expected value, the lender prefers the safest one and the borrower the riskiest. In this context, those undertaking risky activities find it convenient to hide the true nature of a project, thereby exploiting the lender's lack of information. The key distinction between the two types of asymmetric information is that adverse selection appears before the lender disburses the loan, in contrast to moral hazard where the problem takes place after having conceded the capital. The significance of this concept to other markets is that whenever there is information failure, there is the possibility that markets will become lemons markets. This means that the supply of good-quality products will fall and the supply of poor-quality will products rise.

When applied to the banking industry, according to Richard (2014) and Auronen (2003), the theory of asymmetric information suggests that it may be difficult to distinguish

good from bad borrowers which may result into adverse selection and moral hazards problems. The key argument of the theory is that in the market, the party that possesses more information on specific item to be transacted (say, a borrower) is in a position to negotiate optimal terms for the transaction than the other party (in this case, the lender) (Auronen, 2003). The party that knows less about the same specific item to be transacted is therefore in a position of making either right or wrong decision concerning the transaction. Adverse selection and moral hazards have led to substantial accumulation of non-performing assets (NPLs) in banks (Bester, 1994; Bofondi & Gobbi, 2003). Lending has been, and still is, the mainstay of banking business. The existence of banks however, is often interpreted in terms of their superior ability to overcome three basic problems of information asymmetry and thus be able to reduce the NPL levels (Uyemura & Deventer, 1993). This is more true to emerging economies like where capital markets are not well developed. Firms on one hand complain about lack of credits and the stringent requirements set by banks, while banks on the other hand, have suffered large losses on bad loans (Richard, 2008). More information has to be obtained from the clients before loans are extended to them in order to reduce the probability of loan defaults and increase the performance of banks. Conflicts of banking and monetary policies should be managed at the extent to which market forces are left to determine economic growth. An efficient legal system should be put in place to reduce problems caused by information asymmetry in the banking sector.

The problem with imperfect information is that information is a public good. If costly privately-produced information can subsequently be used at less cost by other agents, there will be inadequate motivation to invest in the publicly optimal quantity of information (Hirshleifer & Riley, 1979). The implication for banks is as follows. Once banks obtain information they must be able to signal their information advantage to lenders without giving away their information advantage. One reason, financial institutions can obtain information at a lower cost than individual lenders is that financial intermediation avoids duplication of the production of information. Moreover, there are increasing returns to scale to financial intermediation. Financial intermediaries

develop special skills in evaluating prospective borrowers and investment projects. They can also exploit cross-sectional (across customers) information and re-use information over time.

The concept of information asymmetry plays an important role in bank performance studies since a good portfolio points directly to the quality of asset book and a high-quality asset book manifests low value of NPLs. The Theory Information Asymmetry is the most important theory among the theories reviewed in this section. Its importance emanates from the fact that it addresses the most important resource of banks, which is the 'assets' of the commercial banks; accordingly this theory prompts the first research objective: to establish the effect of asset quality on the financial performance of banks in the Malawian banking sector.

2.2.3 Theory of Economic Efficiency

According to Soto (2009), the term 'efficiency' is derived etymologically from the Latin word 'efficiens' which in turn originates from the Latin verb 'ex facio' which means 'to obtain something from'. The application to economics of this view of efficiency as the 'ability to obtain something from' predates the Roman world and can even be traced back to ancient Greece, where the term 'economics' (οικονομία) was first used to refer to the efficient management of the family, home or estate. Farrell (1957) defined a simple measure of a firm efficiency which could account for multiple inputs. He proposed that the efficiency of a firm consists of two components: technical efficiency which reflects the ability of a firm to obtain maximal output from a given set of inputs, and allocative efficiency, which reflects the ability of a firm to use inputs in optimal proportions, given their respective prices. For example, if a given firm uses quantities of inputs to produce a unit of output, the technical inefficiency of that firm could be represented by the threshold by which all inputs could be proportionally reduced without a reduction in output (Coelli, 1996). Technical efficiency takes a value between zero and

one, and hence provides an indicator of the degree of technical inefficiency of the firm. A value of one indicates the firm is fully technically efficient.

Kauko (2007) explains that bank efficiency studies have become an established field of empirical economics. The studies have developed a relatively standardized methodology and conceptual framework. A central term in this literature is 'managerial efficiency', which refers to the ability of a bank to maximize profits or minimize costs under given circumstances. This expression attributes efficiency to managers. Bank costs are measured by the profit and loss account item normally labeled as 'administrative expenses'. This cost item contains personnel costs, information technology costs, marketing expenditure, office supplies, etc. According to Mohd. Rahman, Yusof, Majid and Mohd (2006), the definition and measurement of bank's inputs and output have been a matter of long standing debate among researchers. In defining inputs and outputs, three main approaches have been widely used in banking literature, namely the production approach, the intermediation approach and the modern approach. The first two approaches apply traditional microeconomic theory of the firm to banking and differ only in the specification of banking activities. In the production approach, bank defines its activity as production of services and views the banks as using physical inputs such as labor and capital to provide deposit and loan accounts. The intermediation approach views banks as the intermediator of financial services and assumes that banks collect deposits, using labor and capital, then intermediate those sources of funds into loans and other earning assets (Sealey & Lindley, 1977). This intermediation approach is argued to be particularly appropriate for banks where most activities consist of turning large deposits and funds purchased from other financial institutions into loans or financing and investments (Favero & Papi, 1995). Finally, the third approach goes one step further and incorporates some specific activities into the classical theory.

Assessing the efficiency of firms is a powerful means of evaluating performance of firms, and the performance of markets and whole economies. The key types of efficiency include allocative, productive, technical, dynamic, social and X-efficiency. Allocative efficiency is achieved when consumers pay a market price that reflects the private marginal cost of production. The condition for allocative efficiency for a firm is to produce an output where marginal cost, just equals price. Productive efficiency is achieved when a firm is combining resources in such a way as to produce a given output at the lowest possible average total cost. Costs will be minimised at the lowest point on a firm's short run average total cost curve. Technical efficiency relates to how much output can be obtained from a given input, such as a worker or a machine, or a specific combination of inputs. Maximum technical efficiency occurs when output is maximised from a given quantity of inputs. The simplest way to differentiate productive and technical efficiency is to think of productive efficiency in terms of cost minimisation by adjusting the mix of inputs, whereas technical efficiency is output maximisation from a given mix of inputs. Social efficiency exists when all the private and external costs and benefits are taken into account when producing an extra unit. Private firms only have an incentive consider external costs into account if they are forced to internalize them through taxation or through the purchase of permit to pollute.

X-efficiency is a concept that was originally applied to management efficiencies by Harvey Leibenstein in the 1960s (Leibenstein, 1966). The concept can be applied specifically to situations where there is more or less motivation of management to maximise output, or not. X-efficiency occurs when the output of firms, from a given amount of input, is the greatest it can be. It is likely to arise when firms operate in highly competitive markets where managers are motivated to produce as much as possible. The full potential of managers is affected by the 'principal-agent problem'. Abdalla (2008) explains that under the 'principal-agent problem', the employer is the "principal" and the employee is the "agent." The interests of agents are not perfectly aligned with those of the principals. Yet the principals can only imperfectly monitor the actions of the agents. This means that agents can advance their own interests at the expense of those of the principals.

This separation causes asymmetric information, where the agents know more than the owners do, and this creates the need for owners to construct mechanisms to monitor and check the performance of agents. The problem develops because the owners and managers usually have different objectives, so the owners cannot trust the managers to act on their behalf, creating the need for constant checking. This leads to inefficiencies in terms of the need to employ checkers and complex monitoring systems. This theory on Economic Cost Efficiency inaugurates research objectives number two: To establish the effect of cost efficiency on the financial performance of banks in the Malawian banking sector.

2.2.4 Theory of Financial Intermediation

The theory on financial intermediation was developed from the 1960's in the twentieth century, the starting point being the work of Gurley and Shaw (1960). The theory, which largely builds on the economics of imperfect information, was further developed in the 1970s through the contributions of Akerlof (1970), Spence (1973) and Rothschild and Stiglitz (1976). The modern theory of financial intermediation analyzes, mainly, the functions of financial intermediation, the way in which the financial intermediation influences the economy on the whole and the effects of government policies on the financial intermediaries. It highlights the role of financial intermediaries in economy, the impact of regulations on financial intermediation, accentuating the role of the central bank in the regulation, supervision and control of financial intermediaries (Andrieș, 2009). The theory argues that financial intermediaries exist because they can reduce information and transaction costs that arise from an information asymmetry between borrowers and lenders. Financial intermediaries thus assist the efficient functioning of markets, and any factors that affect the amount of credit channeled through financial intermediaries can have significant macroeconomic effects.

Claus and Grimes (2003) clarify that there are two strands in the literature that formally explain the existence of financial intermediaries. The first strand emphasizes financial intermediaries' provision of liquidity. The second strand focuses on financial intermediaries' ability to transform the risk characteristics of assets. In both cases, financial intermediation can reduce the cost of channeling funds between borrowers and lenders, leading to a more efficient allocation of resources.

Andrieş (2009) identifies three key approaches to financial intermediation. The studies regarding informational asymmetry approach especially the problematic of relationships between bank and creditors, respectively bank and debtors. In the relationship between bank and borrower the main aspect analyzed is the function of the selection bank and the tracking of the granted loans, as well as the problematic of adverse selection and moral hazard. In the relationship between bank and depositors (creditors) a special attention is given to the factors that determine depositors to withdraw their money before due date.

The second approach for the financial intermediation is founded on the argument of transaction cost. This approach was developed by Benston and Smith (1976) and by Fama (1980). Unlike the first approach this one does not contradicts the theory of perfect markets. This approach is based on the differences between the technologies used by the participant. Thus intermediaries are perceived as being a coalition of individual creditors or debtors who exploit the scale economy at the level of transaction technologies. The notion of transaction cost does not comprise just the costs regarding the transfer costs for the amounts or of foreign exchange, but also those for research, evaluation and monitoring thus the role of financial intermediaries is to transform the characteristics (due date, liquidity, etc.) of assets, the so called qualitative transformation of financial assets, offering liquidity and opportunities for diversification of placements.

The third approach of financial intermediaries is based on the method of regulation of the monetary creation, of saving and financing of economy. This approach was developed by Guttentag and Lindsay (1968) and by Merton (1995). The method of regulation influences the liquidity and solvency of intermediaries. Diamond and Rajan (2000) show that the regulations regarding the capital of intermediaries influence their 'health', i.e. the ability for refinancing and the method for recovering debts. The argument for bank liquidity requirements considers the substitutability of cash requirements and capital requirements for prudential regulation. Calomiris, Heider and Hoerova, (2012) present a model that encompasses three motives for requiring bank cash holdings as part of a prudential regulatory framework. First, maintaining cash in advance saves on liquidation costs; second, cash held at the central bank is observable and verifiable. Measuring capital requires a valuation of the loan portfolio whilst measuring cash does not; and third, because the riskiness of cash is invariant to banker's decisions about whether to invest resources in risk management, greater cash holdings improve incentives to manage risk in the non-cash asset portfolio of risky assets held by the bank. Cash is a riskless asset and so, when banks hold cash, they commit to removing default risk from a portion of their portfolio. Because cash is both observable and riskless, and is available to repay senior claim-holders (depositors) in the event of a bank liquidation, the commitment to hold cash has important implications for bankers' incentives toward risk in the future. That commitment affects the way outsiders, who lack information about bank assets and bankers' behavior, view the risk management of the bank, which has immediate consequences for the bank's access to funding.

Bindseil (2000), defines the 'liquidity management' of a central bank as the framework, set of instruments and rules the central bank uses in steering the amount of bank reserves in order to control their price (i.e. short term interest rates) consistently with its ultimate goals (e.g. price stability). Banks normally hold cash as a mechanism for managing risk properly and they increase cash holdings in response to depositors' need to withdraw funds. In a model of multiple banks with diversifiable risk, the coalition of banks will commit to lend each other funds in response to bank-specific needs to accumulate cash;

in that equilibrium, cash requirements will be imposed by the group to prevent free riding on efficient interbank liquidity assistance, and cash requirements will be less than the cash holdings voluntarily held in the autarkic equilibrium. In a model with government deposit insurance, cash holdings will be set higher than under either the autarkic equilibrium or the coalition equilibrium; in the presence of deposit insurance, higher cash requirements are necessary to prevent moral hazard and ensure proper risk management. According to Myers and Rajan (1998), rather than viewing the regulation as ex post insurance, it should be viewed as providing ex ante incentives to reduce credit risk, which in turn enables banks to better access markets for low-risk, short-term debt. There is the need to regulate cash holdings, not rollover risk, and crucially, since cash holdings be continuously observable, it is important that the cash be held outside the bank (for example, at the central bank). If instead cash was held inside banks, holding more liquidity might actually lead to greater risk-taking.

Merton (1977) presented a discussion of cash reserve requirements with the Black-Scholes-Merton framework under which there are no transaction or information costs, all information that can be known is known equally to all parties, and all securities can be sold for their true value, without incurring any physical liquidation cost. Under the framework, the only special property of cash is its lack of risk. From the stand point of prudential regulation which seeks to avoid the default risk of banks, greater cash holdings and greater reliance on equity finance each reduce the default risk of the bank. Allocating more assets to cash reduces asset risk (defined as the standard deviation of asset returns), while increasing equity reduces default risk for any given level of asset risk. Cash and equity, therefore, are two alternative ways to reduce default risk. Given that the ultimate prudential goal of controlling default risk can be achieved through many different combinations of the two, there is no unique optimal combination of cash-to-asset ratio and equity-to-asset ratio.

Variation of the assumptions of the Black-Scholes-Merton framework show that the effects of cash and equity on default risk are not the same. Diamond and Dybvig (1983) showed that physical costs of liquidation make liquidity risk costly. This could motivate the holding of inventories of liquid assets. Calomiris and Kahn (1991) argue that some depositors receive signals about the risky portfolio outcome of the bank. Therefore, by holding reserves, banks insulate themselves against the liquidity risk of a small number of misinformed early withdrawals where the outcome is actually good. Without those reserves, banks offering demandable debt contracts (which are optimal in the Calomiris-Kahn model) would unnecessarily subject themselves to physical liquidation costs when they fail to meet depositors' requests for early withdrawal.

In response to the global financial crisis of 2007-2009, the Basel Committee proposed a new set of liquidity requirements to complement its revised framework of capital requirements. The primary and obvious motivation for the new interest in managing banks' liquidity is concern about liquidity risk defined as the risk that a solvent bank may find itself unable to manage its current flow of withdrawals from its own stock of liquidity and access to borrowed funds from others. Following the reliance of banks on central bank lending during the crisis, policy makers aim to reduce the dependence of banks on the lender of last resort, and thus encourage banks to limit or self-insure (through cash asset holdings) some of their liquidity risk.

Merton (1977) argues that the role of liquidity requirements should be conceived in a more nuanced way, not just as an insurance policy to deal with liquidity risk that can arise in a financial crisis, but as a prudential regulatory tool alongside capital requirements which, like capital requirements, has important consequences for limiting default risk and for encouraging good risk management. It may be that the primary benefits derived from liquidity requirements (like capital requirements) relate to improvements in bank risk profiles and incentives towards risk during normal times, and the consequences of those behaviors for reducing the probability of a liquidity crisis by making banking systems more resilient from a default risk perspective. Calomiris, et al

(2012) explains that there are two essential differences between capital on the liability side and cash on the asset side. They explain that the value of cash, unlike capital, is observable (verifiable) at all times whilst the value of capital, on the other hand, is not observable, but depends on the value of risky assets. Second, cash is a riskless asset, therefore, by holding cash, banks commit to removing default risk from a portion of their portfolio.

Because cash is both observable and riskless, the commitment to hold cash has important implications for bankers' incentives toward risk in the future. That commitment affects the way outsiders who lack information about bank assets and bankers' behavior view the risk management of the bank, which has important immediate implications for the bank's access to funding. Not only does cash mitigate the liquidity risks attendant to exogenous shocks (which are modeled using a simple Diamond-Dybvig 1983 cost of liquidation), it also mitigates endogenous (banker-chosen) default risk. In the model, costly state verification makes debt the optimal form of outside finance (Calomiris & Kahn, 1991). There is a conflict of interest between the banker and the depositors with respect to risk management; the banker suffers a private cost from managing risk, and does not always gain enough as the owner to offset that cost (Tirole, 2010). Greater cash holdings increase the marginal gain to the banker from managing risk, and thereby encourage greater risk management. Government deposit insurance is an alternative means for eliminating liquidity risk. The government also sets prudential regulations, including a cash reserve requirement, optimally to limit the moral-hazard consequences of government protection of deposits and bailouts of other bank claimants, which can be especially pronounced when risks to the banking system are correlated (Farhi & Tirole, 2009).

In most models of banking, equity is not a preferable means of controlling risk because due to the high costs of raising equity. The optimal contract between the banker and the funding sources is a debt contract. Debt contracts economize on the cost of ex post verification (Townsend, 1979; Diamond, 1984; Gale & Hellwig, 1985; Calomiris &

Kahn, 1991), and also can be beneficial by reducing the negative signaling of bank type (Myers & Majluf, 1984). Equity is assumed to be supplied by the banker, and not by outsiders because of its prohibitively high cost. Given the high costs of external finance via equity for example, in a Myers-Majluf model with adverse-selection costs of equity issuance cash holdings can provide a more cost-effective means of reducing default risk (Calomiris & Wilson, 2004).

In Tirole (2010), asymmetric information about risk management effort creates a conflict of interest between managers and debt holders. Biais, Heider and Hoerova (2010) show that, under asymmetric information, optimal hedging contracts may benefit from the use of cash margins, as a commitment device to manage risk properly. When high costs of raising equity (say, resulting from verification costs) favor high leverage, the agency problem of risk management is pronounced (Jensen & Meckling 1976; Myers, 1977). Because cash holdings limit the extent to which debt holders lose from high-risk strategies, more cash helps to better align managers' incentives with the interest of debt holders. That fact gives cash a special role for protecting taxpayers, not only from liquidity risks of crises, but from the moral-hazard problems of the abuse of government safety nets within a taxpayer-protected banking system. This theory authenticates research objective three: To establish the effect of Cash Reserve Requirement on the financial performance of banks in the Malawian banking sector.

2.2.5 Theories of Interest Rate

The theories of interest reviewed in this section include the Loanable Funds Theory, Keynes' Monetary Theory of Interest and the Classical Theory of Interest.

2.2.5.1 Loanable Funds Theory

The determination of the rate of interest has been a subject of much controversy among economists. Broadly speaking, there are two main contenders in the field. One is Keynes' liquidity preference and the other is the loanable funds theory. The Loanable

Funds Theory is associated with the names of Wicksell and several other Swedish economist, Knut Wicksell and the British economist D.H. Robertson. Later on, economists like Ohlin, Myrdal, Lindahl, Robertson and J. Viner have considerably contributed to this theory. According to the loanable-funds theory, the rate of interest is determined by the demand for and the supply of funds in the economy at that level at which the two (demand and supply) are equated. Thus, it is a standard demand-supply theory as applied to the market for loanable funds (credit), treating the rate of interest as the price (per unit time) of such funds.

The Loanable Funds Theory differs from the classical theory in the explanation of demand for loanable funds. According to this theory demand for loanable funds arises for the following three purposes viz: investment, hoarding and dissaving. The main source of demand for loanable funds is the demand for investment. Investment refers to the expenditure for the purchase of making of new capital goods including inventories. The price of obtaining such funds for the purpose of these investments depends on the rate of interest. An entrepreneur while deciding upon the investment is to compare the expected return from an investment with the rate of interest. If the rate of interest is low, the demand for loanable funds for investment purposes will be high and vice-versa. This shows that there is an inverse relationship between the demands for loanable funds for investment to the rate of interest. The demand for loanable funds is also made up by those people who want to hoard it as idle cash balances to satisfy their desire for liquidity. The demand for loanable funds for hoarding purpose is a decreasing function of the rate of interest. At low rate of interest demand for loanable funds for hoarding will be more and vice-versa. Dissaving's is opposite to an act of savings. This demand comes from the people at that time when they want to spend beyond their current income. Like hoarding it is also a decreasing function of interest rate.

The supply of loanable funds is derived from the basic four sources as savings, dishoarding, disinvestment and bank credit. Savings constitute the most important source of the supply of loanable funds. Savings is the difference between the income and expenditure. Since, income is assumed to remain unchanged, so the amount of savings varies with the rate of interest. Individuals as well as business firms will save more at a higher rate of interest and vice-versa. Dishoarding is another important source of the supply of loanable funds. Generally, individuals may dishoard money from the past hoardings at a higher rate of interest. Thus, at a higher interest rate, idle cash balances of the past become the active balances at present and become available for investment. If the rate of interest is low dishoarding would be negligible.

Disinvestment occurs when the existing stock of capital is allowed to wear out without being replaced by new capital equipment. Disinvestment will be high when the present interest rate provides better returns in comparison to present earnings. Thus, high rate of interest leads to higher disinvestment and so on. Banking system constitutes another source of the supply of loanable funds. The banks advance loans to the businessmen through the process of credit creation. The money created by the banks adds to the supply of loanable funds. According to loanable funds theory, equilibrium rate of interest is that which brings equality between the demand for and supply of loanable funds. In other words, equilibrium interest rate is determined at a point where the demand for loanable funds curve intersects the supply curve of loanable funds.

2.2.5.2 Keynes' Monetary Theory of Interest

Under the Keynes' Monetary Theory of Interest, the rate of interest is the reward for parting with liquidity for a specified period of time. According to the theory, the rate of interest is determined by the demand for and supply of money. Demand for money is referred to as the Liquidity Preference which means the desire of the public to hold cash. According to Keynes, there are three motives behind the desire of the public to hold liquid cash: the transaction motive, the precautionary motive, and the speculative

motive. The transactions motive relates to the demand for money or the need of cash for the current transactions of individual and business exchanges. Individuals hold cash in order to bridge the gap between the receipt of income and its expenditure. This is called the income motive. Business entities also need to hold ready cash in order to meet their current needs like payments for raw materials, transport, wages etc. This is called the business motive. Precautionary motive for holding money refers to the desire to hold cash balances for unforeseen contingencies. Individuals hold some cash to provide for illness, accidents, unemployment and other unforeseen contingencies. Similarly, business entities keep cash in reserve to tide over unfavourable conditions or to gain from unexpected deals. Keynes holds that the transaction and precautionary motives are relatively interest inelastic, but are highly income elastic. The speculative motive relates to the desire to hold one's resources in liquid form to take advantage of future changes in the rate of interest or bond prices. Bond prices and the rate of interest are inversely related to each other. If bond prices are expected to rise, i.e., the rate of interest is expected to fall, people will buy bonds to sell when the price later actually rises. If, however, bond prices are expected to fall, i.e., the rate of interest is expected to rise, people will sell bonds to avoid losses. According to Keynes, the higher the rate of interest, the lower the speculative demand for money, and lower the rate of interest, the higher the speculative demand for money.

The supply of money refers to the total quantity of money in the country. Though the supply of money is a function of the rate of interest to a certain degree, yet it is considered to be fixed by the monetary authorities. Hence the supply curve of money is taken as perfectly inelastic represented by a vertical straight line. Determination of the Rate of Interest is achieved at the level where the demand for money equals the supply of money. Based on the theory, if the supply of money is increased by the monetary authorities, but the liquidity preference curve remains the same, the rate of interest will fall. If the demand for money increases and the liquidity preference curve sifts upward, given the supply of money, the rate of interest will rise.

Keynes theory of interest has been criticized on several grounds. It has been pointed out that the rate of interest is not purely a monetary phenomenon. Real forces like productivity of capital and thriftiness or saving by the people also play an important role in the determination of the rate of interest. It is observed that liquidity preference is not the only factor governing the rate of interest. There are several other factors which influence the rate of interest by affecting the demand for and supply of investible funds. Additionally, the liquidity preference theory does not explain the existence of different rates of interest prevailing in the market at the same time. The theory ignores saving or waiting as a means or source of investible fund. To part with liquidity without there being any saving is meaningless.

2.2.5.3 Classical Theory of Interest

According to the classical theory, interest, in real terms, interest is the price paid for saving of capital. Technically, interest is the reward for the productive use of capital, which is equal to the marginal productivity of physical capital. On the demand side, the theory explains that demand for capital comes mostly from businesses. The theory argues that most of the capital is demanded by entrepreneurs who use it for productive purposes and who will not pay for its services at a rate higher than its productivity at the margin. Productivity goes on diminishing as more and more capital is employed in an industry. The borrower compares the prevailing rate of interest with the marginal productivity of capital i.e. the amount added to the total output by the use of the last installment of capital and stops where the productivity to be equal to the interest paid. When the interest rate falls, it becomes worthwhile to use capital in occupations of lower productivity.

On the supply side, based on the classical theory, the money which is to be used for purchasing capital goods is made available by those who save from their current income. By postponing consumption of a part of their income, they release resources for production. Savings involve the element of waiting for the future enjoyment of savings.

Households, however, prefer the present enjoyment of goods and services to the future enjoyment of them. Therefore, if households are to be persuaded to save money and to lend it to entrepreneurs, they must be offered some interest as reward. In other words, to make people overcome their time preference, inducement must be offered in the shape of interest. The more savings the people will do, the more consumption they will have to postpone, the greater must be the rate of interest they will ask to make such a postponement worthwhile. Thus, in order to induce people to save more, a higher rate of interest must be offered.

Basically, the theory holds the proposition based on the general equilibrium theory that the rate of interest is determined by the intersection of the demand for and supply of capital. Thus, an equilibrium rate of interest is determined at a point at which the demand for capital equals its supply. In the event of a change in the demand for investment and/or supply of savings, the equilibrium rate of interest will also change. The Classical theory is also called 'Real' theory of interest, because it is based on real forces of demand and supply side, i.e., productivity on the side of demand and thrift on the side of supply. It seeks to balance the productivity of capital goods on the one hand and saving or supply of capital goods on the other, interest on capital has to be paid in order partly to induce people to postpone consumption and partly to induce them to risk their savings in business.

Kaminsky and Reinhart, (2000) expounding on the theory, argue that demand for capital or funding comes from entrepreneurs who wish to invest in capital goods industries or other forms of investments or expenditure. In fact, demand for capital implies the demand for savings. According to Keynes (1936), investors agree to pay interest on those savings because the capital projects, which will be undertaken with the use of these funds, will be so productive that the returns on investment realized will be in excess of the cost of borrowing, which include interest. In short, capital is demanded because it is productive; it has the power to yield an income even after covering its cost, for example interest. The marginal productivity curve of capital, thus, determines the

demand curve for capital (Kaminsky & Reinhart, 2000). In support of the fore-going reasoning, Saunders and Schumacher (2000) explain that interest rate is a price, which pertains to a transaction or the transfer of a good or service between a buyer and a seller. According to Laeven and Majnoni (2005), interest rate spread is the difference between lending rate and deposit rate. This mark-up reflects the bank's interest profitability that covers the cost of intermediation which is the difference between the price of bank intermediation and the cost of its output. Coupled with available funds, banks normally extend credit to take advantage of any favourable lending interest rate. Some researchers have provided a link between credit extended by banks the cash reserve ratio. In this regard, Christian and Pascal (2012), Cargill and Mayer (2006), and Montoro and Moreno (2011) contended that, an increase in reserve requirement tends to decrease bank credit. On the other hand Friedman and Schwartz (1963) argue that, an increase in cash reserve requirements leads to increase a bank's credit creation ability.

While more credit easily translates into increasing investment and consumption and hence rising output, it could also be a fragile source of growth depending on, among other factors, the risk profile of the borrower (Kindleberger & Aliber, 2008). Rapid growth of credit to households' borrowing for mortgages as well as corporate borrowing for real estate development have a higher tendency to be followed by financial sector distress. Subsequently, the financial system becomes especially prone to adverse shocks such as asset price corrections, real exchange rate depreciations, or even mild economic downturns since banks' longer term financial soundness tends to deteriorate when credit is expanding.

The theories of interest reviewed in this section institute research objective number four: To establish the effect of lending interest rate on the financial performance of banks in the Malawian banking sector.

2.2.6 Theories of Economic Growth

Patrick (1966) explains that in the beginning stages of economic development, causation runs from economic development to financial sector development. This view has been labeled "demand-following" with the lack of financial institutions in underdeveloped countries viewed as an indication of the law of demand for their services. As economic growth occurs the direction of causality may re-verse and a "supply-leading" relationship develops, where the efficiency gains associated with the intermediation process help stimulate continued economic growth in the later stages of a county's economic growth cycle. There are three main types of economic growth theories i.e. the Classical, Neo-Classical, and Modern Day theories which are described in this section.

2.2.6.1 Classical Growth Theory

The first known generation of economic development models were formulated in the early years after the second World War. The theories focused on the utility of injections of capital to realize GDP growth rates. According to Todaro and Smith (2009), the two key models are Rostow's stages growth model and the Harrod–Domar model. Theorists of the 1950s and early 1960s viewed the process of development as a sequence of historical stages. This view was popularized by Rostow (Ingham 1995). In his study, Rostow (1960), analysed the historical pattern of the then developed countries and argued that the transition from underdevelopment to development had five stages: the traditional society, the preconditions for take-off, the take-off, the drive to maturity and the age of high mass consumption. The decisive stage is the take-off, through which developing countries are expected to transit from an underdeveloped to a developed state. Increasing rate of investments is considered to be necessary to induce per-capita growth.

According to Ghatak (2003), similar to Rostow's stages growth model, the Harrod–Domar model emphasized that the prime mover of the economy is investments. It is important that every country acquire capital to generate investments. If domestic savings were not sufficient, foreign savings would be mobilized. Although Rostow (1960), Harrod (1948) and Domar (1947) were right about the important role of investments that is most closely correlated with the economic growth rate, this is not the only condition for a country to develop. The key weakness of these models lies in their simplifying assumptions. A single production function is assumed for all countries (Adelman, 2000). Every economy is assumed to have the same necessary conditions and would transition through the same phasing, stage by stage. However, the development process is actually highly nonlinear (Chenery, 1960; Chenery & Syrquin, 1975). Countries may pursue distinct development paths (Morris & Adelman, 1988). Economies may miss stages, or become locked in one particular stage, or even regress depending on many other complementary factors such as managerial capacities, and the availability of skilled labour for a wide range of development projects (Todaro & Smith, 2009).

2.2.6.2 Neo-Classical Growth Theory

The neoclassical counter-revolution emerged in the 1980s. There are three approaches were used by economists: the free market approach, the new political economy approach and the market-friendly approach. The key argument in these approaches was that underdevelopment is not the result of the predatory activities of the developed countries and the international agencies but was rather caused by the domestic issues arising from heavy state intervention such as poor resource allocation, government-induced price distortions and corruption (Meier, 2000). As a response to public sector inefficiency, economists of the counter-revolution thinking, for example Bauer (1984), Lal (1983), Johnson (1971), and Little (1982), focused on promoting free markets, eliminating government-imposed distortions associated with protectionism, subsidies and public ownership.

The other school of the neoclassical free market is the traditional neoclassical growth theory which originated from the Harrod–Domar and Solow models. Expanding the Harrod–Domar formulation, Solow neoclassical growth model stresses the importance of three factors of output growth: increases in labour quantity and quality (through population growth and education), increases in capital (through savings and investments) and improvements in technology (Solow, 1956). In Solow's model, technological change is provided exogenously, therefore, with the same provided rate of technological progress, the growth rate would be expected to converge across countries. By opening up national markets, developing countries can draw additional domestic and foreign investments, thus increasing the rate of capital accumulation and returns on investments. Consequently, developing countries tend to converge to higher per-capita income levels (World Bank, 2000).

Neoclassical economists advocate free market as a way out for the developing countries. Accordingly, the central elements of the national development agenda include policies of liberalization, stabilization and privatization Foreign trade, private international investments and foreign aid flowing into the developing countries are expected to accelerate economic efficiency and economic growth of these countries. However, the growth rates per capita have diverged among countries (Azariadis and Drazen 1990). With weak and inadequate legal and regulatory framework, free market in developing countries fails to stimulate economic development (World Bank, 2000).

2.2.6.3 Endogenous Growth Theory

Endogenous growth or the new growth theory emerged in the 1990s to explain the poor performance of many less developed countries, which have implemented policies as prescribed in neoclassical theories. The new growth model notes that technological change has not been equal nor has it been exogenously transmitted in most developing countries (World Bank, 2000). New growth theorists (Romer, 1986; Lucas, 1988; Aghion & Howitt, 1992) link the technological change to the production of knowledge.

The new growth theory emphasizes that economic growth results from increasing returns to the use of knowledge rather than labour and capital. The theory argues that knowledge is different from other economic goods because of its possibility to grow boundlessly. Knowledge or innovation can be reused at zero additional cost. Investments in knowledge creation therefore can bring about sustained growth. Moreover, the knowledge could create the spillover benefits to other firms once they obtained the knowledge. Policy intervention is thus considered necessary to influence growth in the long term. The new growth models, therefore, promote the role of government and public policies in complementary investments in human capital formation and the encouragement of foreign private investments in knowledge-intensive industries such as computer software and telecommunications (Meier, 2000). Although the new growth theory helps to explain the divergence in growth rates across economies, it was criticized for overlooking the importance of social and institutional structures (Skott & Auerbach, 1995). Its limited applicability lies in its assumptions. For example, it treats the economy as a single firm that does not permit the crucial growth-generating reallocation of labour and capital within the economy during the process of structural change. Moreover, there are many other factors which provide the incentives for economic growth that developing countries lack such as poor infrastructure, inadequate institutional structures and imperfect capital and goods markets (Cornwall and Cornwall, 1994). Policy-makers will therefore need to pay careful attention to all of the factors that determine the changes and their impacts on the aggregate growth rate.

The theories of economic growth as discussed underpin research objective number five: To establish the moderating effect of economic growth on the relationship between micro and macro-economic factors which affect the financial performance of banks in Malawian banking sector.

2.3 Conceptual Framework

Ngugi, 2013 (citing Mugenda, 2008) defines conceptual framework as a concise description of the phenomenon under study accompanied by a graphical or visual depiction of the major variables of the study. According to Young (2009), conceptual framework is a diagrammatical representation that shows the relationship between dependent variable and independent variables.

The conceptual framework of the influence of the variables used in this study on bank profitability is given as Figure 2.1:

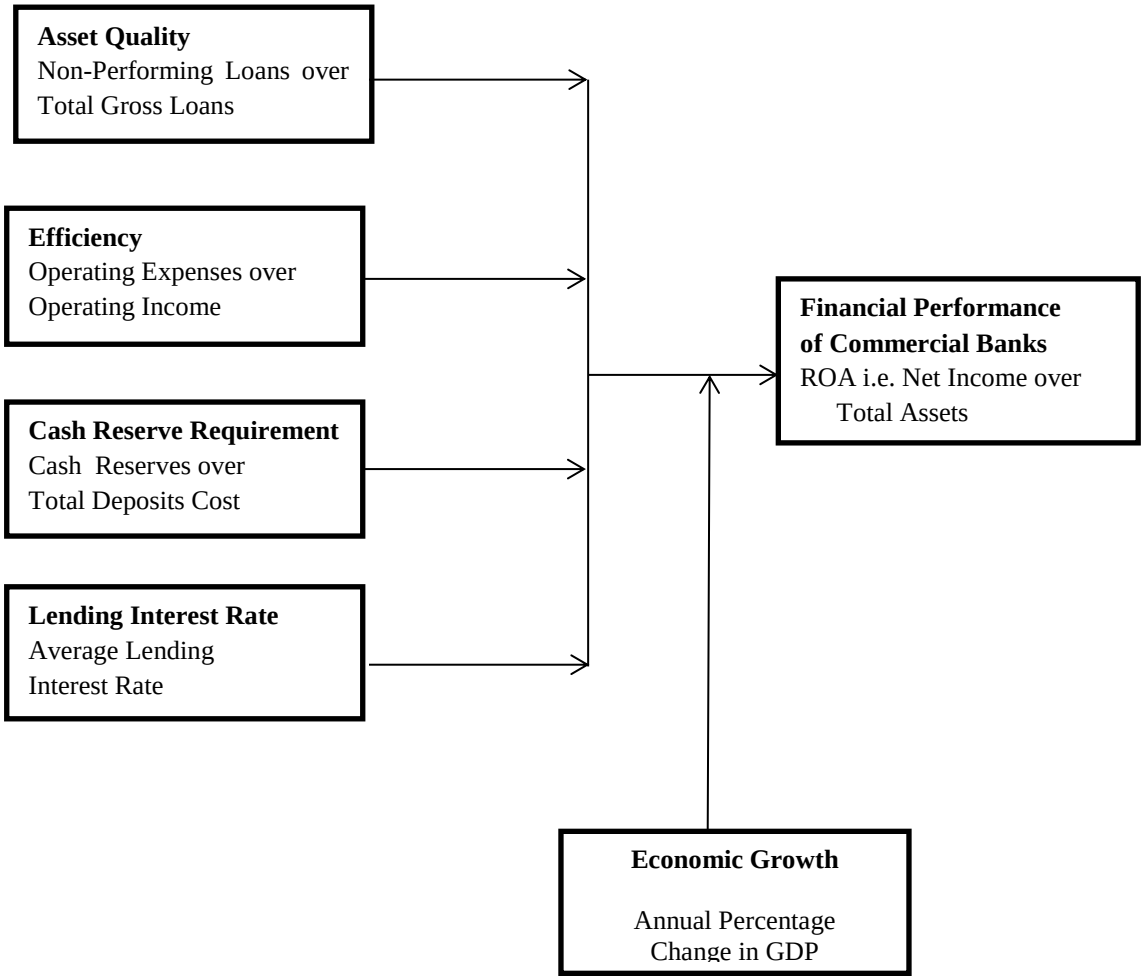


Figure 2.1: Conceptual Framework

2.3.1 Factors Influencing Bank Performance

Various studies have introduced useful variables in the profit function of commercial banks to highlight key factors that have an effect on bank profits, hence financial performance. The studies are not without ambiguity especially with regard to the measurement of the variables and the results reported thereafter. There is, however, a

general agreement that bank profitability is a function of internal and external factors. Koch (1995) observed that the performance differences between banks point to the variations in management philosophy as well as differences in the market served. Athanasoglou *et al*, (2006) concurred and argued that profitability is a function of internal factors that are mainly influenced by a bank's management decisions and policy objectives such as the level of liquidity, provisioning policy, capital adequacy, expense management and bank size, and the external factors related to industrial structural factors such as ownership, market concentration and stock market development and other macroeconomic factors including interest rate and economic growth. The majority of studies on bank profitability, undertaken both in African and elsewhere, including those undertaken by (Naceur (2003), Flamini *et al* (2009), Khalid (2012), Olweny and Sipho (2011), Olokoyo (2011), Malede (2012), Chepchirchir (2011), Ngugi (2013) Bourke (1989), Molyneux and Thornton (1992), Demirguc-Kunt and Huizinga (2000) used a similar vector of variables as well as linear models to estimate the impact of various factors that may have an effect on bank profitability.

To identify the relevant factors influencing commercial bank profitability in Malawi, this study concentrated on bank-specific factors based on the CAMEL framework, macro-economic factors and the financial regulatory environment. CAMEL is a widely used framework for evaluating bank performance. The Reserve Bank of Malawi also uses the same to evaluate the performance of commercial banks in Malawi. Several studies, including those of Elyor (2009) and Uzhegova (2010) have used CAMEL to examine factors affecting bank profitability with success. CAMEL stands for Capital adequacy, Asset quality, Management efficiency, Earnings performance and Liquidity. The system was developed by the US Federal Deposit Insurance Corporation (FDIC) for early identification of problems in banks' operations (Uzhegova, 2010). Though some alternative bank performance evaluation models have been proposed, the CAMEL framework is the most widely used model and it is recommended by Basle Committee on Bank Supervision and IMF (Baral, 2007). The macro-economic factors are important because they constitute the environment in which banks operate. The regulatory factors

are taken into account in this model because these can affect the operations of the banking industry and their profitability.

2.3.1 Asset Quality

Asset quality refers to the overall risk attached to the various assets held by an individual or institution and asset quality is an important aspect of the evaluation of a bank's performance (Yike and Chiu, 2011). This terminology is most commonly used by banks determine the proportion of their assets which are at financial risk and the level of allowance for potential losses they must make. The most common assets requiring a strict determination of asset quality are loans. According to Chisti (2012), asset quality is one of the most critical areas in determining the overall condition of the bank. The primary factor effecting overall asset quality is the quality of the loan portfolio and the credit administration program. Loans are usually the largest of the asset items and can also carry the greatest amount of potential risk to the bank's capital account. The main objective for measuring the asset quality is to ascertain the component of Non-Performing Assets (NPL) as a percentage of gross loans. NPLs refer to bad debts whose recovery is highly doubtful because they are not being serviced as required. In the banking system, the bad loan problems consist of a stock component (old debt) that is not performing and a flow component (new lending) that may become non-performing (Kanu & Isu, 2014). NPLs are a measure of asset quality of the portfolio of any bank (Beck, Jakubik & Piloiu, 2013).

NPLs pose credit risk to commercial banks i.e. the risk of loss resulting from default or failure of borrowers to meet their payments obligations. There a number of causes of NPLs. Kassim (2002) suggested that some causes of NPLs include poor management, lack of sound credit policy, inadequate credit analysis, errors in loan documentation, undue emphasis on profitability at the expense of loan quality, fraudulent practices, political instability, economic depression, abnormal competition, policy and regulatory

inconsistencies, weak real sector, political and social influence on bank operators, among others.

Similarly, during the financial crisis, sixty Indonesian banks collapsed and NPLs represented about seventy five percent of total loan portfolios (Cortavarria *et al*, 2000). Karim *et al* (2010), explain that in both Malaysia and Singapore, growth and innovation was constrained by banks which faced the accumulation of NPLs which eroded their capital. Krueger and Tornell (1999) attribute the credit crunch in Mexico after the 1995 crisis partially to poor asset quality. Kosmidou (2008) applied a linear regression model on Greece 23 commercial banks data for 1990 to 2002, using ROA and the ratio of loan loss reserve to gross loans to proxy profitability and asset quality respectively. The results showed a negative significant impact of asset quality to bank profitability. This was in line with the theory that increased exposure to credit risk is normally associated with decreased firm profitability. Indicating that banks would improve their financial performance by improving screening and monitoring of credit risk.

Based on the Reserve Bank of Malawi Directive referenced as NO.DO1-06/ASCL (RBM Directive, 2006), loans extended by the commercial banks in Malawi are classified as standard (or acceptable), special mention, substandard, doubtful and loss. An asset is classified as Standard or Acceptable if it is current, that is, there are no outstanding arrears; the obligor is complying, and is expected to continue to comply, with all terms of the loan contract; and there is no reason to believe that the licensed institution is now, or will be, subject to risk of loss.

An asset is classified as Special Mention if potential weaknesses exist in the obligor's financial position and/or the collateral pledged. An asset should be classified as Substandard if it has one or more well-defined weaknesses that make the full collection of the principal and interest questionable, especially when the obligor's financial condition, including net worth and/or repayment capacity, is unfavorable and is deteriorating; the pledged collateral, if any, is insufficient or is deteriorating; and/or if an

actual breach of contract has occurred. At a minimum, credits that are 90 days or more past-due shall be classified as Substandard. An asset is classified as Doubtful when there exists weaknesses which make collection or repayment in full highly questionable and improbable based upon currently existing circumstances, conditions, and the "estimated recoverable amount" of the pledged collateral, if any. At a minimum, credits that are 180 days or more past-due shall be classified as Doubtful. At the time of classification, the asset is deemed Loss if it is uncollectible and of such little value that it should not be included on the books of account and financial statements of the licensed institution. An earlier prudential guideline, directive referenced as NO.DO1-93/AQ (RBM, 1993) clarifies that all loans classified as substandard, doubtful and loss are categorized as NPLs.

According to Balasubramaniam (2013) there are a number of implications that NPLs entail on the operations of banks. First, NPLs means booking of money in terms of bad asset, which occurred due to wrong choice of client. Because of the money getting blocked the resources of bank decreases not only by the amount of NPLs but NPLs result in opportunity cost of investing in some return-earning investment. In this regard, NPLs do not only affect current profit but also future stream of profit, which may lead to loss of some long-term beneficial opportunity. Second, NPLs imply blocked income which leads to lack of enough cash at hand. Banks therefore are forced to borrow money and may results in additional cost to the bank. Third, time and efforts of management is another indirect cost which bank has to bear due to poor asset quality. The time and efforts of management in handling NPLs would be applied to some fruitful activities, which would have given good returns. Most banks have special employees to deal and handle NPLs, which is additional cost to the bank. Fourth, NPLs entail a reputational risk to the bank. If a bank is facing problem of NPLs, then it adversely affects its credit rating. It will lose its goodwill and brand image and credit which have negative impact to the people and entities place their money in the banks. Somoye, (2010) adds that NPLs also adversely affects investors' confidence in the banking system, thereby discouraging them from making reasonable investments. According to Mohd, Karim,

Sok-Gee and Sallahundin, (2010), the management of NPLs is often associated with high operational costs leading to dwindling capital growths in the affected banks.

Chisti (2012) explains that the quality of assets is an important parameter to gauge the strength of the bank. The main aim behind measuring the Asset Quality is to ascertain the component of non-performing assets (NPL) as a percentage of Total Assets. These NPLs should be considered against not just Total Assets but also against the Advances because NPLs primarily arise from advances. This indicates what type of advances the bank has made to generate interest income. Thus, Asset Quality indicates the type of the debtors of the bank. The ratios suggested to measure Asset Quality under CAMEL model includes the following:

Gross NPLs to Gross Advances: This is a measure of the quality of assets in a situation, where the management has not provided for loss on NPLs. The Gross NPLs are measured as a percentage of Gross Advances. Lower ratio indicates better quality of advances. This is measured as Gross NPLs to Gross Advances = Gross NPLs / Gross Advances. This study used this ratio to measure Asset Quality. Net NPLs to Net Advances: This ratio is the most standard measure of Asset Quality. The ratio measures Net NPLs as a percentage of Net Advances. Net NPLs are Gross NPLs net of provisions on NPLs and interest in suspense account. This ratio is measured as Net NPAs to Net Advances = Net NPAs / Net Advances.

Total Investments to Total Assets: This ratio indicates the aggressiveness of banks in investing rather than lending. It is the ratio of Total Investments to Total Assets. It highlights alternative avenues for parking funds. Higher ratio means lack of credit take-off in economy and much proportion of total assets is utilized in investments that should not be the case with banks because the primary business of the banks is to lend. This ratio indicates how much proportion or percentage of total assets is in the form of investments. This is measured as Total Investments to Total Assets Ratio = Total Investments/Total Assets. Net NPLs to Total Assets: This ratio indicates the efficiency

of the bank in assessing credit risk and to an extent recovering the debts. This ratio is arrived at by dividing the Net NPLs by Total Assets. Net NPAs are calculated by adjusting provisions against Gross NPLs. Lower ratio indicates the better performance of banks.

2.3.2 Cost Efficiency

Cost Efficiency is measured by dividing operating expenses by operating income. In this regard, cost efficiency is considered as a measure of management performance. Ahmad, and Bashir (2013) argue that low efficiency (high inefficiency) is a signal of bad performance of senior management in running day-to-day activities and loan portfolio. Louzis *et al*., (2010), Podpiera and Weill (2008) refer to efficiency as the comparison of what is actually produced or performed with what can be achieved with the same consumption of resources (money, time, labor, among others). Kraft and Tirtiroglu (2006) define efficiency as the state or quality of being efficient i.e. competency in performance. Accomplishment of, or ability to, accomplish a job with a minimum expenditure of time and effort: According to Rangan, Grabowski, Aly and Pasurka (2002), efficiency in general describes the extent to which time or effort is well used for the intended task or purpose. Louzis *et al* (2011) further submit that if a bank has 'bad' management with poor skills in credit scoring, appraisal of pledged collaterals and monitoring borrowers, it is likely to have NPLs. Banks which devote less effort to ensure higher loan quality will be more cost-efficient, however, there may be an increasing level of NPLs in the long run (Berger & DeYoung, 1997). If a management team does not monitor and control operating expenses, it reflects in inefficiency almost immediately and will lead to the growth in NPLs. In the same line of reasoning, Athanasoglou *et al* (2006) argue that efficient cost (expenses) management is an important determinant of bank profitability. It is usually measured by the ratio of operational costs to assets (or income) because only operating expenses can be viewed as the outcome of bank management. This reasoning suggests negative relationship

because improved management of operating expenses (lower cost to asset ratio) improves efficiency and eventually leads to higher profits.

According to Vu and Turnell (2012), in a standard cost function, banks take the amount of outputs and input prices as given, and minimize costs by adjusting the amount of inputs and output prices. In a standard profit function, it is assumed that banking markets are perfectly competitive (i.e. banks are price takers), thus banks maximize profits by adjusting the quantities of inputs and outputs. However, clearly perfect competition rarely pertains in reality. In practice, banks do have some degree of market power, and so it is more appropriate to consider the case of imperfect competition, in which banks are only price takers in the input market, but have some market power in the output market. Correspondingly, an alternative profit function is employed, in which banks take as given output quantities and input prices, and optimize profits by changing input quantities and output prices.

Unlike other industries, the banking industry is a service one, and so the definition of bank inputs and outputs is more complex. In the banking literature, there are a number of ways to define inputs and outputs of banks. The intermediation approach assumes that banks collect deposits to transform them, using labor and capital, into loans and other assets. Hence, banks are considered financial intermediaries connecting savers and investors. The production approach views banks as producers, using labor and capital to produce deposits and loans in terms of the number of accounts. The value added approach asserts that all liabilities and assets of banks have some output characteristics, rather than categorizing them as either inputs or outputs only. In empirical research, the intermediation approach seems to be preferred since it better represents the role of banking in providing financial services (Berger & Mester, 1997; Koetter, 2005).

Poor expenses management is the main contributors to poor profitability. In the literature on bank performance, operational expense efficiency is usually used to assess managerial efficiency in banks. Beck and Fuchs (2004) examined the various factors that contribute to high interests spread in Kenyan banks. Overheads were found to be one of the most important components of the high interests rate spreads. An analysis of the overheads showed that they were driven by staff wage costs which were comparatively higher than other banks in the Sub-Saharan African countries. Although the relationship between expenditure and profits appears straightforward, implying that higher expenses mean lower profits and the opposite, this may not always be the case. The reason is that higher amounts of expenses may be associated with higher volume of banking activities and therefore higher revenues. In relatively uncompetitive markets where banks enjoy market power, costs are passed on to customers; hence there would be a positive correlation between overheads costs and profitability (Flamini *et al*, 2009). Naceur (2003) found a positive and significant impact of overheads costs to profitability indicating that such cost are passed on to depositors and lenders in terms of lower deposit rates or higher lending rates.

2.3.3 Cash Reserve Requirement

According to Dornbusch and Fischer (1990), Cash Reserve Requirement (CRR) is the specified minimum fraction of the total deposits of customers, which commercial banks have to hold as reserves either in cash or as deposits with the central bank. CRR is set according to the guidelines of the central bank of a country and is computed by dividing cash reserves by total deposits. The amount specified as the CRR is held in cash and cash equivalents. The objective of CRR is to ensure that banks do not run out of cash to meet the payment demands of their depositors. Hussain (2012) explains that CRR may be considered as a tax (reserve tax) on banks' profitability as banks have to maintain a portion of their deposits with the central bank unremunerated. Similar view is expressed by Hichem, Casu and Fazeer (2005) who argue that cash reserve have an opportunity cost which can be interpreted as an implicit tax on the banks. However, banks are

perceived to pass this on either to depositors in the form of lower return or borrowers in the form of higher lending rates. Olusanya *et al* (2012), explains the link between CRR and loans and advances (credit) and argues that there is a direct or positive relationship between commercial bank credit and the cash reserve requirement ratio. The implication is that as commercial bank credit increases, CRR ratio also increases overtime. While increased credit availability often spurs economic growth, rapid credit growth also could result in non-performing loans and raise concerns about prudential risks.

Prudential risks, defined as threats to financial stability stemming from the financial position of banks, can emerge both at the micro and macro levels. At the micro level, rapid expansion of loan portfolios may lead to capacity constraints in respect to management of risks, gathering of information, or assessment of quality of applications). This results in new loans being originated without adequate screening and risk management (Berger & Udell, 2004). At the macro level, expansion may involve strategic competition concerns whereby banks take on more risks or financial institutions become more interconnected and the system, as a whole, becomes riskier. Or, it may involve reliance on the same asset classes and marginal loans, i.e., loans made to borrowers that are riskier and potentially more exposed to shocks that may be correlated across borrowers. For instance, in the run-up to the recent global financial crisis, several studies identify the mortgage credit boom in the U.S. as one of the culprits because it increased the exposure of the financial system to a single shock, that is, a fall in house prices (see, for instance, Dell'Ariccia, Igan, & Laeven, 2008). Hence, rapid credit growth episodes can decrease loan quality, increase systemic risk, and deteriorate bank performance.

There is a world-wide debate on the significance of CRR. Some researchers are of the view that such requirements promote disintermediation of commercial bank credit. These include Montoro and Moreno (2011) who contended that an increase in reserve requirements tends to decrease bank credit. Banks can partly compensate by increasing their net interest margins through adjustments in deposit or lending rates. Higher reserve

requirements can tighten domestic financing conditions without attracting more capital inflows if they induce banks to raise lending rates while keeping deposit rates stable or lowering them.

On the other hand, another group of researchers, including Friedman and Schwartz (1963) claim that, a raise in commercial bank cash required reserves tends to increase the banks' credit creation ability. In support of this view, Olusanya, Oluwatosin, & Chukwuemeka (2012) also argue that, required reserve has positive impact on commercial bank loans and advances in that banks raise credit when CRR increases. In an alternative argument, Meltzer (2003) contends that a rise in reserve requirements would have little or no impact on bank's capacity to create loans. Similarly, Chandler (1971) also supports by indicating that an increment in reserve requirements does not encourage banks to hold back their lending or sell securities or cause interest rates to rise. Wilcox (2012) found that changes in reserve requirements had only small and statistically insignificant impacts on bank loans and investments. These various approaches have been used to examine the effects of cash required reserve on a broad array of banks credit. However, the evidence is not uniform and consistent in indicating whether CRR affects commercial banks' credits or not.

2.3.4 Lending Interest Rate

According to Dornbush and Fisher (1990), Lending Interest Rate represents the payment per dollar per year that someone who borrows from a bank or any financial institution pays. It is therefore a cost of borrowing. Flannery (1980) explains that an increase in lending rate raises the amount of income that a commercial bank can earn on its loan portfolio and therefore increases the return on its assets. Georgievska, Kabashi, Trajkovsca, Mitreska and Vaskov (2011) argue that banks can increase lending rate as a tool for tightening of banks' credit policy. This is a sign of a deteriorating economic situation characterized by contraction in the domestic economy.

Lending interest rates are the centerpiece of commercial banks' core business of financial intermediation. They constitute the key price in the financial sector, the main transmission mechanism of monetary policy, the main vehicle for matching supply and demand and, normally, the key determinant of profitability (Davies and Vaught, 2012). The interest rate level reflects banks' perception of country and creditor risks, market liquidity conditions, and the depth of financial markets. Chodechai (2004) argues that banks cannot charge lending interest rates that are too low because the revenue from the interest income will not be enough to cover their operating costs and charging too high lending interest loan rates may also create an adverse selection situation and moral hazard problems for the borrowers.

According to Georgievska *et al* (2011), banks normally use lending interest rate to ensure that they maximize their returns especially in times of deteriorating economic activity. Saunders (2002) argues that lending interest rate is a price, and like any other price, it relates to a transaction or the transfer of a good or service between a buyer and a seller. Hichem *et al*, (2005), explain interest rate spread as the ratio of net interest income (banks interest income – banks interest expenses) to total assets. This mark-up reflects the bank's interest profitability that covers the cost of intermediation which is the difference between the price of bank intermediation and the cost of its output. Saunders and Schumacher, (2000) reason that from a welfare perspective, low lending rates, which ordinarily result from low margins, are a sign of a more efficient banking system with lower intermediation cost and lower indirect costs from government-imposed regulations (e.g. explicit and implicit taxes such as capital requirements). On the other hand, high lending rates could imply that the cost of using the financial system may become exorbitant for certain borrowers. In addition, high interest rate margins can have major implications for financial intermediation as they can increase the cost of capital, which in turn limits the financial resources available to potential borrowers, thereby reducing the volume of investment opportunities and/or limiting them to sub-optimal level (Winston & Roland, 2002).

Studies carried out by Hanweck and Kilcollin (1984) for small banks in the USA during the 1976-1984 period show that banks profitability is realized in times of rising interest rates due to the increase in the spread between the saving and the borrowing rates. It was observed that falling interest rates during recession lead to slower growth in loans and increase in loan loss. It is difficult for banks to maintain profits as market rate decline. Further studies by Demirguc-Kunt and Huizinga (1999) and Staikouras and Wood (2004) both showed a positive relationship between interest rates and bank profitability.

2.3.5 Economic Growth

Siraj and Pillai (2013) explain that economic growth, as measured by the gross domestic product (GDP) growth, is considered as a significant variable which affects the performance of commercial banks in an economy. However, the nature of impact of economic growth on the performance of the banking sector has a moderating effect in the relationship between other performance indicators. Hichem *et al*, (2005) explains that the macroeconomic environment influences the behaviour of bank performance through margins. An adverse macroeconomic condition may cause deterioration in banks' performance by raising the volume of NPLs in the economy. Therefore, a positive relationship between the general economic activity measured by the real growth (GDP) and bank performance as debt-servicing capacity of borrowers may weaken as a result of a slowdown of economic activity. In a typical example, two countries with similar banking structure are likely to generate different levels of NPLs due to the economic conditions prevailing in each of the countries. Thus, economic variables exercise significant influence on the relationship between banking sector variables, particularly the level of advances and NPL. Generally, a growth in GDP is expected to influence the advances of banks which in turn affect the level of NPLs.

There is significant empirical evidence of a negative relationship between the growth in real GDP and NPLs (Salas & Suarina, 2002; Rajan & Dhal, 2003; Fofack, 2005). The explanation provided by the literature for this relationship is that strong positive growth in real GDP usually translates into more income which improves the debt servicing capacity of borrower which in turn contributes to lower non-performing loans. Conversely, when there is a slowdown in the economy (low or negative GDP growth) the level of NPLs should increase, thereby resulting in a deterioration of asset quality. Gizycki (2001), Lowe and Rohling (1993) and Kaufman (1998) support the foregoing view and indicate that bank performance is correlated with the business cycle. Calomiris, Orphanides and Sharpe (1997) outline three factors that exacerbate non-financial firms' sensitivity to economic growth cycles in aggregate activity: information asymmetries between borrowers and financiers; the advantages of investing during periods of rapid growth; and firms' tendency towards excessive optimism. These factors suggest that firms' performance (and banks' credit risk, in turn) will depend upon both the level and the rate of growth of aggregate activity. Firstly, firms that rely on debt to expand their operations aggressively during periods of rapid economic growth are likely to be the least creditworthy when recession strikes. In the presence of information asymmetries between the managers and financiers of firms, debt contracts can go some way towards aligning managers' incentives with financiers' interests. This has the potential to reduce moral-hazard driven behaviour by firm management, adverse selection and monitoring costs. The firms that rely on debt (rather than equity) finance, are therefore, likely to be those for which asymmetric information problems are most pronounced. These firms are likely to be most susceptible to slowdowns in economic growth.

Secondly, theoretical models of optimal investment strategies suggest that there are advantages in expanding rapidly. For example, Murphy, Shleifer and Vishny (1989) posit that growth in one sector of the economy has spillover effects by increasing demand for other sectors' output. Such considerations emphasize the advantages of investing during periods of rapid economic growth. Thirdly, Calomiris *et al* (1997)

argue that firms may not properly anticipate how aggregate economic circumstances may affect the value and liquidity of their assets. As a result, firms may have a tendency to be excessively optimistic regarding their ability to avoid financial distress and therefore, take on excessive leverage during periods of economic expansion. This view is in line with Minsky (1995) who characterizes economic cycles as being driven by euphoric over-expansion of credit. Over a run of good times (characterised by minor cycles in economic activity) firms and households' balance sheets change so that ever-larger proportions of their gross cash flows are committed to debt service. That is, preferences for leverage follow a cyclical pattern. These three arguments suggest that, in the short term, stronger output growth will reduce banks' impaired assets, although over longer horizons this relationship may work in the opposite direction, with an acceleration in output growth leading to higher impaired assets.

2.3.6 Financial Performance

Rose and Hudgins, (2008) define the performance of financial firms as the ability of meeting the needs of stockholders and stakeholders. The success or failure of institutions is usually uncovered through a review of their financial statements. The most important dimensions of performance are profitability and risk. An understanding into the concept of 'profit' can be traced to Hawley (1900), who explained that profit is the residual income which the entrepreneur receives for assuming business risks. Risk-taking is considered as the main function of the entrepreneur and profit is an excess of payment above the actuarial value of risk. Hence the reward for risk taking must be higher than the actual value of risk. The same idea was developed and clarified by Clark (1908) who argued that profit may be perceived as the difference between the price and the cost of production of a commodity. Clark's emphasis, however, was that profit was the result of dynamic change in respect to increases in population and capital, improvement in methods of production and the multiplying wants of consumers. Knight (1921) developed the concept further and regarded profit as the reward of bearing non-insurable risks and uncertainties. To achieve profitability, the income generated during a given

period should exceed the expenses incurred over the same period of time with the objective of generating income. A typical firm's profit was explained by Ayanda *et al* (2013) who borrowed from competitive market model and defined profit model as total revenue (or total sales) of the firm less the costs incurred by the firm.

Banks are businesses organized to maximize the value of the shareholders' wealth invested in the firm. Such an objective requires looking for new opportunities for revenue growth, greater efficiency, and more effective planning and control. A related definition is given by Nzongang and Atemnkeng (2006) who refers to performance as an analysis of a company's performance as compared to goals and objectives. Generally, financial performance of commercial banks is achieved through an assessment of the difference between operating income and expenses. Operating income is the income that comes from a bank's ongoing operations. Most of a bank's operating income is generated by interest on loans. Operating expenses are the expenses incurred in conducting the bank's ongoing operations, including interest payments that it must make on its liabilities, particularly on deposits. Just as interest income varies with the level of interest rates, so do interest expenses. Non-interest expenses include the costs of running a banking business: salaries for tellers and officers, rent on bank buildings, purchases of equipment such as desks and vaults, and servicing costs of equipment such as computers, etc. Chisti (2012) explains that the quality of earnings is very important criterion which determines the ability of a bank to earn consistently. It basically determines the profitability of the banks. It also explains the sustainability and growth in earnings in the future. This parameter has gained importance in the light of the argument that much of a bank's income is earned through activities like investments, treasury operations, and corporate advisory services and so on.

A common measure of performance of commercial banks is the return on assets (ROA). The desirable aspects of ROA are that it incorporates the broadest aspect of the banking business as it mirrors the ability of bank management to generate profits from the available bank asset. Moreover, it is considered to be a core performance indicator used

in the majority of empirical studies (Athanasoglou *et al*, 2006). The health of a bank is not reflected by the size of its balance sheet but by the return on its assets; thus earning power is an important indicator of bank performance (Kanu & Isu, 2014). Although the ROA provides a meaningful measure of the performance of a bank, it suffers from one major drawback: It does not adjust for the bank's size, thus making it hard to compare how well one bank is doing relative to another. A basic measure of bank profitability that corrects for the size of the bank is the return on assets (ROA), which divides the net income of the bank by the amount of its assets. ROA is a useful measure of how well a bank manager is doing on the job because it indicates how well a bank's assets are being used to generate profits. ROA represents the income earned on each unit of asset usually expressed as percentage. ROA is computed by dividing net income by total assets of the bank.

The shortcoming with ROA is that it does not take into account the off-balance sheet items (for instance, assets acquired through a lease). In this way, ROA understates the value of assets. This can eventually create a positive bias where ROA is overstated in the evaluation of bank performance. Be that as it may, some studies including those by Golin (2001) and Rose *et al.,* (2005) have submitted that ROA is one of the most important measures of profitability in banking literature. It is further observed that the studies of Haron (2004) who studied determinants of Islamic bank profitability, Hassan *et al.,* (2003), Bashir (2003), Demirguc-Kunt *et al*., (1999) who carried out a study on the determinants of commercial bank interest margins and Naceur (2003) who studied the determinants of the profitability of the Tunisian banking industry have all adopted ROA as a measure of profitability. As an alternative measure of profitability the Return on Equity (ROE) is computed by dividing net income by equity. ROE measures the income earned on each unit of shareholders capital. The shortfall of this measure is that banks with high financial leverage tend to generate a higher ratio. Banks with high financial leverage may be associated with a higher degree of risk although these banks may register high ROE. Thus ROE may sometimes fall short in exposing the true financial health of banks. Another challenge with using ROE is that it is affected by

regulation. Additional ratios suggested to measure earnings and bank profitability under CAMEL model are:

Spread to Total Assets: This is the difference between the total income and the total expenses of a bank gives taxable income. However, considering the intermediation function, it is the Net Interest Income (NII = Interest earned – Interest expended) that is more crucial for banks. For the long term sustenance of the bank, this should be positive. The deregulated interest rate environment, the pressure built by competition for attracting deposits, liberalization and other banking norms & regulations affect the interest rates and thereby Net Interest Income (NII). This ratio shows the ability of a bank to keep the interest on deposits low and interest on advances high. It is an important measure of a bank's core income (income from lending operations). A higher spread indicates the better earnings, given the total assets. This ratio is calculated as: Spread to Total Assets = Spread / Total Assets (Where Spread = Interest earned - Interest expended).

Earnings per Share: This ratio measures the profitability of the firm on per Equity Share basis. This ratio measures the earnings available to an equity shareholder on a per share basis. Interest Income to Total Income: Interest Income is a basic source of revenue for banks. The Interest Income to Total Income Ratio indicates the ability of the bank in generating income from its lending activities. In other words, this ratio measures the income from lending operations as a percentage of the total income generated by bank in a year. Interest Income includes Interest on Advances, Discount on Bills, Income from Investments, Interest on Deposits with RBI and Other Inter-Bank Funds. Interest Income to Total Income = Interest Income/Total Income.

Non-Interest Income to Total Income: This ratio measures the income from operations other than lending as a percentage of Total Income. Non-Interest Income is the Income earned by the banks excluding income on advances and deposits with RBI. Non-Interest Income includes Commission, Exchange, Brokerage, Profit on Redemption & Sale of

Investment (Less loss on Investments), Profit on Sale of Land, Buildings & Other Assets, Profit on Exchange Transactions (Less Loss on Exchange Transactions), Income earned by way of Dividends etc. from Subsidiaries, Companies and/or Joint Ventures abroad/in India and Miscellaneous Income. Profit Margin Ratio: The profit margin of a company determines its ability to withstand competition and adverse conditions like rising costs, falling prices or declining sales in future. This ratio measures the percentage of net profit to total income and thus is a measure of efficiency of the company. PMR = Net Profit / Total Income.

Burden to Total Assets: The Burden analysis reveals as to what extent the bank is in a position to cover the non-interest expenditure through non-interest income. If a bank is able to cover the non-interest expenses with the help of non-interest income the bank is said to have fine performance and as such have no burden on interest income on account of non-interest expenditure. Burden denotes a bank's ability to earn from non-conventional sources. In a liberalized environment this ratio assumes greater significance. With the building of pressure on interest income, banks are now trying to increase their non-fund based income also.Burden to Total Assets = Burden / Total Assets. (Where Burden = Non-Interest Expenses – Non-Interest Income).

2.4 Empirical Literature Review

This section reviews empirical studies which have been classified into five broad categories. A review of studies which were undertaken on the banking sector in Malawi is provided first. Then the section reviews studies which analyzed effect of Asset Quality on bank performance, followed by studies which researched the relationship of Cost Efficiency on bank performance. Thereafter, a review is undertaken of the studies which investigated the effect of Cash Reserve Requirements on bank performance. Then, an examination was done regarding studies which investigated the effect of Lending Interest Rate on profitability. Finally, the section reviews studies which looked into relationship of Economic Growth and bank performance.

2.4.1 Studies on the Malawian Banking Sector

There are several studies which have been carried out on the Malawian banking sector. Chirwa (1999) carried out a study using cointegration and error correction model on banks in Malawi over the period 1970-94. The results of the study found that there exists a long-run relationship between profitability and market structure. In another study, Chirwa (2001), using the market structure–performance hypothesis, found a significant relationship between monopoly power and commercial bank profitability, but rejected the efficient market hypothesis. Thus, although interest rates were under control for most of the study period, other bank services that generate income for commercial banks were subject to monopoly power abuse.

Kanyoma (2006) studied the financial performance of privatized banks in Malawi and used the Feasible Generalized Least Squares (FGLS) method. The results of the study were that there is no significant evidence that bank privatization in Malawi is associated with high profitability, high output, improved net income efficiency, low deposits-assets ratio and low employment levels. The study concluded that bank privatization in Malawi is associated with low profitability and that other factors which include state ownership and market share, significantly impact on bank profitability. In yet another study, Mlachila and Chirwa, (2002), on the financial reforms and interest rate spreads in the commercial banking system in Malawi, found that spreads increased significantly following liberalization and this was attributable to high monopoly power, high reserve requirements, high central bank discount rate and high inflation. On his part, Lipunga (2014) carried out a study whose aim was to examine the risk disclosure level in annual reports of the Malawian commercial banks and the related influence on profitability. Key finding of the study was that profitability does not influence the level of risk disclosure.

In another study, Lipunga (2014) examined the determinants of profitability of listed commercial banks in Malawi focusing on the period 2009-2012 using internal-based and

external (market)-based profitability measurements. Return on Assets (ROA) and Earnings Yield (EY) are used as proxies of internal and external profitability respectively. The study revealed that bank size, liquidity and management efficiency have a statistically significant impact on ROA but capital adequacy has an insignificant effect. The results further suggested that earnings yield is significantly influenced by bank size, capital adequacy and management efficiency, whereas liquidity is found to have insignificant influence on earnings yield. Kaluba and Chirwa (2015) carried out an investigation into competition and banking industry regulation in Malawi. The study's central hypothesis was that high market concentration in the banking industry can facilitate collusive pricing outcomes with adverse impacts on the low-income and on important but low-return segments of the economy. Using suitably defined performance variables, the study used a model incorporating bank-specific, industry-specific and macroeconomic determinants of conduct and performance applied on monthly observations from January 2005 to March 2014 from a representative panel of six of the eleven licensed banks. The study found that while a high and rising bank rate may have moderated margins, the high margins reduced competitive pressure while being sustained by market leadership, lending to government, capital adequacy, bank efficiency and favourably-intervened foreign exchange market.

2.4.2 Asset Quality and Bank Performance

Khalid (2012) carried out a study on the impact of asset quality on profitability of private banks in India. In the study, Return on Assets (ROA) and profitability ratios were used as proxies for bank profitability for the period 2006-07 to 2010-11. Operating performance was estimated by financial ratios. The study also used multiple regression model. The results indicated that asset quality had a positive significant effect on financial performance of banks. Olweny and Shipho, (2011), studied the effects of banking sectoral factors on the profitability of commercial banks in Kenya. They evaluated the effects of the following bank-specific factors: capital adequacy, asset quality, liquidity, operational cost efficiency and income diversification, on the

profitability of commercial banks in Kenya. The results were that all the bank specific factors, including assets quality, had a statistically significant impact on profitability. This outcome showed that as asset quality improved i.e. a decline in non-performing loan ratio, there was an increase in bank performance. In East Africa, Qin and Pastory (2012) carried out a study with the objective of examining the determinants of commercial banks' performance in Tanzania. The study covered a ten-year period from 2000 to 2009 and studied the National Microfinance Bank (NMB), National Bank of Commerce (NBC) and CRDB Bank as the case study banks. The study used Analysis of Variance (ANOVA) test. The study also estimated a regression model to evaluate the effects of capital adequacy, liquidity and asset quality on the profitability of commercial banks. The findings revealed that liquidity and asset quality had positive impact, whilst NPLs had a negative influence on profitability.

In a related study, Flamini, McDonald and Schumacher, (2009) investigated the determinants of commercial bank profitability and covered 389 banks from forty one sub-Saharan African countries. Results were that apart from asset quality, higher returns on assets are associated with larger bank size, activity diversification, and private ownership. Krueger and Tornell (1999) undertook a review of the credit crunch in Mexico after the 1995 crisis. They observed that banks were burdened with credits of negative real value, thereby reducing the capacity of the banks in providing fresh fund for new projects. The observed that NPL ratio rose sharply from 10% in 1994 to about 30% in 1997. The performance of the Mexican banks at this period was adversely affected by the rising NPL ratio caused by loan defaults in the banking system.

The outcomes of the studies reviewed in this section focused on the empirical evidence of the relationship between asset quality as measured by the NPL ratio to bank profitability. The studies, whilst including various other variables in their respective models, indicate their concurrence with theory and found that there was an inverse relationship between non-performing loans and bank performance.

2.4.3 Cost Efficiency and Bank Performance

Jiang, Tang, Law and Sze (2003) carried out studies on cost efficiency on the profitability of the banking sector in Hong Kong. They found that both bank-specific as well as macroeconomic factors were important determinants in the profitability of banks. Specifically, operational efficiency and business diversification were found to contribute to higher returns on assets. On their part, Iannotta, Nocera, and Sironi (2007) studied the performance and risk of a sample of 181 large banks from 15 European countries over the 1999-2004 period and evaluate the impact of alternative ownership models, together with the degree of ownership concentration, on their profitability, cost efficiency and risk. The study found that mutual banks and government-owned banks exhibited a lower profitability than privately-owned banks, in spite of their lower costs; and that public sector banks had poorer loan quality and higher insolvency risk than other types of banks while mutual banks had better loan quality and lower asset risk than both private and public sector banks.

Davydenko (2010) argues that operating costs of a bank, as percentage of its profits, are expected to have a negative correlation with profitability. The level of operating expenses is viewed as an indicator of the management's efficiency. In support of this view point are Abreu and Mendes (2001) who, in their study of several European countries, concluded that operating costs have a negative effect on profit measures despite their positive effect on net interest margins. Other studies including those which were carried out by Bourke (1989) and Molyneux and Thorton (1992) found a relationship between bank profitability and expense management. These studies showed that an increase in expenses had an adverse impact on profitability. Gyamerah and Amoah (2015) carried out a study to investigate the relationship between profitability and a set of bank-specific characteristics and macroeconomic factors on foreign and local banks in Ghana between 1999 and 2010. The study found that cost management has an inverse relationship with profitability, bank size and credit risk and that there was a positive association with profitability. In their study, Mzee and Mohamed (2014), used

non-parametric technique for data from 1998 to 2011 and investigated the cost and profit efficiency and management behaviour of twenty five Tanzanian commercial banks. The overall results showed that domestic banks were more cost efficient while foreign banks were more profit efficient. The study also found that listed banks were more cost efficient than unlisted banks.

In another study, Karim, Chan and Hassan (2010), investigated the relationship between NPLs and bank efficiency in Malaysia and Singapore. Cost efficiency was estimated using the stochastic cost frontier approach assuming normal-gamma efficiency distribution model. The cost efficiency scores were then used in the second stage Tobit simultaneous equation regression to determine the effect of non-performing loans on bank efficiency. The results of the Tobit simultaneous equation regression results showed that higher NPLs reduced cost efficiency. Likewise, lower cost efficiency increases NPLs. The result also supports the hypothesis of bad management proposed by Berger and DeYoung (1992) that poor management in the banking institutions results in bad quality loans, and therefore, escalates the level of NPLs and adversely impacts on profitability. Ojiambo (2014) carried out a study to evaluate the effects of real estate finance on the financial performance of listed commercial banks in Kenya. The findings of the study are that liquidity and cost of operations had a strong negative effect on the financial performance of listed commercial banks in Kenya in that the profitability of Kenyan banks declined with an increase in cost of operations.

Kosmidou (2008) examined the determinants of performance of Greek banks during the period of EU financial integration (1990-2002). He used an unbalanced pooled time series dataset of twenty three banks. Findings of the study showed that high return on average assets (ROAA) was found to be associated with well-capitalized banks and lower cost to income ratios. The findings of the study are in line with theory which posits that improvement in bank performance is associated with lower cost to income ratios (cost efficiency). In their study, Salas and Saurina (2002) combined macroeconomic and microeconomic variables as explanatory regressors in Spanish

commercial and savings banks for the period 1985-1997. They found that low cost efficiency is positively associated with increases in future non-performing loans and therefore adversely affected bank performance. Flamini *et al*, (2009) reasoned that in relatively uncompetitive markets where banks enjoy market power, costs are passed on to customers; hence there would be a positive correlation between overheads costs and profitability. This indicates that costs are passed on to depositors and lenders in terms of lower deposits rates/ or higher lending rates. Naceur (2003) investigated the impact of bank's characteristics, financial structure and macroeconomic indicators on bank's net interest margins and profitability in the Tunisian banking industry for the 1980-2000 period. It was found that high net interest margin and profitability tend to be associated with banks that held a relatively high amount of capital, and with large overheads.

The bulk of the empirical studies reviewed show a strong support to theory that there is an inverse relationship between cost efficiency and bank performance. The financial performance of banks increases whenever costs and expenses of a bank are controlled and low. Few studies, however, found that there was a positive correlation between overheads costs and profitability in instances where costs were passed on to depositors and lenders in terms of lower deposits rates or higher lending rates.

2.4.4 Cash Reserve Ratio and Bank Performance

In examining the significance of cash reserve requirement, Olokoyo (2011) carried out a study on the determinants of commercial banks' lending behavior in Nigeria. Using OLS model, included the following variables: commercial banks loan advance (LOA), volume of deposits (Vd), investment portfolio (Ip), interest (lending) rate (Ir), stipulated cash reserve requirements ratio (Rr) and their liquidity ratio (Lr) for the period 1980 – 2005. The study found that Ir, Rr and Lr were significant with a positive relationship to credit. A related study by Olusanya *et al* (2012) researched on the determinants of lending behaviour of commercial banks in Nigeria and included the cash reserve ratio among the independent variables. The results of the study showed that there is a direct or

positive relationship between commercial bank loan and advances and the cash reserve requirement ratio. In yet another study, Malede (2012) examined the role of cash reserve ratio in his study on determinants of commercial banks' lending in Ethiopia. The study used panel data of eight commercial banks in the period from 2005 to 2011. He tested the relationship between commercial bank lending and its some determinants using OLS. The results showed that there is significant relationship between commercial bank lending and its size, credit risk, gross domestic product and liquidity ratio.

A related study was carried out by Gizycki (2001). The paper examined the overall variability of Australian banks' credit risk during the 1990s. One of the findings of the study is that credit growth is strongly correlated with banks' risk (NPLs). In their paper, Köhler (2012) analyzed the impact of loan growth and business model on bank risk in fifteen EU countries. The study showed that banks with high rates of loan growth are more risky. Additionally, the study found that banks would become more stable if they increased their non-interest income share due to a better diversification of income sources. A significant outcome of the study is that it demonstrated that banks become more risky if aggregate credit growth is excessive. This even affects those banks that do not exhibit high rates of individual loan growth compared to their competitors. In another related research undertaking, Kimera (2011) studied commercial banks' investment in loans and treasury bills and their overall profitability in Uganda covering the period from 1998 to 2005. The study used a data set comprising 95 observations for 15 commercial banks and found that commercial banks' investment volume in loans was found to be the only variable that had a statistically significant influence in accounting for profitability of commercial banks in Uganda. Hichem *et al* (2012) explored the key determinants of bank profitability and differentials in interest margins for deposit banks during the period 1996 2003. Following both the dealership model and the micro-model, they investigated a variety of determinants including regulatory changes. The study found that, among others, the regulatory component (opportunity cost of CRR) was one of the most relevant factors in explaining Tunisian banks interest differential and bank performance.

In another study, Montoro and Moreno (2011) explored the use of reserve requirements in three Latin American countries of Brazil, Colombia and Peru, between 1990 and 2006. The key finding of the study was that higher reserve requirements tightened domestic financing conditions, hence a decrease in bank credit and profitability. Friedman and Schwartz (1963) explored role of stock of money in economic fluctuations. They found that a rise in the deposit currency ratio implied a rise in the stock of money, because it meant that each dollar of high-powered money held by banks gave rise to a larger number of dollars of deposits, hence an increase in the banks' credit creation ability. The various studies that have examined the relationship between cash reserve ratio and bank performance concluded that the cash reserve ratio was a significant variable. Some of the outcomes however suggested that higher reserve requirements tightened domestic financing conditions, hence a decrease in bank credit and profitability, whilst the others found that an increase in the ratio led to an increase in the banks' credit creation ability.

2.4.5 Lending Interest Rate and Bank Performance

Okoye and Onyekachi, (2013) examined the impact of bank lending rate on the performance of Nigerian deposit money banks between 2000 and 2010. The study utilized secondary data econometrics in a regression where time-series and quantitative design were combined and estimated. The study concluded that lending rates and monetary policy rate are true parameters of measuring bank performance. On their part, Georgievska *et al*, (2011) carried out an investigation on the determinants of lending rates and interest rate in spreads in Greece. They used panel estimation techniques on a sample of domestic commercial banks. The study found that lending rates are mostly influenced by bank size and market share and to a lesser extent by deposit rates and NPLs. In addition, policy variables such as the domestic policy rate and the foreign interest rate also appeared to be quite important. In another study, Flannery (1980)

carried out a study on banks in the USA and found out that lending rates had a significant impact on the financial performance of the banks.

One of the key studies on bank performance in Kenya was carried out by Chepchirchir (2011). The objective of the study was to identify the determinants of profitability in respect to the commercial banks in the Kenyan banking sector. The study analyzed panel data covering the period from 2000 to 2009. The study found that the coefficients for liquidity, capital, expense management (cost efficiency), bank size, market share, inflation and loan loss provisions (asset quality) were the most significant in determining profitability in the Kenyan banking sector. The study also found that the coefficients for interest rate, exchange rate, concentration and GDP per capita were the least significant on profitability performance in Kenyan commercial banks.

On their part, Demirguc-Kunt and Huizinga (1999) used bank-level data for 80 countries in the years 1988-95 to explore the differences in interest margins and determinants of bank profitability. The study used various variables including bank characteristics, macroeconomic conditions, explicit and implicit bank taxation, deposit insurance regulation, overall financial structure, and underlying legal and institutional indicators. The study found that, among other variables, there was a positive relationship between interest rates and profitability. Similarly, Staikouras and Wood (2004) evaluated the performance of the EU banking industry as a whole in 1994-1998 using OLS and fixed effects models. The results showed that the profitability of European banks was influenced not only by factors related to their management decisions but also to changes in the external macroeconomic environment, including interest rate.

The studies reviewed in respect to the relationship between interest rate and bank performance indicate that interest rate variable is a significant factor on performance of banks. The studies have also revealed that there is a positive relationship between interest rate and performance.

2.4.6 Economic Growth and Bank Performance

Studies on the effect of economic growth include the one which was carried out by Khemraj and Pasha (2009) who studied the determinants of non-performing loans in Guyana. The study used a panel dataset and a fixed effect model. The results of the empirical results show that economic growth (GDP growth) is inversely related to NPLs, suggesting that an improvement in the real economy translates into lower NPLs, hence results in better financial performance of banks. In another study, Rajan and Dhal (2003) utilised panel regression analysis to report that favourable macroeconomic conditions (measured by GDP growth) and financial factors such as maturity, cost and terms of credit, banks size, and credit orientation impact significantly on the NPLs of commercial banks in India. Using a pseudo panel-based model for several Sub-Saharan African countries, Fofack (2005) found evidence that economic growth, real exchange rate appreciation, the real interest rate, net interest margins, and inter-bank loans are significant determinants of NPLs. The author attributes the strong association between the macroeconomic factors and non-performing loans to the undiversified nature of some African economies. Using a dynamic model and a panel dataset covering the period 1985-1997 to investigate the determinants of problem loans of Spanish commercial and saving banks, Salas and Saurina (2002) reveal that real growth in GDP, rapid credit expansion, bank size, capital ratio and market power explain variation in NPLs.

The studies which analysed the relationship between economic growth and bank performance suggest that there is a positive relationship between the two variables noting that a positive economic growth is associated with more income which enhances the debt servicing capacity of borrowers. The converse is also true.

2.5 Critique of the Existing Literature

Studies on the Malawian banking sector include those which were carried out by Chirwa (1999), Chirwa (2001), Mlachila and Chirwa (2002), Kanyoma (2006), Lipunga (2014) and Kaluba and Chirwa (2015). A review of these studies indicates that they did not directly investigate the effect of micro and macro-economic factors on the financial performance of commercial banks in Malawi. For clarity Chirwa (1999) who used cointegration and error correction model focused on investigating long-run relationship between profitability and market structure; Chirwa (2001) who used the market structure–performance hypothesis studies the relationship of monopoly power and commercial bank profitability. Mlachila and Chirwa (2002) examined financial reforms and interest rate spreads; Kanyoma (2006) was limited to performance of privatized banks; and Lipunga (2014) aimed at studying the risk disclosure level in annual reports of the Malawian commercial banks and the related influence on profitability; whilst Kaluba and Chirwa (2015) investigated competition and banking industry regulation in Malawi.

Similarly, studies on the impact of asset on profitability including those which were carried out by Khalid (2012), Olweny and Shipho, (2011), analysed the effects of banking sectoral factors, including asset quality, and were carried out in India and Kenya, respectively. They were not carried out in the Malawian banking sector. The studies by Qin and Pastory (2012) in Tanzania, Flamini *et al* (2009) focused on investigating the determinants of commercial bank profitability in Tanzania and Sub-Saharan Africa, respectively. These studies, apart from focusing on determinants of commercial banks' performance, did not include the Malawian banking sector.

Studies on cost efficiency include those by Jiang *et al* (2003) and Karim *et al* (2010) were carried out in Hong Kong and Malaysia and Singapore, respectively, whose socio-economic conditions are discordant to the Malawian situation. In his study, Ojiambo (2014) evaluated the effects of real estate finance on the financial performance of listed

commercial banks in Kenya. Their study which included cost management as one of the varibales, Gyamerah and Amoah (2015) carried out a study on foreign and local banks in Ghana between 1999 and 2010. The study by Mzee and Mohamed (2014), apart from the fact that it was carried out in Tanzania, it was limited to studying listed commercial banks. Iannotta et al (2007) studied the large banks from European countries over the 1999-2004. Apart from the fact that the study was carried out in Europe which has different socio-economic factors from Malawi, the study covered only a five-year period. In their studies, Olokoyo (2011), Olusanya et al (2012), Malede (2012) included the role of cash reserve ratio in their respective models. Apart from the fact that these studies were carried out in Nigeria and Ethiopia, they focused on establishing the determinants of lending in those countries. This is a significant point of departure given that the proposed study shall examine the effect of NPLs and other factors on the profitability of commercial bank performance in Malawi. In the same vein, Jiang *et al* (2003), Okoye and Onyekachi (2013) and Chepchirchir (2011), Georgievska *et al*, (2011) and Flannery (1980) looked into the impact of lending rates on European and US banks. In regard to economic growth there were studies of (Khemraj and Pasha, 2009; Salas and Suarina, 2002; Rajan and Dhal, 2003; and Fofack, 2005). These studies, however, focussed negative relationship between the economic growth (GDP) and NPLs. They did not directly address the effect of economic growth on bank profitability.

Apart from having been carried outside the Malawian banking sector, the studies reviewed above focused generally on bank profitability and determinants of lending rates. The studies did not address the hypotheses regarding the effect of micro and macro-economic factors on the financial performance of commercial banks in Malawi, which is the intention of the proposed study.

2.6 Summary

The preceding sections reviewed the relevant literature pertaining to the effect and relationship of the various variables that affect financial performance of commercial banks. The literature review covered Asset Quality, Cost Efficiency, Cash Reserve Requirement, Lending Interest Rate and Economic Growth. Among the studies that have been reviewed, there is no specific study which addressed the effect of micro and macro-economic factors on the financial performance of commercial banks in the Malawian banking sector. The study tested the following variables: asset quality, cost efficiency, reserve requirement, interest rate spread and economic growth. To back up the variables which were tested in the study, the following theories were reviewed: Portfolio Theory, in respect to the dependent variable, Performance; Theory of Information Asymmetry, in respect to asset quality; Theory of Economic Efficiency in respect to cost efficiency; Theory of Financial Intermediation, in respect to cash reserve requirement; Theories of Interest Rate in respect to the lending interest rate variable and Theories of Economic Growth in respect to the moderating variable, GDP.

Research and evidence from various countries indicated that increasing levels of non-performing loans (NPLs) have a direct impact on the financial profitability. There is a negative relationship between the NPLs and performance efficiency. The empirical review has cited and analyzed various studies which were carried out in the Malawian banking sector, and those which were carried out elsewhere in respect to the key variables which include asset quality, cost efficiency, cash reserve requirement and interest rate spread; and the moderating variable, economic growth. The critique looked at all the studies reviewed and noted that most of the studies had a short coming that, apart from not having been carried out in Malawi, they did not address the effect of micro and macro-economic factors on the financial performance of commercial banks in the Malawian banking sector.

2.7 Research Gap

A number of studies have examined various aspects pertaining to performance of the commercial banks. Such studies include those carried out on the Malawian banking sector by Chirwa (1999), Chirwa (2001), Mlachila and Chirwa (2002) and Kanyoma (2006); those which focused on an assessment of the impact of asset quality on profitability of private banks (Khalid, 2012); a study on the effect of banking sectoral factors on the profitability of commercial banks (Olweny & Shipho, 2011); an examination on the determinants of commercial banks' performance (Qin and Pastory, 2012); an investigation into the relationship between NPLs and bank efficiency (Karim, Chan & Hassan, 2010); the relationship between bank profitability and expense management (Bourke, 1989; Molyneux &Thorton, 1992; Ojiambo, 2014) and Gyamerah and Amoah (2015), cost and profit efficiency and management behaviour (Mzee & Mohamed, 2014); correlation between credit growth with banks' risk (Gizycki, 2001; Köhler, 2012); an evaluation of the impact of alternative ownership models, with the degree of ownership concentration, on the profitability (Iannotta *et al*, 2007); investigation of the role of cash reserve requirement on bank competition and stability (Olokoyo (2011); role of cash reserve ratio (Olusanya *et al*., 2012), Malede, 2012); an examination of the impact of bank lending rate on the performance of deposit money banks (Okoye and Onyekachi, 2013; Jiang *et al*, 2003); determinants of lending rates and interest rate and the impact of lending rates (Georgievska *et al*, 2011); Flannery, 1980); and relationship between the growth in real GDP and NPLs (Salas & Suarina, 2002; Rajan & Dhal, 2003; Fofack, 2005). Upon a review of the studies that have been carried out by various researchers, it was observed that none of the studies directly examined the effect of micro and macro-economic factors on the financial performance of commercial banks in Malawi. The aim of this study was, therefore, to fill this knowledge gap.

The review of literature has revealed that bank performance can be influenced by bank-specific factors and external factors. Bank-specific factors are those factors within the

direct control of managers and can be best explained by the CAMEL framework, while external factors include industry-specific and macroeconomic factors. This study focuses only on industry-specific factors as external factors. The review of literature also revealed that the multiple linear regressions method is the most used in modeling the relationship between bank profitability and its factors. The relevant interrelationships among bank-specific factors and market specific factors and their impact on bank profitability, as revealed by the reviewed of literature, are depicted in the Conceptual Framework (Figure 2.1). Finally, it is clear from the reviewed literature that few local studies have been dedicated on this particular area of bank performance and that studies that have attempted to do so have tended to study each factor of performance to the exclusion of other factors.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter outlines the methodology that was used in this study. Areas which are covered in this Chapter include the research design, population, target population, sampling technique and frame, target population, data collection procedure and data analysis and presentation. It should be noted that also covered in this chapter is a discussion on statistical and econometric tools that were used to analyze the data. Additionally, this Chapter looks into the approach that was adopted to examine data for the chosen variables and the construction of empirical models.

3.2 Research Design

According to Cooper and Schindler (2006), Research Design is the general plan and structure which facilitates the researcher to answer the research hypotheses. This study used mixed research design encompassing both descriptive and correlational research techniques in carrying out the study which investigated the effect of micro and macro-economic factors on financial performance of commercial banks in the Malawian banking sector. The choice of the named research design was informed by the goal of the study which was to evaluate and establish whether the variables used in the study had an effect on the financial performance of commercial banks in the Malawian financial sector. Such an evaluation could only be meaningfully carried out through use of both descriptive and correlational research techniques.

Descriptive Research design may be used when data are collected to describe organizations or phenomena (Creswell, 2003). According to Kothari (2008), Descriptive Research design has enough provision for protection of bias and maximized reliability. This research design encompasses the analysis of descriptive statistics (Holland and Campbell, 2005). Accordingly, important metrics including the mean, standard deviation

and variance of each of the key variables were computed and compared across the commercial banks. The study shall also used Correlational Research design. According to Mugenda and Mugenda (2003), Correlational Research design involves identification of variables that are important in determining a given phenomenon (i.e. the financial performance of the banks). Correlational Research uses numerical data to explore relationships between two or more variables. The degree of relationship is expressed in terms of a coefficient of correlation.

3.3 Population

Sekaran (2010) defines Population as the entire group or things of interest that the researcher wishes to investigate. The population of the data source for this study was made up of all the licensed banks in the banking sector in Malawi between the period of 2000 and 2014. As at 31st December, 2014, there were 11 licensed commercial banks comprising of 4 large and listed banks and, 7 small and medium banks in Malawi.

3.4 Target Population

The target population for this study comprised the ten commercial banks in the banking sector in Malawi (RBM, 2013). The specific banks which the study focused on are all licensed commercial banks currently operating in Malawi. The names of the banks included in the target Population are indicated in Table 3.1:

Table 3.1 : Target Population

Number	Bank name
1	National Bank of Malawi
2	Standard Bank of Malawi
3	First Merchant Bank
4	NBS Bank
5	Ecobank Malawi
6	FDH Bank
7	Malawi Savings Bank
8	Opportunity Bank Malawi
9	Indebank Limited
10	Nedbank Malawi

Source: Malawi Stock Exchange, 2013

CDH Investments Bank, which is the eleventh bank in Malawi was excluded from the study considering that it had operated as a registered commercial bank for only two years by the time that this study was undertaken.

3.5 Sampling Design

Creswell (2003) defines Sampling frame as the list consisting of the units of the population. Cooper and Schindler (2003) describe sampling frame as the list of population units from which a sample is selected. It is the methodology that is used to determine the study's population of interest. The study used the census method whereby data from all the commercial banks was gathered and analyzed. This technique was chosen because it provides a true measure of the population and has no room for sampling error. The frame used in this study consisted of the whole Target Population. Accordingly, 10 commercial banks formed the sample of this study. The 10 banks compromised of 4 large banks and 6 small and medium banks.

3.6 Data Collection Procedure

Data collection procedure is a means by which information is obtained from the selected subjects of an investigation (Creswell, 2003). The study used secondary data. The data collected was in form of audited annual reports which were collected from the Finance Department of each of the banks named on the Sampling Design and from Bankscope, an international database for commercial banks. Additional data, particularly in respect to GDP growth, was obtained from various sources including RBM Supervision Reports, RBM Economic and Financial Review as published between 2000 and 2014.

3.7 Data Analysis and Presentation

This Section explains how data was analyzed and presented. The data was analyzed using both descriptive and correlational and inferential analysis. Version 23.0 of Statistical Program for Social Sciences (SPSS) and Stata for Windows was used for the analysis. The named software packages were previously used to analyze data in similar studies such as those by Ngugi (2013). The Section discusses the approach used by the study in regard to descriptive statistics and relationship analysis, conceptual model, measurement of variables, the empirical models and diagnostic tests.

3.7.1 Descriptive Statistics and Relationship Analysis

Various graphs and tables were used to analyze the general trends of the data from 2000 to 2014 based on ten of the eleven licensed commercial banks in the Malawi banking sector. Scatter plots and a correlation matrix were used to examine the relationship between the dependent variable and explanatory variables. Under the descriptive statistics, the mean, standard deviation and variance of each of the key variables were obtained and compared across the commercial banks. A correlation matrix was prepared to measure the degree of relationships among the variables.

3.7.2 Measurement of the Variables

The Table 3.2 presents the measurements that were used to operationalize the study variables and facilitate the application of the linear multiple regression analysis.

Table 3.2 : Operationalization of the Variables

Variable	Measurement
Bank Performance	• Ratio of net income to total assets i.e. Return on Assets
Asset Quality	• Ratio of Non-Performing Loans to Total Gross Loans i.e. Non-Performing Ratio. • Higher ratio indicates poor asset quality.
Cost Efficiency	• Ratio of Operating Expenses (staff wages and administrative expenses) to Operating Income. • Higher ratio indicates inefficiency.
Cash Reserve Ratio	• Cash Reserves over Total Deposits
Lending Interest Rate	• Average Lending Interest Rate.
Economic Growth	• Annual Percentage Change in GDP

3.7.3 Conceptual Model

The conceptual schema of the relation between the independent variables and dependent variable distilled from the literature review by the researcher is shown on Figure 2.1. It assumes that the relationship between the independent variable and dependent variables is linear. Under inferential statistics, the study used multiple linear regression model. The choice of this analysis tool was premised on the fact that the relationship between the dependent and independent variables that will be investigated in this study is linear. Additionally, multiple linear regression provides a rich and flexible framework that suits the needs of many analysts and has been used in similar studies, including those carried

out by Khalid (2012), Olweny and Sipho (2011), Olokoyo (2011), Malede (2012), Chepchirchir (2011) and Ngugi (2013), Molyneux and Thornton (1992), Demirguc-Kunt and Huizinga (2000). Based on the Conceptual Framework presented in Figure 2.1, Financial Performance of commercial banks in Malawi was a function of Asset Quality, Cost Efficiency, Cash Reserve Requirement and Lending Interest Rate with Gross Domestic Product being the moderating variable.

The study estimated both simple linear regression models and multiple linear regression models. The simple linear regression models which were estimated are as follows:

$$Pi = \beta_o + \beta_{1i} AQ_i + \varepsilon_i \quad \text{.....(i)}$$

$$Pi = \beta_o + \beta_{1i} CE_i + \varepsilon_i \quad \text{.....(ii)}$$

$$Pi = \beta_o + \beta_{1i} CRR_i + \varepsilon_i \quad \text{.....(iii)}$$

$$Pi = \beta_o + \beta_{1i} LIR_i + \varepsilon_i \quad \text{.....(iv)}$$

Where: *P* is Performance of Commercial Banks in Malawian banking sector

AQ_i is Asset Quality ratio for bank i;

CE_i is Cost Efficiency for bank i;

CRR_i is Cash Reserve Requirement for bank i;

LIR_i is Lending Interest Rate for bank i;

ε is the error component;

β_0 is the y-intercept (constant);

β_i ; i = 1, 2, 3 and 4 represents the independent variable coefficients estimated.

The multiple linear regression model used to estimate the relationship was expressed as:

$$P_i = \beta_o + \beta_{1i}AQ_i + \beta_{2i}CE_i + \beta_{3i}CRR_i + \beta_{4i}LIR_i + \varepsilon_i \quad \text{.....(v)}$$

Where: *P* is Performance of Commercial Banks in Malawian banking sector

AQ_i is Asset Quality ratio for bank i;

CE_i is Cost Efficiency for bank i;

CRR_i is Cash Reserve Requirement for bank i;

LIR_i is Lending Interest Rate for bank i;

ε is the error component;

β_0 is the y-intercept (constant);

β_i ; i = 1, 2, 3 and 4 represents the independent variable coefficients estimated.

To account for the moderating effect of economic growth (GDP), moderated multiple regression (MMR) analysis was used. Aguinis (2004) clarifies that MMR is an inferential procedure where two different least-squares regression that is the MMR regression and the unmoderated regresion are compared. According to Ongore and Kusa (2013) MMR is obtained by interacting each of the bank specific independent variables with the moderating variable such that:

$$P_i = \beta_o + \beta_{1i}AQ_i * GDP + \beta_{2i}CE_i * GDP + \beta_{3i}CRR_i * GDP + \beta_{4i}LIR_i * GDP + \varepsilon_i \quad \text{..... (vi)}$$

Let Z represent the four independent variables as specified in Equation (i), then from Equation (ii), we have: *P* = Performance of Commercial Banks as the dependent variable;

GDP is the moderating variable (Gross domestic product), represented by G;

Then Z*G is the interaction term which is given as the product between the individual independent variables (as presented in equation (i)) and economic growth (GDP). To test the moderating effect of economic growth, the Adjusted R square and F- statistic and significance of moderated coefficients of the MMR model (equation (ii)) was compared and analyzed with reference to the original model estimated (equation (i)).

3.7.4 Diagnostic Tests

The study conducted a series of diagnostic tests before interpretation of the model. The first test was Normality Test which was used to evaluate the distribution pattern (Holland & Campbell, 2005) of the data. Practically, non-normal data affects particular parameter estimates which could turn out to be statistically significantly different from zero when in fact this is not the case (type 1 error).

The study also carried out a Stationarity Test. According to Challis and Kitney (1991), Stationarity is a quality of a process in which the statistical parameters (mean and standard deviation) do not change with time. The key property of a Stationary process is that the auto-correlation function depends on lag alone and does not change with the time at which the function was calculated. More formally, a stationary stochastic process is one where given t1, . . . , tℓ the joint statistical distribution of Xt1 , . . . , Xtℓ is the same as the joint statistical distribution of Xt1+τ , . . . ,Xtℓ+τ for all ℓ and τ . This means that all moments of all degrees (expectations, variances, third order and higher) of the process, anywhere are the same. It also means that the joint distribution of (Xt, Xs) is the same as (Xt+r, Xs+r) and hence cannot depend on s or t but only on the distance

between s and t, i.e. s − t. The study tested for stationarity using two tests: the Levin-Lin-Chu unit-root test and the Harris–Tzavalis test.

The study tested for autocorrelation in the data. To do this, the study carried out a Durbin Watson Test. One of the assumptions under OLS states that the disturbances u_t and u_s are independently distributed, which is called serial independence. If this assumption is no longer valid, then the disturbances are not pairwise independent, but pairwise autocorrelated (or Serially Correlated). This means that an error occurring at period *t* may be carried over to the next period *t+1*. Autocorrelation is most likely to occur in time series data. OLS would have been used to estimate models in absence of autocorrelation but since autocorrelation was detected, Generalized Least Squares (GLS) was used. The GLS estimator is unbiased, efficient, is the maximum likelihood estimator, the variance-covariance matrix of estimates are correct, and therefore the estimates of the standard errors are unbiased and consistent.

Gletjser Test was used to test for heteroskedasticity in the stochastic terms. Heteroskedasticity occurs when the variance of the error terms differ across observations. Studenmund (2011) clarifies that heteroskedasticity test is useful to examine whether there is a difference in the residual variance of the observation period to another period of observation. There are several statistical methods that can be used to determine whether a model is free from the problem of heteroscedasticity or not, such as White Test, Test Park, and Test Glejser. This study used Glejser Test which was conducted by regressing absolute residual values of the independent variable with regression equation i.e.: Ut = A + B Xt + vi. According to Park (2009), the dependent variable of the unstandardized residuals are obtained from running a regression and saving the residuals. Then the absolute values of the residuals were obtained and regressed on the independent variables. Since presence of heteroskedasticity was detected, GLS was used. GLS cures the problems associated with heteroscedasticity by dividing each observation by the associated standard deviation of the error to transform the model.

The study also undertook a test for Multicollinearity. Multicollinearity exists when one or more explanatory variables are highly linearly related to each other. When multicollinearity exists in a linear functional relationship between two or more independent variables, it can significantly affect the estimation of the coefficients of the variables. Multicollinearity may cause the variances and standard errors of the estimates to increase and the t-scores to decrease. However, multicollinearity does not cause bias in the estimate and the overall fit of the equation (Studenmund, 2011). If the R is high in absolute value, then the two variables are quite correlated and multicollinearity is a potential problem. Some researchers pick an absolute value of 0.80, and concern about multicollinearity when the correlation coefficient exceeds 0.80 (Studenmund, 2011). Adjusted R-square and F-statistics were used to evaluate stability and reliability of each regression. Noting the presence of heteroscedasticity in the panel data, the study carried out the Hausman test to check for fixed effects and random effects. The objective of carrying out the Hausman test was to determine the appropriate model to be used. Lastly, the regression models were used to address the research hypotheses. Analysis of the aforementioned research hypotheses used student's t-test to evaluate the significance of the respective coefficient. Kothari (2004) recommends 95 percent level of confidence.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter represents the empirical findings and results of the analysis of the variables using techniques described in Chapter Three. Specifically, the data analysis was in line with specific objectives where patterns were investigated, interpreted and implications drawn on them. The chapter presents the results in two key categories. The first part deals with Descriptive Statistics of the data and outcomes; whilst the second part is in respect to Regression Analysis.

4.2 Descriptive Statistics

This section summarizes the characteristics of the variables. The results of the tests on the differences in means of all variables were considered i.e. Return on assets, Asset quality, Cost efficiency, Cash reserve requirement and Lending interest rate. Their respective mean, range, standard deviation, kurtosis, minimum and maximum values were considered. Descriptive statistics were also used to describe the basic features of the data in the study and the key trends of the variables over the period of the study. They provide simple summaries of the measures. Descriptive statistics such as graphs, key categorizations and percentages were used to analyze the data.

Table 4.1 : Descriptive Statistics

	Return on Assets (ROA)	Asset Quality	Cost Efficiency	Cash Reserve Requirement	Lending Interest Rate	Real GDP Growth
N	150	150	150	150	150	150
Valid N (listwise)	150	150	150	150	150	150
Minimum	-0.392	0.001	0.029	0.000	0.178	-0.041
Maximum	0.213	0.901	1.994	0.297	0.502	0.095
Range	0.605	0.900	1.964	0.297	0.324	0.136
Mean	0.0326	0.0828	0.6294	0.0929	0.2651	0.0430
Std. Deviation	0.08971	0.11899	0.30508	0.07091	0.08728	0.03483
Skewness	-1.896	3.980	1.801	0.491	1.396	-0.588
Skewness (Std. Error)	0.198	0.198	0.198	0.198	0.198	0.198
Kurtosis	8.552	20.130	6.029	-0.812	1.399	0.208
Kurtosis (Std. Error)	0.394	0.394	0.394	0.394	0.394	0.394

The value of the mean reports the arithmetical average of the variables which are included in the study. The minimum and maximum values indicate the lower and the highest value of the variable. The median indicate numerical value separating the higher half of a data sample. The range refers to the smallest interval which contains all the data and provides an indication of statistical dispersion of the data. The standard deviation exhibits how much variation or dispersion exists from the mean. A low standard deviation indicates that the data points are inclined to be extremely close to the mean; while high values of standard deviation indicate that the data set is broadened out over a large range of values. The variance represents how the random variable is distributed

near the mean value. Low variance indicates that the random variable is distributed near the mean value. High variance indicates that the random variable is distributed far from the mean value. Kurtosis is a statistical measure used to describe the distribution of observed data around the mean. Skeweness describes the asymmetry from the normal distribution in a set of statistical data. Skewness can be in the form of 'negative skewness' or 'positive skewness', depending on whether data points are skewed to the left (negative skew) or to the right (positive skew) of the data average.

The results summarized in Table 4.1 indicate that ROA had a mean of 0. 03269, standard deviation of 0.089714, range of 0.605, skeweness of -1.896 and kurtosis of 8.552. Asset quality had a mean of 0.0828, standard deviation of 0.1189, range of 0.900; skeweness of 3.980 and kurtosis of 20.130; Cost efficiency had had a mean of 0.6294, standard deviation of 0.305, range of 1.964; skeweness of 1.801 and kurtosis of 6.029; Cash reserve requirement had a mean of 0.09299, standard deviation of 0.0709, range of 0.297, skeweness of 0.491and kurtosis of -0.812; Lending interest rate had a mean of 0. .26513, standard deviation of 0.0872, range of 0.324 skeweness of 1.396 and kurtosis of 1.399; GDP growth had a mean of 0.093, standard deviation of 0.038, range of Cash Reserve Ratio had a mean of 0.04302, standard deviation of 0. 0348; range of 0.136; skeweness of -0.588 and kurtosis of 0.208.

4.3 Listing on the Malawi Stock Exchange

Out of the ten commercial banks studied, four were listed on the MSE whilst the other six were unlisted. The listed banks comprised the following: National Bank, Standard Bank, NBS Bank and First merchant Bank. The unlisted banks included Nedbank, Ecobank, Malawi Savings Bank, FDH Bank, Indebank and Opportunity Bank. The Figure 4.1 below gives an overview of the two categories of commercial banks as at 31st December, 2014 and provides a comparison of key metrics including total revenue, total assets, gross loans and total deposits.

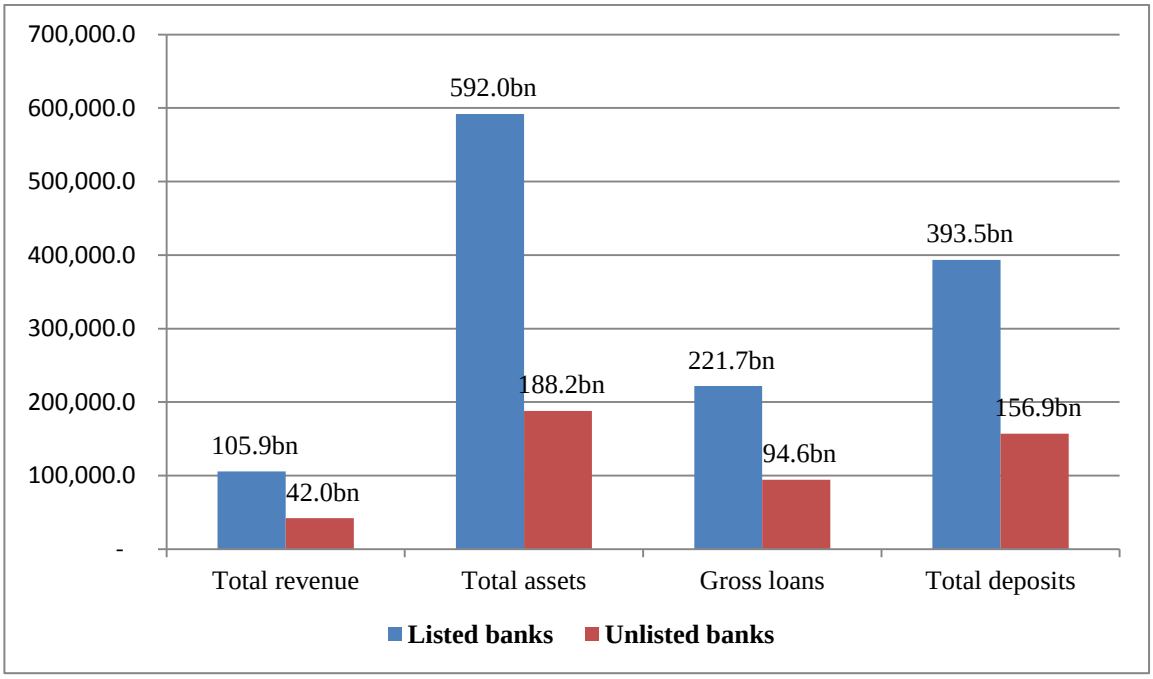


Figure 4.1: Comparative Metrics for Listed and Unlisted Commercial Banks in Malawi, Source: Compiled by the Researcher.

It is shown in the Figure 4.1 that total revenue from the listed banks was MK105.9 billion whilst that of the six unlisted banks was MK42.0 billion. The revenue from the four listed banks was 2.5 times higher than that from the unlisted banks. In regard to total assets, listed banks recorded total assets of MK592.0 billion whilst the total assets for unlisted banks stood at US$188.2 billion. The listed banks had assets worth 3.15 times that of unlisted banks. A similar position is noted in respect to gross loans which were MK22.7 billion for the listed banks and MK94.6 billion in respect to the unlisted banks. At MK393.5 billion, the total deposits for the listed banks were 2.5 times that of unlisted banks which stood at MK156.9 billion.

4.4 Classification of Banks by Asset Size

The Figure 4.2 depicts the relative sizes of the commercial banks in Malawi by their respective total assets position as at 31st December, 2014.

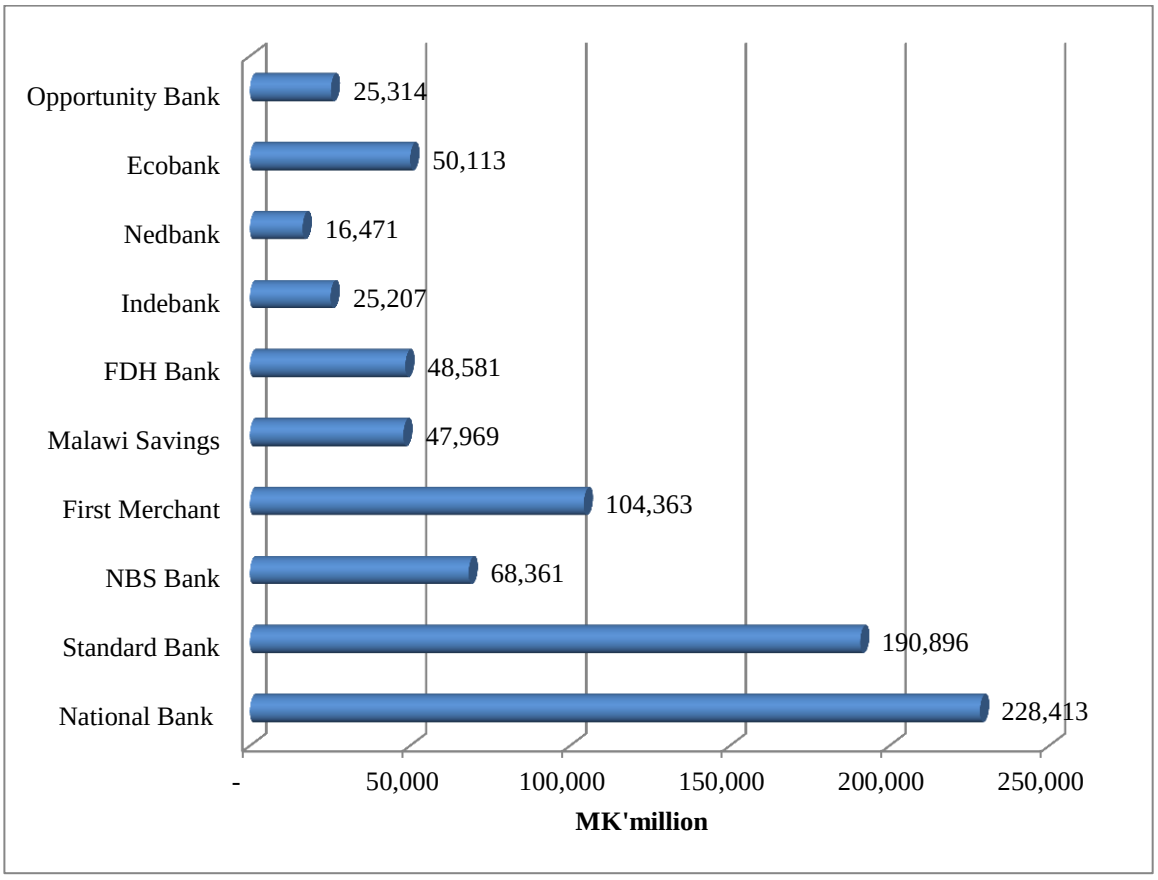


Figure 4.2: Bank size analyzed by Total Assets, Source: Compiled by the Researcher.

The Figure 4.2 indicates that the largest commercial bank in Malawi by asset size was the National Bank which had total asset value of MK228.4 billion. The second largest bank was the Standard Bank with total assets worth MK190.8 billion. The third largest bank is First Merchant Bank with total asset size of MK104.3 billion whilst NBS Bank has total assets worth MK68.3 billion in fourth position. The first to fourth largest commercial banks are listed on the MSE. In fifth, sixth and seventh positions are Ecobank, FDH Bank and the Malawi Savings Bank with total assets of MK50.1 billion,

MK48.5 billion and MK47.9 billion, respectively. Opportunity Bank had assets of MK25.3 billion, whilst Indebank has total assets of MK25.2 billion and Nedbank had assets of MK16.5 billion.

4.5 Key Features of Commercial Banks in Malawi

This section provides a summary of the key characteristics of the commercial banks studied. The features include number of branches, number of agencies, satellite kiosks and mobile vans, number of ATMs per bank and number of staff. Tables 4.2 to 4.4 and Figures 4.3 and 4.4 below provide more information on the features which encompass the number of branches, number of agencies, satellite kiosks and mobile vans, number of ATMs and number of staff. Figure 4.5 depicts the trend of the key variables including ROA and Asset Quality.

4.5.1 Branches Operated by Commercial Banks

The number of branches operated by each commercial bank under study and the relation to other banks is depicted in Table 4.2.

Table 4.2 : Branches Operated by Commercial Banks in Malawi

Name of Bank	Number of Branches
National Bank	14
Standard Bank	7
NBS Bank	13
First Merchant	9
Malawi Savings	14
FDH Bank	11
Indebank	6
Nedbank	4
Ecobank	8
Opportunity Bank	6
Total	**92**

Source: Reserve Bank of Malawi, Annual Supervision Reports

National Bank and Malawi Savings Bank had fourteen branches each; whilst NBS Bank had thirteen and FDH Bank had eleven branches. These were followed by First Merchant Bank which had nine branches Ecobank had eight and Standard Bank had seven branches. Indebank and Opportunity Bank had six branches each followed by Nedbank with 4 branches.

4.5.2 Distribution of Agencies, Satellite Kiosks & Mobile Vans (ASMs)

The distribution of ASMs for each respective bank in Malawi is shown in Figure 4.3.

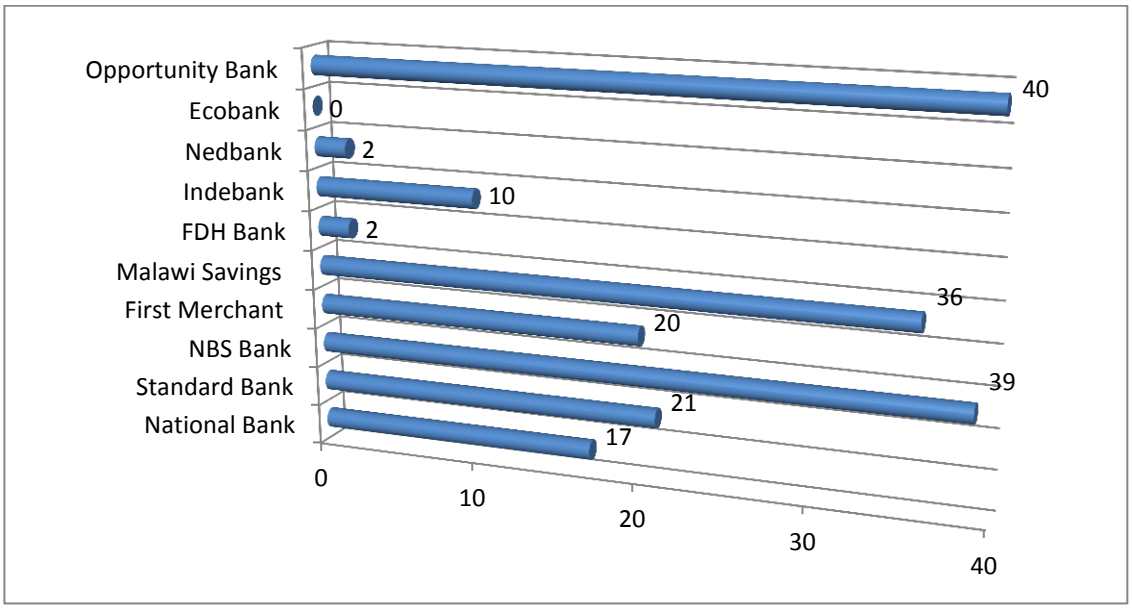


Figure 4.3: Distribution of Agencies, Satellite Kiosks and Mobile Vans (ASMs)

Source: Compiled by the Researcher

The Figure 4.3 indicates that Opportunity Bank had forty ASMs whilst NBS Bank had thirty nine and Malawi Savings Bank had thirty six. Standard Bank had twenty one ASMs, First Merchant Bank had twenty whilst National Bank had seventeen AMS. These were followed by Indebank with ten AMS and FDH Bank and Nedbank had two AMS each. Ecobank had no AMS.

4.5.3 Distribution and Number of Auto-Teller Machines (ATMs)

The distribution of ATMs for each respective bank in Malawi is shown in Figure 4.4.

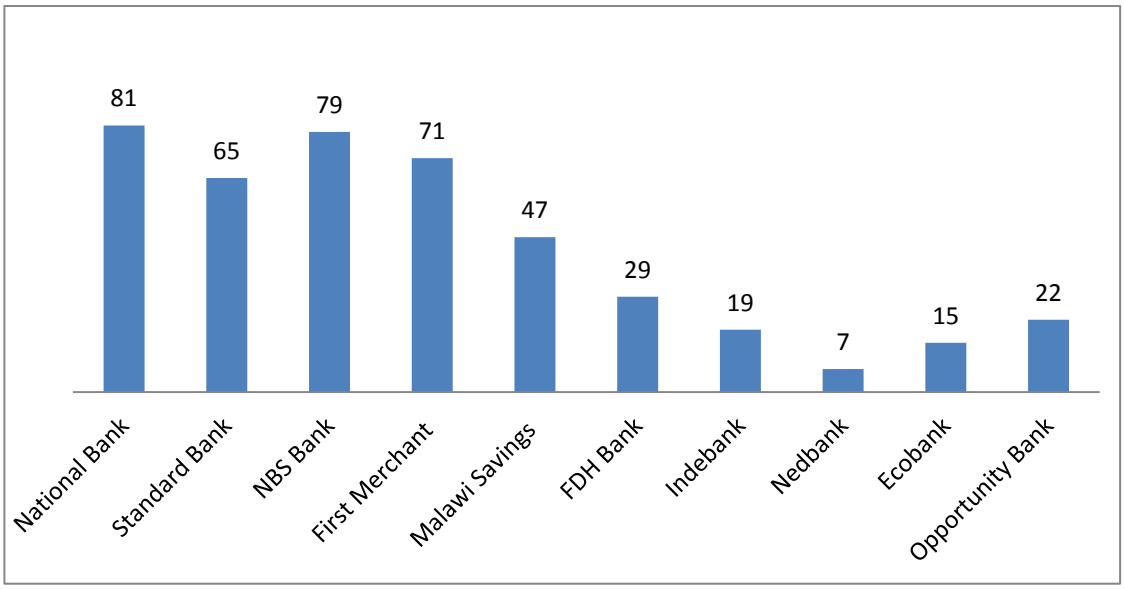


Figure 4.4: Distribution and number of ATMs Source**:** Reserve Bank of Malawi, Annual Supervision Reports

The Figure 4.4 indicates that in respect to ATMs, National Bank had 81, NBS Bank had 79, First Merchant Bank 71 and Standard Bank had 65. Malawi Savings Bank, FDH Bank, Opportunity Bank, Indebank, Ecobank and Nedbank had 47, 29, 22, 19, 15 and 7 each, respectively. It was observed that the National Bank, which is the largest bank by asset size, has the highest number of ATMs. NBS Bank despite being the fourth largest bank by asset size, had the second highest number of ATMs in Malawi.

4.5.4 Categorization into Public and Private Banks

Table 4.3 categorizes the commercial banks in Malawi into public and private banks. Public banks are those where the Government of Malawi held a controlling shareholding.

Table 4.3: Malawian Banks Categorized into Public and Private

Name of bank	Public banks (MK'bn)	Private banks (MK'bn)	Total assets (MK'bn)
National bank	-	228,413	228,413
Standard bank	-	190,896	190,896
NBS Bank	-	68,361	68,361
First Merchant	-	104,363	104,363
FDH Bank	-	48,581	48,581
Nedbank	-	16,471	16,471
Ecobank	-	50,113	50,113
Opportunity	-	25,314	25,314
Malawi savings	47,969	-	47,969
Indebank	23,117	-	23,117
Total	**71,086**	**732,513**	**803,599**
Percentage	**8.8%**	**91.2%**	**100.0%**

Source: Reserve Bank of Malawi, Financial Institution Supervision, Annual Reports

The Table 4.3 indicates that there are eight privately-owned banks and two publicly-owned banks in the Malawi banking sector. The privately-owned banks have total assets of MK732.5 billion which comprise 91.2 percent of the total assets; and two publicly-owned banks with total assets of MK71.08 billion comprising 8.8 percent of total assets in the Malawi banking sector, as at 31st December, 2014. Details of the shareholding of each of the Malawian commercial banks included in this study are indicated in Appendix III.

4.5.5 Number of Staff in Each Bank

The total number of staff employed in each respective commercial bank in Malawi is shown Table 4.4.

Table 4.4 : Number of Staff

Name of bank	Number of staff
National Bank	880
Standard Bank	756
NBS Bank	751
First Merchant	847
Malawi Savings	641
FDH Bank	376
Indebank	271
Nedbank	124
Ecobank	153
Opportunity Bank	700
Total	**5,499**

Source: Reserve Bank of Malawi, Financial Institution Supervision, Annual Reports.

The number of staff at the National Bank stood at 880, whilst it was 847 at First Merchant Bank, 756 at Standard Bank, 751 at NBS Bank and 700 at Opportunity Bank. Total employment at Malawi savings Bank was 641 whilst it stood at 376 at FDH Bank. Indebank, Nedbank and Ecobank employed 271, 124 and 153, respectively. The information in the Table 4.5.5 indicates that National Bank employed the highest number of staff. Of interest is First Merchant Bank which employed the second highest number of staff but it is the third largest bank. Standard Bank and NBS Bank employed the third and fourth highest number of staff, respectively. The banks which employed the lowest number of staff are Indebank, Ecobank and Nedbank.

4.5.6 Trend Analysis of ROA and Asset Quality

The trend of ROA and Asset Quality are indicated in Figure 4.5.

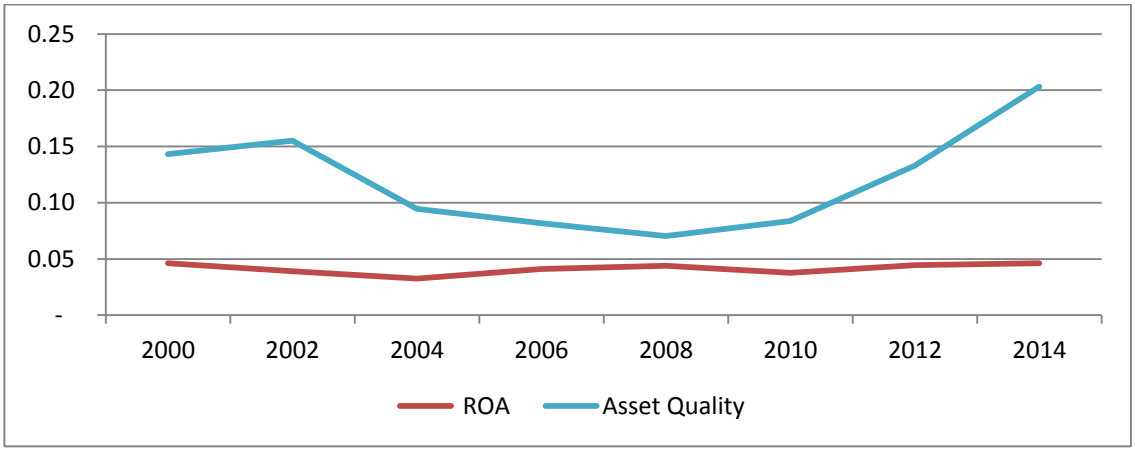


Figure 4.5: Trend of ROA and Asset Quality Source: Compiled by the Researcher

The Figure 4.5 shows that the ROA for the Malawi banking sector averaged 5% over the study period whilst the Asset Quality as measured by the NPL ratio rose from about 9% in 2000 to12% in 2002. The ratio improved to an average of 4% between 2005 and 2011. The NPL ratio in the banking sector deteriorated and rose steadily to about 16% by the close of 2014. The trend of the NPL ratio as reflected in the Figure 4.6 agrees with the observation made by the RBM (RBM, 2014).

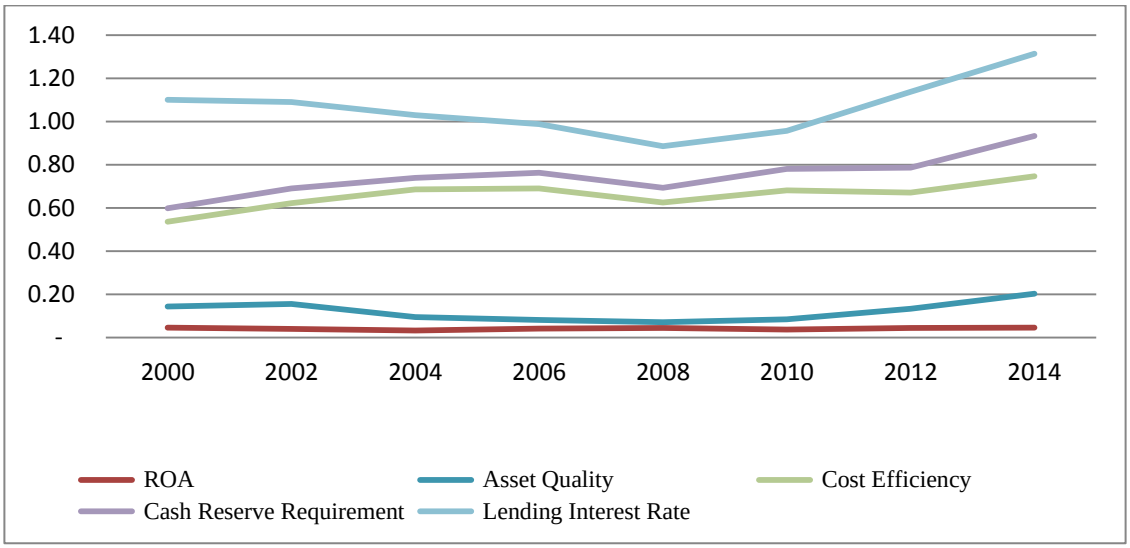


Figure 4.6: Trend of All Variables, Source**:** Compiled by the Researcher

Figure 4.6 provides an overview of the relative trend of all the variables included in this study. Notably, ROA and Asset Quality have already been discussed above. The Cost efficiency variable rose from about 47.2% in 2000 to 70% in 2004. Between 2004 and 2007, cost efficiency ratio averaged 65.0%. However, the ratio rose slightly between 2008 and 2014 from 65.5% to about 74.3%. The Cash reserve requirement followed a trend which is similar to the Cost efficiency ratio the only point of departure being that whilst cost efficiency ratio declined between 2008 and 2014, the cash reserve ratio rose over the same period. The Lending interest rate was high at 50.2% in 2000 but declined gradually to about 22.5% in 2006. Between 2007 and 2011, the lending interest rates were almost stable and only fluctuated within a narrow range of 17.0% and 19.6%. There was, however, a sharp rise in the lending rates between 2011 and 2014 when the lending interest rates soared to 35% in 2012 and increased further to an average of 38% by the close of 2014.

4.6 Results of Diagnostic Tests

In this section, the regression model indicated in Chapter 3 was estimated and the results are presented. According to Parramore and Watsham (1997), regression analysis tests the statistical strength of the model as hypothesized since they measure the relationships of dependent and independent variables. The regression coefficients indicate change in dependent variable associated with one unit increase in one independent variable, holding other independent variables constant (Studenmud, 2011).

There are a number of assumptions for ordinary least squares estimators which are that the regression model is linear, is correctly specified, and has an additive error term. The error term has a zero population mean. All explanatory variables are uncorrelated with the error term. Observations of the error term are uncorrelated with each other (i.e. no autocorrelation). The error term has a constant variance (i.e. no heteroskedasticity). No explanatory variable is perfect linear function of any other explanatory variables, meaning that there is no perfect multicollinearity and the error term is normally distributed (Studenmud, 2011).

The study carried out tests for normality, multicollinearity, autocorrelation and heteroscedasticity, which are presented below. The study also undertook a test for stationarity and Hausman test to check for random and fixed effects.

4.6.1 Normality Test

The study used one-sample Kolmogorov-Smirnov (K-S) and the Shapiro-Wilk Tests to determine if the data used was normally distributed.

4.6.1.1 Kolmogorov-Smirnov (K-S) Test

Under the K-S test, the hypotheses were as follows:

H_0: Data came from a normal distribution

H_1: Data did not come from a normal distribution

If the K-S test statistic is significant, then reject the null hypothesis; otherwise accept the alternative hypothesis that the data is non normal. The outcome of the tests is as shown in Table 4.5.

Table 4.5 : Kolmogorov-Smirnov (K-S) Test Results

	Null hypothesis	Test	Sig.	Decision
1	The distribution of ROA is normal with mean 0.033 and standard deviation 0.090.	One-sample Kolmogorov-Smirnov Test	.000	Reject the null hypothesis
2	The distribution of Asset Quality is normal with mean 0.083 and standard deviation 0.119.	One-sample Kolmogorov-Smirnov Test	. 000	Reject the null hypothesis
3	The distribution of Cost Efficiency is normal with mean 0.629 and standard deviation 0.305.	One-sample Kolmogorov-Smirnov Test	. 000	Reject the null hypothesis
4	The distribution of Cash Reserve Requirement is normal with mean 0.093 and standard deviation 0.071.	One-sample Kolmogorov-Smirnov Test	. 000	Reject the null hypothesis
5	The distribution of Lending Interest Rate is normal with mean 0.265 and standard deviation 0.087.	One-sample Kolmogorov-Smirnov Test	. 000	Reject the null hypothesis
6	The distribution of Real GDP Growth is normal with mean 0.043 and standard deviation 0.035.	One-sample Kolmogorov-Smirnov Test	. 000	Reject the null hypothesis

Asymptotic significances are displayed. The significance level is 0.05.

The outcome of the test for normality indicates that the data came from a sample which was not normally distributed. A further test on normality was carried out using the Shapiro-Wilk test.

4.6.1.2 Shapiro-Wilk Test

Under the Shapiro-Wilk Test, the hypotheses are as follows:

H_0: The observed distribution fits normal distribution.

H_1: The observed distribution does not fit normal distribution.

If the Shapiro-Wilk test statistic is significant, then reject the null hypothesis; otherwise accept the alternative hypothesis that the data is non normal. The results of the test are shown in Table 4.6

Table 4.6 : Shapiro-Wilk Test Results

Variable	Statistic	Df	Sig.
Return on Assets (ROA)	0.762	150	0.000
Asset Quality	0.570	150	0.000
Cost Efficiency	0.870	150	0.000
Cash Reserve Requirement	0.931	150	0.000
Lending Interest Rate	0.826	150	0.000
Real GDP growth	0.924	150	0.000

It was observed that in all cases, the Shapiro-Wilk Test statistic was significant at the 5% level, therefore the null hypothesis was rejected and it was affirmed that the data was not normally distributed. However, it was still considered reasonable and acceptable to work with the data for purposes of statistical interpretation. According to Mugenda and Mugenda (2003), the assumption of normality may be violated to a certain extent without serious implications on the accuracy of generalization of findings. Similarly, Ahmed (1999) clarified that non-normality is not a problem if some of the variables are weakly exogenous. In order to remedy any possible effects of non-normality, the study used Generalized Least Squares to compute goodness of fit tests, parameter estimates,

and standard errors for the overall regression model and the moderated regression model.

4.6.2 Stationarity Tests

The study carried out two stationarity tests namely the Harris-Tzavalis unit-root test and the Levin-Lin-Chu unit-root tests.

4.6.2.1 Harris-Tzavalis Unit-root Test

The study tested for stationarity using the Harris-Tzavalis unit-root test. Under this test, the hypotheses are as follows:

H_0: Panels contain unit roots.

H_1: Panels have no unit root i.e. stationary.

If the Harris-Tzavalis statistic is significant, then reject the null hypothesis; otherwise accept the alternative hypothesis.

Table 4.7: Harris-Tzavalis Test Results

Variable	Statistic (rho)	z-score	p-value	Decision
Return on Assets (ROA)	0.0899	-10.0511	0.000	Reject H_0
Asset Quality	-0.4504	-17.8555	0.000	Reject H_0
Cost Efficiency	-0.4232	-17.4639	0.000	Reject H_0
Cash Reserve Requirement	-0.3651	-16.6245	0.000	Reject H_0
Lending Interest Rate	-0.2970	-15.6407	0.000	Reject H_0
Real GDP Growth	-0.1131	-12.9839	0.000	Reject H_0

The findings in the Table 4.6 above indicated that Return on Assets (ROA) had a Harris-Tzavalis z-score of -10.0511; the Asset Quality had z-score of -17.8555; Cost efficiency yielded z-score of -17.4639; Cash Reserve Requirement yielded a z-score of -16.6245 and Lending Interest Rate had a z-score of -15.6407; whilst Real GDP Growth produced a z-score of -12.9839. All the variables posted a Harris-Tzavalis statistic outcomes were statistically significant at the 5% level. Therefore, the null hypothesis is rejected and the alternative hypothesis that the data was stationary, was accepted.

4.6.2.2 Levin-Lin-Chu Unit-Root Test

Under the Levin-Lin-Chu unit-root test, the hypotheses are as follows:

H_0: The data contains a unit root.

H_1: The data does not contain any unit root i.e. stationary.

If the Levin–Lin–Chu bias-adjusted t statistic is significant, then reject the null hypothesis; otherwise accept the alternative hypothesis.

Table 4.8 : Levin-Lin-Chu Unit-Root Test Results

Variable	Unadjusted t	Adjusted t	p-value	Significance (at 5% level)	Decision
Return on Assets	-8.1553	-2.9141	0.0018	Significant	Reject H_0
Asset Quality	-9.6737	-4.1792	0.0000	Significant	Reject H_0
Cost Efficiency	-7.8164	-2.6273	0.0043	Significant	Reject H_0
Cash Reserve Requirement	-7.3760	-2.1133	0.0173	Significant	Reject H_0
Lending Interest Rate	-12.4596	-6.7313	0.0000	Significant	Reject H_0
Real GDP Growth	-8.9756	-5.2229	0.0000	Significant	Reject H_0

The outcome of the Levin-Lin-Chu unit-root test confirmed the earlier results obtained under the Augmented Harris-Tzavalis test and indicated that the data was stationary in all cases, under both tests.

4.6.3 Multicollinearity Test

The study tested for muticollinearity using the VIF (Variance Inflation Factor) which quantifies the severity of multicollinearity in an ordinary least squares. It provides an index that measures how much the variance (the square of the estimate's standard deviation) of an estimated regression coefficient is increased because of collinearity. According to Myers (1990), a VIF greater than 10 is a cause of concern. If the VIF value lies between 1-10, then there is no multicollinearity. If the VIF < 1 or > 10, then there is multicollinearity. The Table 4.7 below gives the outcome of the test.

Table 4.9 : VIF Test Results

Model	Collinearity Statistics	
	Tolerance	VIF
Asset Quality	0.164	6.101
Cost efficiency	0.250	3.995
Cash Reserve Requirement	0.268	3.733
Lending Interest Rate	0.179	5.580

a. Dependent Variable: ROA

Based on the coefficients output, collinearity statistics, obtained VIF values of 6.101, 3.955, 3.733 and 5.58, respectively, which implies that the VIF values obtained are between 1 and 10. It was, therefore, concluded that there were no multicollinearity symptoms.

4.6.4 Test for Autocorrelation - Durbin-Watson Test

The study carried out the Durbin-Watson (D-W) test to check for test for autocorrelation. The study tested for positive autocorrelation. To test for positive autocorrelation at significance α, the test statistic d is compared to lower and upper critical values ($d_{L,\alpha}$ and $d_{U,\alpha}$):

- If $d < d_{L,\alpha}$, there is statistical evidence that the error terms are positively autocorrelated.
- If $d > d_{U,\alpha}$, there is no statistical evidence that the error terms are positively autocorrelated.
- If $d_{L,\alpha} < d < d_{U,\alpha}$, the test is inconclusive.

The test posted a Durbin-Watson statistic of d = 1.251, which is below the two critical values of d_L:1.68 and d_U:1.79 and it was concluded that there was positive first order linear auto-correlation in the data. To correct the problem, the study used GLS method which corrects the problem of autocorrelation.

4.6.5 Heteroskedasticity Test - Glejser Test

The study used the Glejser Test to test for heteroscedasticity. Under the Glejser test, the hypotheses are as follows:

H_0: The is no problem of heteroscedasticity

H_1: There is a problem of heteroscedasticity

If the test statistic is statistically significant, then reject the null hypothesis; otherwise accept the alternative hypothesis. Provided in Table 4.10 are the results of regression of the absolute residual value (ARV) on the independent variables.

Table 4.10 : Outcome of Regressing Independent Variables on Absolute Residual Values

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.019	.008		2.247	.026
	AQ	.039	.019	.169	2.074	.040
	CER	.016	.008	.180	2.150	.033
	CRR	.012	.033	.031	.367	.714
	LIR	.003	.026	.008	.103	.918

a. Dependent Variable: Absolute Residual Value (ARV)

The regression equation is ARV = 0.019 + 0.039*AQ + 0.016*CER + 0.012*CRR + 0.003*LIR; where: ARV is Absolute Residual Value; AQ is Asset Quality; CER is Cost Efficiency; CRR is Cash Reserve Requirement; and LIR is Lending Interest Rate. This model fitted the data satisfactorily (F = 2.740, p < -0.031 and R-square = 0.70). The results summarized above indicate that the output coefficients for Asset Quality variable posted a sig. value of 0.040, Cost Efficiency reported sig. value of 0.033, Cash Reserve Requirement had sig. value of 0.714 and Lending Interest Rate posted sig. value of 0.918, respectively. It is observed that Asset Quality and Cost Efficiency variables were statistically significant at the 5% level. It was, therefore, concluded that heteroscedasticity problem existed.

Goldberger (1964) argues that the existence of heteroscedasticity is a major concern in the application of regression analysis as it can invalidate statistical tests of significance that assume that the modelling errors are uncorrelated and uniform, hence that their variances do not vary with the effects being modeled. For instance, while the ordinary

least squares estimator is still unbiased in the presence of heteroscedasticity, it is inefficient because the true variance and covariance are underestimated. This study, therefore, estimated the model using the GLS. GLS model has the advantage that it corrects the problem of heteroscedasticity. According to Athanasoglou, Delis and Staikouras (2006), the GLS method uses cross-section weights for every observed bank i at time t, and the true variance components, in order to produce a matrix-weighted average of the within and the between (which is obtained by regressing the cross section averages across time) estimators.

4.6.5 Hausman Test - Random and Fixed Effects

Noting the presence of heteroscedasticity in the panel data, the study carried out the Hausman test to check for fixed effects and random effects. The objective of carrying out the Hausman test was to determine the appropriate model to be used. The hypotheses are as follows:

H_0: Difference in coefficients is not systematic (i.e. random effects exist)

H_1: Difference in coefficients is systematic (i.e. there are fixed effects)

If the test statistic is significant, then reject the null hypothesis; otherwise accept the alternative hypothesis. The results of the Hausman test are shown in the Table 4.11.

Table 4.11 : Hausman Test Results

	(b) Fixed Group	(B) Random Group	(b-B) Difference	Std. Error
Asset Quality	-.1048018	-.1002805	-.0045213	.0070457
Cost Efficiency	-.2175512	-.2251243	.0075731	.0050975
Cash Reserve Requirement	-.0579191	-.0937173	.0357983	.0164129
Lending Interest Rate	.0859527	.0870392	-.0010865	-

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 5.49

Prob>chi2 = 0.2404

(V_b-V_B is not positive definite).

From the above test, the following results were obtained: chi2 = 5.49 and Prob>chi2 = 0.2402. Based on the reported outcome, we retained the null hypothesis that difference in coefficients was not systematic. Hence, we concluded that there were random effects. According to Hausman (1978), random effect models can be estimated by GLS.

4.7 Correlation Analysis

The study carried out a correlation analysis among the variables used in the study. Correlation test is used to determine the level of the relationship between the study variables. Pearson Product Moment Correlation suitable for research data in the form of a ratio. Pearson Product Moment correlation test can produce a correlation coefficient that shows: the relationship, the degree of relationship, and the direction of the relationship (positive or negative).

If the Sig. < 0.05, it means that there is a significant relationship between the variables of the study. If the value of Sig. > 0.05, it implies that there is no significant relationship between the variables of the study.

The degree of relationship between variables can be based on the value of Pearson Correlation and interpreted as follows: If the value of Pearson Correlation ranges from 0.00 to 0.20, it means that there is almost no correlation. If the value of Pearson Correlation 0.21 to 0.40, it implies that there is a low correlation. If the value of Pearson Correlation is in the rage of 0.41 to 0.60, it signifies that there is moderate correlation being. If the value of Pearson Correlation is from 0.61 to 0.80, it means that there is high correlation. If the value of value Pearson Correlation ranges from 0.81 to 1.00, it signifies perfect correlation. Given in the Table 4.12 is the outcome of the correlation analysis.

Table 4.12: Results of Correlation Analysis

		Return on Assets (ROA)	Asset Quality	Cost Efficiency	Cash Reserve Requirement	Lending Interest Rate	Economic Growth
Return on Assets (ROA)	Pearson Correlation	1					
	Sig. (2-tailed)						
Asset Quality	Pearson Correlation	.546*	1				
	Sig. (2-tailed)	.035					
Cost Efficiency	Pearson Correlation	-.788**	-.441	1			
	Sig. (2-tailed)	.000	.100				
Cash Reserve Requirement	Pearson Correlation	-.067	.574*	.297	1		
	Sig. (2-tailed)	.812	.025	.282			
Lending Interest Rate	Pearson Correlation	.572*	.697**	-.813**	-.018	1	
	Sig. (2-tailed)	.026	.004	.000	.948		
Gross Domestic Product	Pearson Correlation	-.159	-.291	.529*	.220	-.700**	1
	Sig. (2-tailed)	.571	.293	.043	.431	.004	

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

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

Based on output of Table 4.12, correlations obtained sig. (1-tailed) of 0.035 <0.05 between Asset Quality and ROA, it can be concluded that there is a significant relationship between Asset Quality and ROA. In addition, Pearson correlation values obtained for 0.546, so it can be concluded that the Asset Quality was correlated with ROA.

Correlations obtained sig. (1-tailed) of 0.035 <0.05 between Asset Quality and ROA, it can be concluded that there is a significant relationship between Asset Quality and ROA. In addition, Pearson correlation values obtained for 0.546, so it can be said that the Asset Quality being correlated with ROA positively.

Correlations obtained sig. (2-tailed) of 0.000 <0.01 between Cost of Efficiency and ROA, it can be concluded that there is a significant relationship between Cost of Efficiency and ROA. In addition, Pearson correlation values obtained for -0.788, so it can be said that the cost of efficiency is highly correlated with ROA negatively.

Correlations obtained sig. (1-tailed) of 0.025 <0.05 between Asset Quality and Cash reserve ratio, it can be concluded that there is a significant relationship between Asset Quality and cash reserve ratio. In addition, Pearson correlation values obtained for 0.574, so it can be said that the Asset Quality being correlated with cash reserve ratio positively.

Lending Interest Rate is correlated positively with ROA sig. (1-tailed) of 0.026 <0.05 Pearson value of 0.576, highly positively correlated with Asset Quality sig. (2-tailed) of 0.004 <0.01 Pearson value of 0.697 and highly negatively correlated with cost of efficiency sig. (2-tailed) of 0.000 <0.01 Pearson value of -0.813.

Economic Growth is correlated positively with cost of efficiency sig. (1-tailed) of 0.043 <0.05 Pearson value of 0.529 and highly negatively correlated with average lending rate sig. (2-tailed) of 0.000 < 0.01 Pearson value of -0.700.

From the foregoing analysis, it can be concluded that average lending rate is the factor that is mostly correlated with other factors.

4.8 Regression Results for each Variable and Overall Results for All Banks

The study estimated regression models based on the pooled data for all the ten commercial banks in Malawi. The first part of the section presents results from regressions that were estimated between the dependent variable and each of the independent variables separately, for the pooled data. The second part presents results based on the pooled data for the whole banking sector.

4.9 Regression Model of Asset Quality on ROA

The following regression model was estimated: ROA = $\beta_o + \beta_1 * AQ + \varepsilon$ where ROA is bank performance; AQ is Asset Quality and ε is the error term. Upon estimating the model, the following equation was obtained: ROA = 0.049 - 0.13*AQ. A discussion of the estimation results is provided in Table 4.13.

Table 4.13 : Regression results of Asset Quality on ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.746[a]	.599	.445	.00786

a. Dependent variable: ROA

b. Predictors: (Constant), Asset Quality

The results of the linear regression between ROA and Asset Quality posted an R of 0.746 implying a strong linear relationship between the dependent variable, ROA, and the explanatory variable, Asset Quality. The coefficient of determination, R^2 of 0.599 indicated that 59.9% of the variation in the dependent variable (ROA) was explained by the independent variable in the model.

Table 4.14 : Analysis of Variance (ANOVA)[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	1	.000	5.534	.035[b]
	Residual	.001	13	.000		
	Total	.001	14			

a. Dependent Variable: Return on Assets (ROA)

b. Predictors: (Constant), Asset Quality

Table 4.14 shows the results of ANOVA test which reveal that Asset Quality has a significant effect on performance of banks in Malawi. Since the P-value actual = 0.035 which is less than 5% level of significance. This implies that linear regression model ROA = $\beta_o + \beta_1 * AQ + \varepsilon$ was significant.

Table 4.15 : Coefficients from regression of Asset Quality on ROA

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.049	.004		9.013	.000
	Asset Quality	-0.13	.051	-.546	-2.353	.035

a. Dependent variable: ROA

b. Predictors: (Constant), Asset Quality

The Table 4.15 shows that Asset Quality as measured by NPL ratio had a beta coefficient of -0.13 and was statistically significant at the 5% level. This implies that an increase in NPL ratio by 1% (or indeed a deterioration of asset quality by 1%) resulted in a 13% decline in ROA. This outcome agrees with a study by Flamini et al (2009) who found that, among other determinants, asset quality, had a significant effect on ROA in Sub-Saharan banks.

4.9.1 Scatter Diagram of Asset Quality on ROA

Figure 4.7 below shows below the results of NPL ratio on the performance of commercial banks in Malawi in a scatter diagram. The scatter diagram indicates a negative gradient which is an indication that NPL ratio has a negative effect on bank performance.

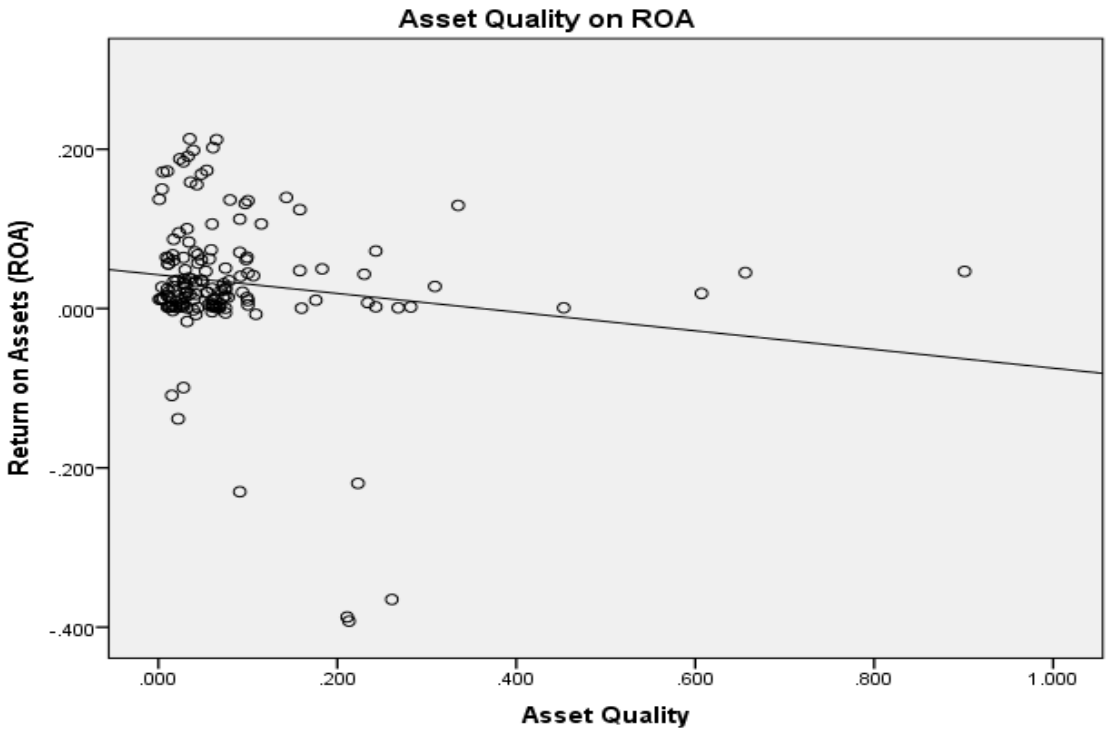


Figure 4.7 : Scatter Diagram of Asset Quality on ROA

Figure 4.7 shows the results of NPL ratio on the performance of commercial banks in Malawi in a scatter diagram. The scatter diagram indicates a negative gradient which is an indication that NPL ratio has a negative effect on the performance of banks in Malawi.

4.10 Regression Model of Cost Efficiency on ROA

The following regression model was estimated: ROA = $\beta_0 + \beta_1$*CER + ε where ROA is bank performance; CER is Cost Efficiency and ε is the error term. The following equation was obtained: ROA = 0.098 - 0.094*CER. A discussion of the estimation results is provided in Table 4.16.

Table 4.16 : Regression Results of Cost Efficiency on ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.888[a]	.721	.592	.00578

a. Predictors: (Constant), Cost Efficiency

In the Table 4.16, the results of the linear regression between ROA and Cost Efficiency had an R of 0.888 implying that there is a strong linear relationship between the Cost Efficiency and bank performance, as measured by the ROA, in the Malawi banking sector. It is also observed that the R^2 of 0.592 indicated that 59.2% of the variation in the dependent variable (ROA) was explained by the independent variable in the model.

Table 4.17 : Analysis of Variance (ANOVA)[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.001	1	.001	21.272	.004[b]
	Residual	.000	13	.000		
	Total	.001	14			

a. Dependent Variable: Return on Assets (ROA)

b. Predictors: (Constant), Cost Efficiency

Table 4.17 shows the results of ANOVA test which reveal that Cost Efficiency has a significant effect on performance of banks in Malawi. Since the P value actual 0.004 which is less than 5% level of significance. This implies that linear regression model was significant.

Table 4.18 : Coefficients from Regression of Cost Efficiency on ROA

Model		Unstandardised Coefficients		Standardised Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	.098	.011		8.739	.000
	Cost Efficiency	-0.094	.020	.788	-4.612	.004

a. Dependent Variable: Return on Assets (ROA)

The Table 4.18 shows that Cost Efficiency had a beta coefficient of -0.094 and was higly significant at the 1% level. The outcome implies that an increase in the cost-to-income ratio, due to say lack of robust cost controls in the banks, results in a reduction in the

financial return of the commercial banks in Malawi by 9.4%. This result concurs with the finding of Olweny and Shipho, (2011) who found that bank-specific factors, including operational cost efficiency, had a negative and statistically significant effect on profitability of banks in Kenya.

4.10.1 Scatter Diagram of Cost Efficiency vs ROA

Figure 4.8 shows the results of Cost Efficiency on the performance of commercial banks in Malawi in a scatter diagram. The scatter diagram indicates a negative gradient which is an indication that Cost Efficiency has a negative effect on bank performance.

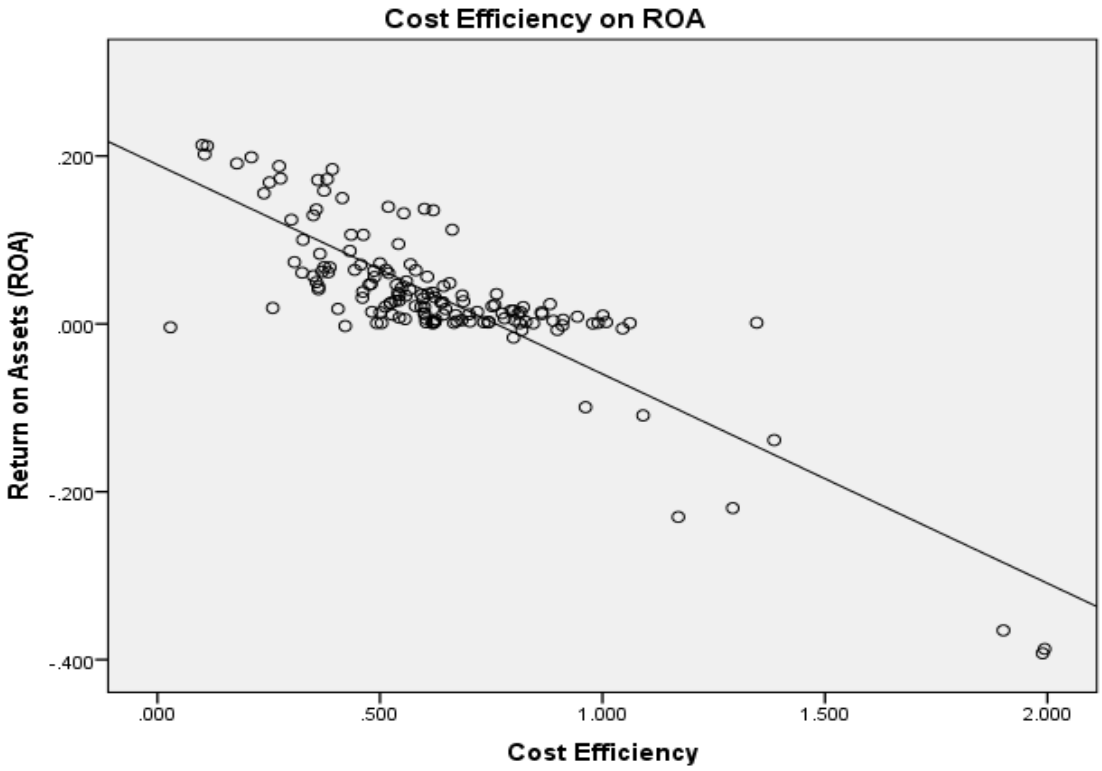


Figure 4.8 : Scatter Diagram of Cost Efficiency on ROA

Figure 4.8 shows below the results of Cost Efficiency on the performance of commercial banks in Malawi in a scatter diagram. The scatter diagram indicates a negative gradient which is an indication that there is a negative relationship between Cost Efficiency and ROA.

4.11 Regression Model of Cash Reserve Ratio on ROA

The following regression model was estimated: ROA = $\beta_0 + \beta_1$*CRR + ε where ROA is bank performance; CRR is Cash Reserve Ratio and ε is the error term. Upon estimating the model, the following equation was obtained: ROA = 0.048 - 0.015*CRR. A discussion of the estimation results is provided in Table 4.19.

Table 4.19: Regression Results of Cash Reserve Requirement on ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.567[a]	.405	.372	.009372

a. Predictors: (Constant), Cash Reserve Requirement

The results of the linear regression between ROA and Cash Reserve Ratio posted an R of 0.567 implying that there was a linear relationship between the Cost Efficiency and bank performance in the Malawi banking sector. In this model, the value of R^2 was 40.5%. This means that 40.5% of the variations in the dependent variable (ROA) was explained by the independent variable, Cash Reserve Ratio.

Table 4.20 : Analysis of Variance (ANOVA)[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	1	.000	0.059	.812[b]
	Residual	.002	13	.000		
	Total	.003	14			

a. Dependent Variable: Return on Assets (ROA)

b. Predictors: (Constant), Cash Reserve Requirement.

Table 4.20 shows the results of ANOVA test which reveal that Cost Efficiency has a significant effect on performance of banks in Malawi. Since the P-value actual posted 0.0093 which is less than 5% level of significance. This implies that linear regression model was significant.

Table 4.21 : Coefficients from Regression of Cash Reserve Requirement on ROA

Model		Unstandardised Coefficients		Standardised Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	.048	.006		8.195	.000
	Cash Reserve Ratio	-0.015	.061	-0.067	-0.243	.812

a. Dependent Variable: Return on Assets (ROA)

The Table 4.21 shows that Cash Reserve Requirement had a beta coefficient of -0.015 but was not statistically significant. This result indicates that cash reserve ratio requirement has no significant effect on the financial return of commercial banks in

Malawi. This outcome supports the findings of Meltzer (2003), Chandler (1971) and Wilcox (2012) who found that changes in reserve requirements had only small and statistically insignificant impacts on bank loans and investments, hence, overall performance.

4.11.1 Scatter Diagram of Cash Reserve Requirement on ROA

Figure 4.9 shows the results of Cash Reserve Requirement on the performance of commercial banks in Malawi in a scatter diagram. The scatter diagram indicates a negative gradient which is an indication that Cash Reserve Requirement has a negative effect on bank performance in Malawi.

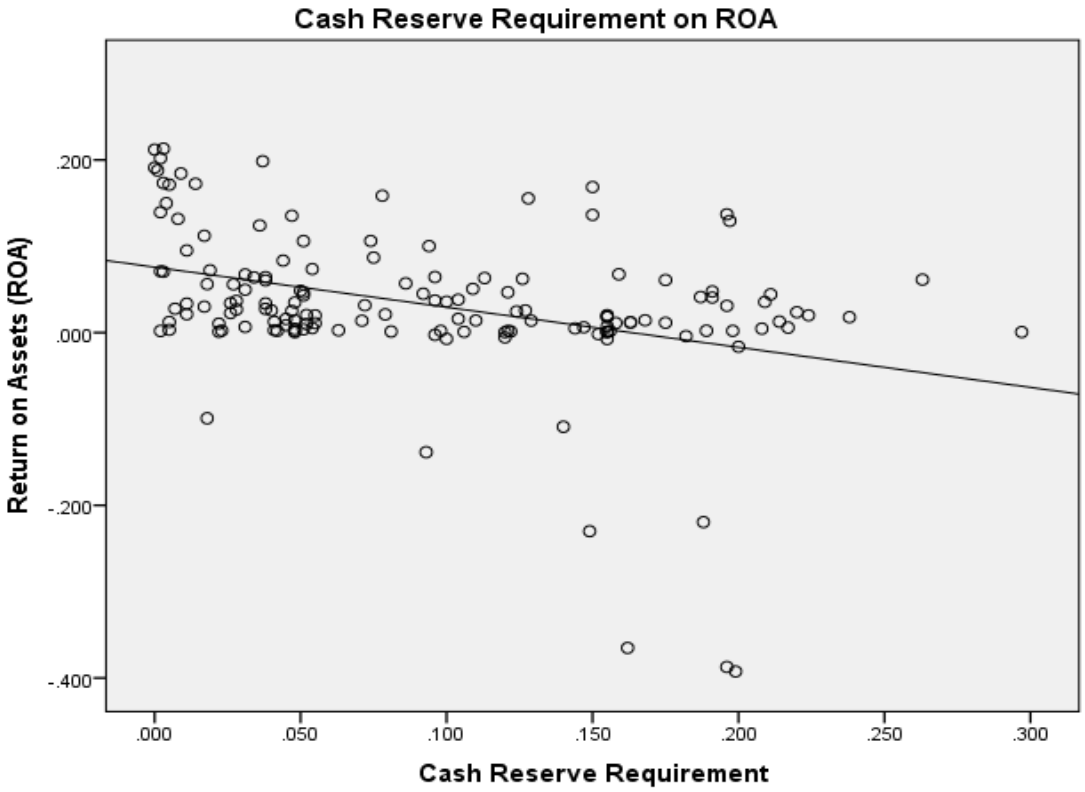


Figure 4.9: Scatter Diagram of Cash Reserve Requirement on ROA

Figure 4.9 shows the results of Cash Reserve Requirement on the performance of commercial banks in Malawi in a scatter diagram. The scatter diagram indicates a negative gradient which is an indication that Cash Reserve Requirement has a negative effect on bank performance in Malawi.

4.12 Regression Model of Lending Interest Rate on ROA

The following regression model was estimated: ROA = $\beta_o + \beta_1$*LIR + ε where ROA is bank performance; LIR is Lending Interest Rate and ε is the error term. The following equation was obtained: ROA=0.032 + 0.048*LIR. A discussion of the estimation results is provided in Table 4.22.

Table 4.22: Regression Results of Lending Interest Rate on ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.772[a]	.628	.576	.007701

a. Predictors: (Constant), Lending Interest Rate

The results of the linear regression between ROA and Lending Interest Rate indicate an R of 0.772 implying that there is a linear relationship between the Lending Interest Rate and bank performance in the Malawi banking sector. The value of R^2 was 0.628. That meant that 62.8% of the variation in the dependent variable (ROA) was explained by the independent variable in the model i.e. Lending Interest Rate.

Table 4.23: Analysis of Variance (ANOVA)[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.000	1	.000	6.338	.026[b]
	Residual	.001	13	.000		
	Total	.001	14			

a. Dependent Variable: Return on Assets (ROA)

b. Predictors: (Constant), Lending Interest Rate

Table 4.23 shows the results of ANOVA test which reveal that Lending Interest Rate had a significant effect on performance of banks in Malawi since the P-value actual was 0.026 which indicates that linear regression model was significant at the 5% level of significance.

Table 4.24: Coefficients from Regression of Lending Interest Rate on ROA

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	.032	.006		5.304	.000
	Average Lending Rate	.048	.019	0.572	2.517	.026

a. Dependent Variable: Return on Assets (ROA)

The Table 4.24 shows that Lending Interest Rate had a beta coefficient of 0.048 and was statistically significant at the 5% level. This indicates that an increase in the Lending Interest Rate by 1%, due to say, decisions of the monetary authorities, resulted in an increase in the financial return of commercial banks in Malawi by 4.8%. This outcome agrees with Flannery (1980) who studied banks in the USA; and Okoye and Onyekachi (2013) who examined the Nigerian banks and found that lending interest rates were drivers of bank performance.

4.12.1 Scatter Diagram of Lending Interest Rate on ROA

Figure 4.10 shows the results of Average Lending Rate on the performance of commercial banks in Malawi in a scatter diagram. The scatter diagram indicates that the gradient is an indication that Lending Interest Rate has a positive effect on bank performance in Malawi.

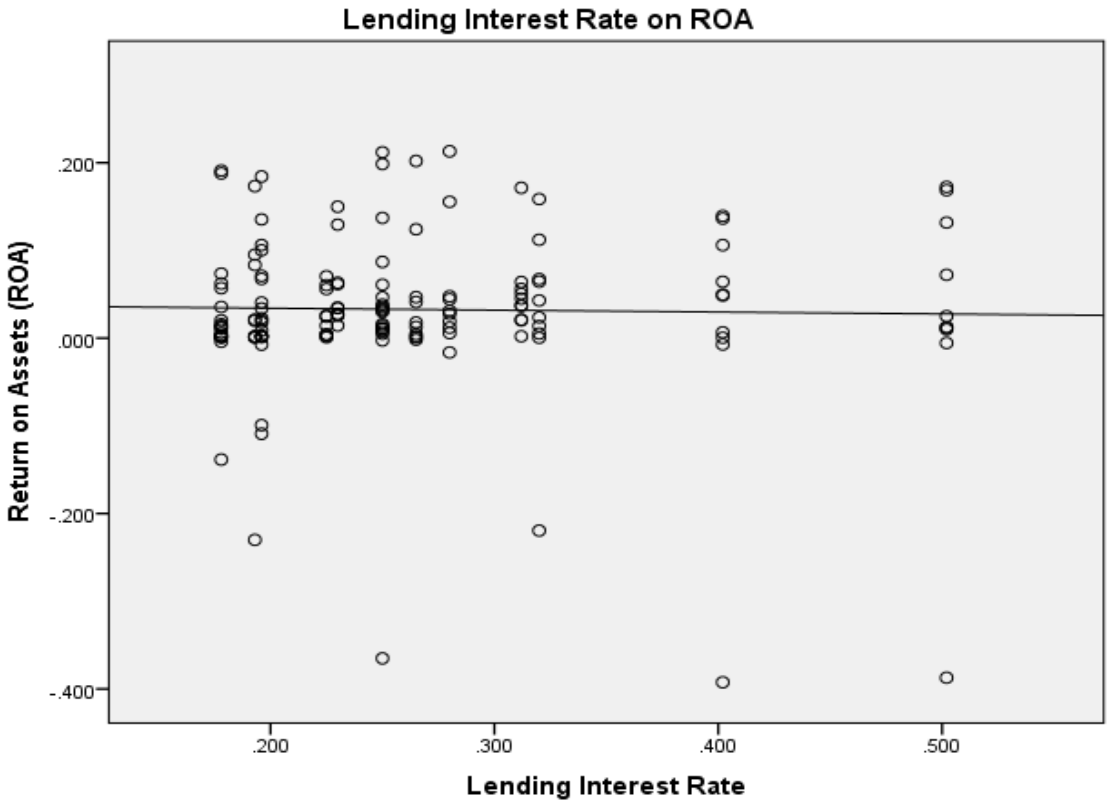


Figure 4.10: Scatter Diagram of Lending Interest Rate on ROA

Figure 4.10 shows below the results of Lending Interest Rate on the performance of commercial banks in Malawi in a scatter diagram. The scatter diagram indicates a positive gradient which is an indication that Lending Interest Rate had a positive effect on bank performance in Malawi.

4.13 Overall Regression Analysis

This Section presents the outcome of the GLS regression that was run between the dependent variable and all the explanatory variables. The regression model shows the linear relationship between the dependent variable and the independent variables. The study estimated the following GLS model: $P = \beta o + \beta_1 *AQ + \beta_2 *CER + \beta_3 * CRR + \beta_4 *LIR + \varepsilon$ as explained in Chapter 3. The model was estimated and it yielded the following equation:

P = 0.1569 - 0.090*AQ - 0.2117*CER - 0.1356*CRR + 0.1081*LIR. Provided in Table 4.25 is the analysis and interpretation of the equation.

Table 4.25 : Results from GLS regression model

R^2 within	R^2 between	R^2 Overall	F	p-value
.6269	.8751[a]	.7520	57.39	.000

a. Predictors: (Constant), Asset Quality, Cash Reserve Requirement, Cost Efficiency, Lending Interest Rate

The results of the GLS model shown in Table 4.25 indicate that the overall coefficient of determination R^2 was 0.7520 which means that the independent variables explained 75.2% of the variations in the dependent variable. This is an indication that there is a strong relationship between the dependent variable, bank performance as measured by Return on Assets, and independent variables in the Malawian banking sector. The results further show that F=57.39 and P-value = 0.000 which is less than 5%. This indicates that the overall model was statistically significant and also implies that collectively the variables Asset Quality, Cost Efficiency, Cash Reserve Requirement and Lending Interest Rate had a significant effect on the performance of commercial banks in the Malawian banking sector.

Table 4.26: Coefficients from Regression of the Overall GLS Model

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
AQ	-0.0900	0.0293	-3.07	0.002	-0.147	-0.032
CER	-0.2117	0.0134	-15.76	0.000	-0.238	-0.185
CRR	-0.1356	0.0462	-2.93	0.087	-0.201	0.014
LIR	0.1081	0.0362	2.99	0.022	0.013	0.179
Constant	0.1569	0.0127	12.34	0.000	0.131	0.181

a. Dependent Variable: Return on Assets (ROA)

b. Predictors: (Constant), AQ, CER, CRR, LIR.

The Table 4.26 gives a summary of the regression results on the effect of all the independent variables on the dependent variable.

4.14 Interpretation of the Results

This section gives an interpretation of the findings from the unmoderated GLS model.

4.14.1 Effect of Asset Quality on the Performance of Malawian Banks

The Asset Quality as measured by the NPL Ratio had a beta coefficient of -0.090 meaning that it was negatively related to financial performance. An increase in the NPL ratio (which connotes deterioration of the Asset Quality) by, say, 1%, resulted in a decline of financial performance of banks in Malawi, as measured by the return on assets (ROA), by 9.0%. The results further show that Asset Quality is significant at 1% level. This result demonstrates that as non-performing loans increase (which implies a deterioration of Asset Quality), the commercial banks in Malawi are required to make loan loss provisions for them. Since the provisions are charged against the bottom-line of the profit and loss account, the profitability of the commercial banks is adversely affected, hence the negative relationship. The null hypothesis that Asset Quality has no effect on the financial performance of banks is therefore rejected and we accept the

alternative hypothesis that Asset Quality had a significant effect on bank performance in the Malawian banking sector.

This outcome is in line with several studies including those which were carried out by Lata (2014) who found out that non-performing loans had an adverse effect on the banks in Bangladesh. The outcome also concurs with Roy (2015) who found that non-performing loan is one of the major factors of influencing banks profitability and it is statistically significant with a negative effect on net profit margin of listed banks in Dhaka. The result also supports Muasya (2008) who found that non-performing loans adversely affected the performance of banks in Kenya. Additionally, the results confirm the study by Li and Zou (2014) who found that NPL ratio had a significant effect on return on assets (ROA) in European banks. The result also agrees with theory which postulates a negative relationship between NPLs and bank performance.

4.14.2 Effect of Cost Efficiency on the Performance of Malawian Banks

The study found that Cost Efficiency had a beta coefficient of -0.2117 meaning that this variable was negatively related to bank performance. In this regard, an increase in the Cost Efficiency ratio by 1%, resulted in a decline of financial performance of banks in Malawi, as measured by the return on assets (ROA), by 21.17%. The findings also indicate that Cost Efficiency is significant variable at the 1% level. This indicates that for the commercial banks in Malawi, overheads and operating expenses rose proportionately higher than income. Additionally, the outcome indicates that the costs and expenses were not necessarily focused on activities that improved the bottom line of the bank. This situation led to a reduction in net income, hence performance as measured by the ROA. Therefore, the null hypothesis that Cost efficiency has no effect on the financial performance of banks is rejected and we accept the alternative hypothesis that Cost Efficiency has an effect on bank performance in the Malawian banking sector.

The result is similar the findings by studies carried out by Karim et al (2010) who found that that poor management in the banking institutions resulted in bad quality loans, escalated the level of non-performing loans and adversely affected the performance of banks in Singapore. Additionally, the results concur with those obtained from a study which was undertaken by Munyambonera (2013) who found that operational efficiency (cost/income) is significant and negatively affect bank profitability. A study by Berger and DeYoung (1997) also came up with a similar outcome. The result concurs with theory which hypothesizes a negative relationship between NPLs and bank performance. Increasing costs and expenses eat into the profitability of the banks.

4.14.3 Effect of Cash Reserve Requirement on Performance of Malawian Banks

Cash Reserve Requirement was found to have a beta coefficient of -0.1356, implying a negative relationship with bank profitability. This implied that an increase in the Cash Reserve Requirement by 1%, due to say, decisions of the monetary authorities, resulted in a decline in the financial return of commercial banks in Malawi by 13.56%. This variable is, however, not statistically significant. This means that Cash Reserve Requirement did not have an effect on the performance of commercial banks in Malawi. The null hypothesis that Cash Reserve Requirement has no effect on the financial performance of banks in the Malawian banking sector is therefore accepted.

The outcome concurs with Meltzer (2003) who found that cash reserve requirements had little or no impact on bank's capacity to create loans, hence, profitability. The results also agree with Chandler (1971) and Wilcox (2012) who found that changes in reserve requirements had only small and statistically insignificant impacts on bank loans and performance. The outcome, however, contradicts the study of Chika (2014) and Ajayi and Atanda (2012) also found that cash reserves ratio (and liquidity ratio) exerted negative and significant effect on banks total credit, hence profitability, in Nigeria.

4.14.4 Effect of Lending Interest Rate on Performance of Malawian Banks

The Lending Interest Rate had a beta coefficient of 0.1081 meaning that there was a positive relationship between this explanatory variable and ROA. An increase in the Lending Interest Rate by 1%, resulted in an increase in the financial return of commercial banks in Malawi by 10.81%. The outcome also indicated that the variable was highly statistically significant at the 1% level. This result means that when lending interest rate rises, it enhances the profit margin which the banks realize by way of increased net interest income. This then feeds into the positive overall profitability of the banks. Therefore, the null hypothesis that Lending Interest Rate has no effect on the financial performance of banks is rejected and we accept the alternative hypothesis that Lending Interest Rate has an effect on bank performance in the Malawian banking sector.

This finding is consistent to the study of Borio et al (2011) who found a positive relationship between the level of (short-term) interest rates and the slope of the yield curve, on the one hand, and bank profitability – return on assets – on the other. The results also concur with those of Khan (2014) who found that in Pakistan there is strong and positive correlation between interest rate and commercial banks' profitability meaning if the value of interest rate is increased/decreased then as result, value of bank profitability also increased/decreased.

4.15 Moderated Regression Analysis

The study carried out a moderated regression analysis in line using the methodology which is outlined in Chapter 3. The regression model which was estimated is one whereby each of the independent variables are multiplied by the economic growth as measured by growth in GDP.

The model was as follows: $P = \beta o + \beta_1 AQi*GDP + \beta_2 CERi*GDP + \beta_3 CRRi*GDP + \beta_4 LIRi*GDP + \varepsilon$ as defined in Chapter 3. Upon estimating the model, the following equation was obtained:

P = 0.0431 + 0.2375*AQGDP - 1.8265*CERGDP + 1.1367*CRRGDP + 3.2801*LIRGDP. Provided in Table 4.27 is the analysis and interpretation of the equation.

Table 4.27: Moderated GLS Regression Model Results

R^2 within	R^2 between	R^2 Overall	F	p-value
.7241	.8986	.8335	63.53	.000

a. Dependent Variable: Return on Assets (ROA)

b. Predictors: (Constant), AQGDP, CERGDP, CRRGDP, LIRGDP

The results of the moderated GLS regression model shown in Table 4.25 indicate that the overall coefficient of determination R^2 was 0.8335 which means that the independent variables explained 83.35% of the variations in the dependent variable. This is an indication that there is a strong relationship between the dependent variable, bank performance as measured by Return on Assets, and independent variables in the Malawian banking sector. The results further show that F=14.93 and P-value = 0.000 which is less than 5%. This indicates that the moderated model is statistically significant. It further implies that the variables had a significant effect on the performance of commercial banks in the Malawian banking sector when the economic growth variable was taken into account.

Table 4.28: Coefficients of the Moderated Regression Model

ROA	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
AQGDP	0.237506	0.737684	0.32	0.747	-1.20833	1.683339
CERGDP	-1.82652	0.308528	-5.92	0.000	-2.43122	-1.22181
CRRGDP	1.136703	1.028114	1.11	0.269	-0.87836	3.15177
LIRGDP	3.280086	0.671347	4.89	0.000	1.96427	4.595902
_cons	0.043127	0.005783	7.46	0.000	0.031793	0.054461

a. Dependent Variable: Return on Assets (ROA).

b. Predictors: (Constant), AQGDP, CERGDP, CRRGDP, LIRGDP

The Table 4.28 provides a summary of the regression results on the effect of all the independent variables on the dependent variable.

4.16 Interpretation of the Moderated Regression Results

This section provides an interpretation of the results from the moderated regression model. The first part provides the outcome of the fifth objective of the study which was to investigate whether economic growth, as a moderating variable, does have an influence on the effect of NPL and other factors on the financial performance of banks in the Malawian banking sector. The second part of the section discusses the results of each variable under the moderated regression equation.

4.16.1 Influence of Economic Growth, as a Moderating Variable, on the effect of Micro and Macro-economic Factors on Performance of Banks in Malawi

Table 4.29 : Comparison of Unmoderated and Moderated Models

Statistic	Unmoderated model	Moderated model
Overall R^2	0.7520	0.8335
F-statistic	57.39	63.53
P-value	0.000	0.000

The results from the Table 4.29 indicate that the overall R^2 for the moderated regression had a bigger value (0.8335) than the unmoderated regression model (0.7520). Additionally, the F-statistic for the moderated regression model posted a higher value, 63.53, than that of the unmoderated model which posted a value of 57.39. It was, therefore, be concluded that although both models were statistically significant, the moderated model posted a higher explanatory power and better fit than the unmoderated regression model. This indicates that the moderating variable, Economic Growth, has a significant influence on the effect of micro and macro-economic determinants on the financial performance of commercial banks in Malawi.

4.16.2 Discussion of the Results from Moderated Regression Model

AQGDP had a beta coefficient of 0.237 (compared to coefficient of -.090 for unmoderated model) meaning that AQGDP had positive relation to ROA such that an increase in the moderated AQGDP by 1% was associated with an increase in the financial performance of banks in Malawi, as measured by the return on assets (ROA), of 23.7%. The AQGDP variable was, however, non-significant implying that this variable did not have an effect on the performance of banks in Malawi. This meant that when economic growth is taken into account, the negative effect of NPLs on the performance of banks in Malawi is rendered non-significant.

This outcome agrees with the findings of Khemraj and Pasha (2009) who found that economic growth results in an improvement in the real economy which translates into better asset quality. The findings also concur with those of Rajan and Dhal (2003) who studied commercial banks in India. The finding further agrees with Bashir, (2001), Salas and Suarina (2002).

CERGDP had a beta coefficient of -1.826 (compared to coefficient of -0.211 for unmoderated model) meaning there was a negative relationship with bank performance. Therefore, an increase in the moderated Cost Efficiency ratio by 1%, resulted in a decline of financial performance of banks in Malawi, as measured by the return on assets (ROA), by 21.17%. The results also indicate that Cost Efficiency is statistically significant at 1% level of significance, meaning that this variable had a significant effect on bank performance.

This outcome indicates that despite the similarity in sign and significance level, the coefficient for Cost Efficiency in respect to the moderated model (-0.211) was lower than the unmoderated model (-1.826). This suggests that when economic growth is taken into account, the negative effect of Cost Efficiency on bank performance is reduced. This is achieved because the economic growth entails increased business for the banks, hence, more revenue which grows at a faster pace than the costs and overheads. The result concurs with theory and agrees with the findings of other researchers including Khemraj and Pasha (2009), Rajan and Dhal (2003), Bashir, (2001), Salas and Suarina (2002). The outcome, however, contradicts the findings of Chepchirchir (2011) and those of Ongore and Kusa (2013) who concluded that macroeconomic factors do not have insignificant contribution the financial performance of commercial banks.

CRRGDP was found to have a beta coefficient of 1.136 (compared to coefficient of -.135 for unmoderated model) implying that there is a positive relationship with ROA. This means that an increase in the moderated CRRGDP by 1% was associated with an increase in the financial return of commercial banks in Malawi of 1.136 times. This

variable, however, was not statistically significant and therefore did not have an effect on bank performance. The foregoing result indicates that when economic growth is taken into account, the negative effect of Cash Reserve Requirement on the performance of banks in Malawi becomes non-significant. This outcome mirrors the findings of Naceur (2003) who found that that macro-economic indicators, including economic growth, had no impact on profitability of Tunisian banks. This finding, however does not agree with the studies that were carried out by Montoro and Moreno (2011) and Friedman and Schwartz (1963).

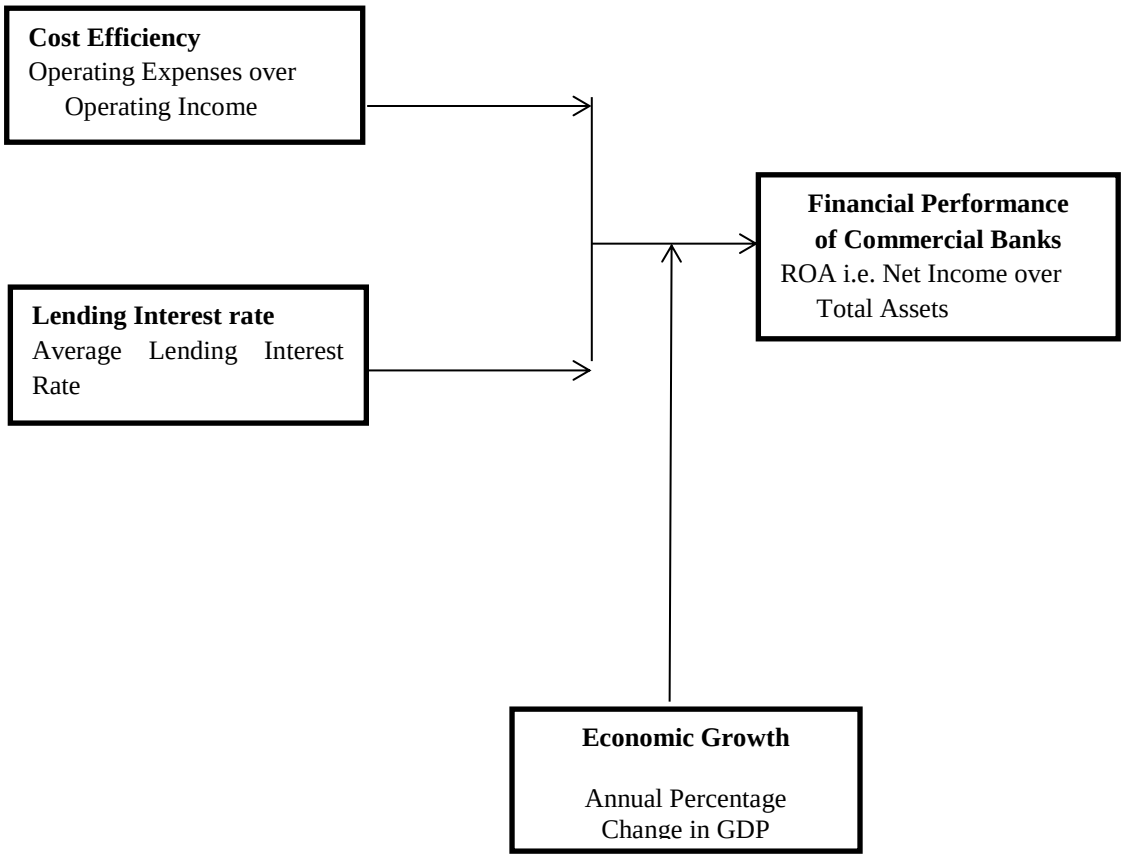
LIRGDP had a beta coefficient of 3.280 (compared to coefficient of 0.108 for unmoderated model). This demonstrates that LIRGDP was positively related to bank performance. This implied that an increase in the LIRGDP by 1% resulted in an increase in the financial performance of commercial banks in Malawi of 3.280 times. This variable is also highly significant at the 1% level implying that it had a significant effect on bank performance.

Based on the result, it is noted that under both the unmoderated and moderated models, the Lending Interest Rate variable has a positive and significant effect on bank performance. The results further indicate that when economic growth is considered, the effect of Lending Interest Rate on bank performance is much higher (3.280 times) than under unmoderated scenario (0.108). This result concurs with findings of Flannery (1980), Haron (2004) and Okoye and Onyekachi, (2013) who all found that lending interest rates was among the key drivers of bank performance.

4.16.3 Optimal Model

The outcome of the moderated regression model showed that when the moderating variable, Economic Growth, was taken into account, the outcome of the moderated regression model indicated that the statistically significant variables were Cost Efficiency ratio and Average Lending Interest Rate. The Asset Quality variable and Cash Reserve Requirement were both found to be not statistically significant.

The Optimal Model was derived from the outcome of the moderated regression model. It depicts only the variables which had a statistically significant effect on the performance of commercial banks in Malawi i.e. Cost Efficiency and Average Lending Interest Rate.



Independent Variables **Moderating Variable** **Dependent Variable**

Figure 4.11: Optimal Model

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This Chapter summarizes the findings of the study done with specific reference to the objectives and research hypotheses of the study. Data was interpreted and the results of the findings were correlated with both empirical and theoretical literature available. The conclusion relates directly to the specific research hypotheses. The recommendations were deduced from conclusion and discussion of the findings.

5.2 Summary of the Findings

The study sought to investigate the effect of non-performing loans and other factors on the financial performance of commercial banks in Malawi. Specifically, the study investigated the effect of asset quality, cost efficiency, cash reserve requirement, lending interest rate on the financial performance of commercial banks in Malawi. The study further examined the influence of economic growth as a moderating variable. The empirical literature reviewed indicated that the variables which were included in the study had an effect on the bank performance in both developed and emerging economies all over the world. The study also demonstrated that economic growth has an effect on the variables. The study was a census where all commercial banks operating in Malawi were studied with the exception of one bank which had operated for just about four years at the time that the research was undertaken.

The finding of the study, based on the unmoderated regression that was estimated on the pooled data for all banks but one in Malawi, revealed that asset quality, as measured by the NPL ratio, had a negative but significant effect on the financial performance of commercial banks in Malawi. Based on the regressions that were run on the pooled data for all banks, the study found out that Cost Efficiency had a significant negative effect on the financial performance of commercial banks in Malawi. This implies that as direct

and operating expenses for the banks increase proportionately higher than the rate of growth of income, the net profitability of the banks declines and it adversely affects the ROA of the banks. The results also showed that Cash Reserve Requirement did not have a significant effect on the financial performance of commercial banks in Malawi. This implies that the policy directives by the monetary authorities for the commercial banks in Malawi in regard to the Cash Reserve Requirement did not affect the profitability of the banks as measured by the return on assets ratio (ROA). The pooled data for all banks indicate that Lending Interest Rate had a significant positive effect on the financial performance of commercial banks in Malawi. This implies that any upward adjustments of the lending interest rate had the net effect of increasing the net income of the commercial banks in Malawi. The increased income had the positive effect of enhancing the profitability of the banks as measured by the return on assets ratio (ROA).

The study also found when the model was estimated after including the moderating variable, Economic Growth, the negative effect of Asset Quality, as measured by the NPL ratio, on the performance of banks in Malawi was negated. The sign changed to positive and became non-significant. In regard to Cost Efficiency, the unmoderated model showed that this variable was negatively related to bank performance and was significant at the 1% level but when economic growth was taken into account, the Cost Efficiency retained the negative sign but the extent of the negative effect on bank performance was substantially reduced. In regard to Cash Reserve Requirement, when economic growth is taken into account, the negative effect of Cash Reserve Ratio on the performance of banks in Malawi became non-significant. The Lending Interest Rate had a beta coefficient of 0.1081 under the unmoderated model and was highly statistically significant at the 1% level. When economic growth was considered, the effect of Lending Interest Rate on bank performance was enhanced (3.280 times) than under unmoderated scenario (0.108).

5.3 Overall Effect of the Variables

The study found that under the unmoderated model, three out of the four variables (Asset Quality, Cost Efficiency and Average Lending Interest Rate), had a significant effect on the performance of commercial banks in Malawi. The study also found out that the degree of association between the dependent variable and the independent variable, was strong. The study further showed that the corresponding change in the performance of commercial banks in Malawi was jointly accounted for by the predictor variables which were used in the study. Test of overall significance of all the variables jointly, Asset Quality, Cost efficiency, Cash Reserve ratio and Lending Interest Rate using ANOVA, indicated that the model was statistically significant at the 1% level of significance. When the moderating variable, Economic Growth, was taken into account, the outcome of the moderated regression model indicated that the statistically significant variables were Cost Efficiency ratio and Average Lending Interest Rate. The Asset Quality variable and Cash Reserve Requirement were both found to be not statistically significant.

5.4 Conclusions

The objective of this study was to investigate the effect of micro and macro-economic factors on the financial performance of commercial banks in the Malawian banking sector. The findings demonstrated that asset quality of commercial banks, as measured by the NPL ratio, has a significant negative effect on bank performance. The banks and monetary authorities should therefore come up with ways of ensuring that the banks' asset quality is properly managed and particularly non-performing loan ratio is controlled and kept at a minimum in order to enhance the financial performance of the commercial banks in Malawi. This outcome concurs with the findings of Berger and DeYoung (1992), Muasya (2008), Flamini, McDonald and Schumacher, (2009), Karim, Chan and Hassan (2010), Olweny and Shipho, (2011), Qin and Pastory (2012), Li and Zou (2014) and Roy (2015).

The study also found that cost efficiency is a significant factor that has a negative effect on the performance of banks in Malawi. Due to its significance, commercial banks in Malawi should institute appropriate and robust cost control measures to ensure that total expenses are kept at a minimum but in such a way that income-enhancing activities are not stifled. This outcome is in line with other studies such as those of Berger and DeYoung (1997), Jiang, *et al* (2003) Karim, Chan, Hassan (2010) and Munyambonera (2013).

As for Cash Reserve Ratio, the study found out that it had a negative effect on the performance of banks in Malawi but was not statistically significant. Although the outcome indicates that this variable was not significant, it still indicates that it has a negative sign. This impresses upon banks to consider innovative ways of ensuring that they enhance their financial capacity to enable them smoothly handle any possible policy movements in Cash Reserve Requirement so as to insulate the performance of their respective banks from any possible adverse effect which may be brought about by the policy changes in Cash Reserve Requirement. The findings are in line with the outcomes from the studies which were carried out by Chika (2014); Ajayi and Atanda (2012).

The Average Lending Interest Rate was found to be statistically significant and had a positive effect on the performance of commercial banks in Malawi. The commercial banks in Malawi should therefore leverage on this and find an optimum rate that ensures that they maximize returns whilst at the same time, desist from suffocating their borrowers with high lending rates. The result resonates with those of Flannery (1980), Okoye and Onyekachi, (2013) Borio *et al* (2011) and Khan (2014).

In regard to the moderating effect of the independent variables, the study found that a macro-economic variable, Economic Growth, had a statistically significant influence on the effect of the variables which were included in the study.

5.5 Policy Recommendations

Asset Quality is largely determined by the proportion of non-performing loans on the banks' loan portfolio and this adversely affects the financial performance of banks. The policy recommendation is that commercial banks in Malawi should institute robust credit risk management system to minimize the incidence of non-performing loans on their books. This implies instituting a robust due-diligence system that can efficiently identify bankable borrowers and one that can monitor the performance of the loans once they are granted. On the part of the regulatory authorities, they should put in place mechanisms that would facilitate the regulatory framework to support and ensure that banks have strong credit risk management practices. This can be done though strengthening the banks' internal risk management systems to assist the identification, measurement and monitoring of credit risk as well as directing the supervision focus towards credit risk. Additionally, the regulatory authorities should put in place appropriate prudential regulations that would reduce the risk of accumulation of non-performing loans. Such regulations should include limits on loan concentrations, single obligor limits, sector limits, allowing diversification through interstate mergers and loan sales and guidance on appropriate loan-to-asset ratios. The bank managers and supervisors should pay special attention to banks' internal credit control procedures (e.g., loan review, collateral appraisal).

In respect to Cost Efficiency, the regulatory authorities should ensure commercial banks are prudent in their spending by imposing appropriate industry cost efficiency ratio which all commercial banks should comply with. The authorities should also introduce suitable penalties for non-compliance. On their part, the commercial banks themselves should be innovative and institute cost control activities such as introducing technology based banking services and limiting excessive branch expansions which potentially reduce costs via reducing the number of staff to be employed and the branch opening costs. This should, however, be done without compromising the future growth motives of banks. Another way of cost control is ensuring that the banks employ competent and

skilled staff in order to minimize hiring of consultants and outsourcing of services which can be handled by the bank staff.

Regarding Cash Reserve Requirement, the study recommends that monetary authority in Malawi should moderate the minimum policy rate as tool for regulating commercial banks operations and facilitating investment in the economy; the cash reserve ratio should be kept at an optimal level considering its correlating and negative effect on commercial bank performance. It is further recommended that the monetary authorities should consider reducing their reliance on reserve requirements as a policy instrument considering that reserve requirements compel banks to deposit a portion of their assets with the central bank, which generally offers a lower yield than other investments. One result is a larger spread between lending and deposit rates, which increases the cost of credit and tends to reduce the level of financial intermediation. In order to avoid these effects and promote financial development, the monetary authorities should shift towards market-based instruments for monetary control, such as open market operations using repos. Repos, short for repurchase agreements, are contracts for the sale and future repurchase of a financial asset, most often treasury securities. On the termination date, the seller repurchases the asset at the same price at which he sold it, and pays interest for the use of the funds. As an initiative on their part, the commercial banks should be mindful of the cash reserve ratio and should implement strategies that would ensure adequate performance irrespective of an increase or decrease in the cash reserve ratio. One way of achieving this is to attract a financially strong equity partners or shareholders who could inject funds in the banks at call whenever the monetary authorities institute a policy change resulting in an upward adjustment in CRR.

As for Lending Interest Rate, it is recommended that in order to cushion consumers from exploitation by commercial banks, the monetary authorities should exercise their monitoring roles strictly and discipline any commercial banks that may be increasing the interest rates arbitrarily. Further, policies need to be put in place to shield bank lending rates and ensure monitoring the same. In addition, in times of poor performance of

commercial banks and the need to boost their profitability may be necessary for their role in economy, the monetary authorities should come up with monetary policy that will lead to rise in interest rates and hence improving banks' profitability. The banks themselves should play a role and lend at favorable interest rates that would encourage an increase in the demand for the loans. The increasing demand for the loans should not, however, compromise bank credit management policies. The banks should ensure that the customers are adequately screened to eliminate those who may not have capacity to service their loan obligations, the bank credit team should also be rewarded upon attainment of the bank's loan portfolio objectives and for their exclusive performance towards the bank. On top of this, the banks should try as much as possible to strike a balance in their loan pricing decisions. This will help them to be able to cover cost associated with lending and at the same time, maintain good banking relationship with their borrowers. In addition, the banks should diversify their revenue sources and should put in place a proper mix of interest and non-interest bearing assets which can generate fee incomes on their loan exposures. Introduction of fee-based services which are less exposed to credit risk should be one of the areas that commercial banks in Malawi need to implement to sustain their financial performance.

5.6 Contribution to Knowledge

Based on its findings, the study contributed the following to knowledge:

- In the Malawi banking sector, bank performance is affected by Asset Quality, Cost Efficiency, and Lending Interest Rate which had the expected signs and were statistically-significant.
- The study resolved the debate advanced among researchers regarding the link between credit extended by banks the Cash Reserve Ratio. In this regard, Christian and Pascal (2012), Cargill and Mayer (2006), and Montoro and Moreno (2011) contended that, an increase in reserve requirement tends to decrease bank credit. On the other hand Friedman and Schwartz (1963) argue that, an increase in cash

reserve requirements leads to increase a bank's credit creation ability, hence, profitability. The study found that Cash Reserve Requirement was not statistically significant implying that bank performance in Malawi is not affected by CRR in a significant way.

- The study demonstrated the importance of the role of economic growth in the financial performance of banks in Malawi. For instance, the study has shown that without the economic growth variable, the effect of asset quality (on bank performance) is negative and significant but when the economic growth variable is introduced, the effect becomes non-significant. This means that in Malawi, the performance of banks would be enhanced if there was a vibrant economic growth. This therefore is a new argument for a closer collaboration between the banking sector and the government to collaboratively work out strategies that would spur economic growth. (e.g. development of the real sector). The concern by the Reserve Bank of Malawi due to the growing NPL ratio (that this might bring financial instability) may be assuaged if there was a robust economic growth.
- There is an argument among researchers some of whom contend that Economic Growth should be considered as a significant variable which affects the performance of commercial banks in an economy. (Siraj and Pillai, 2013; Salas and Suarina, 2002; Rajan and Dhal, 2003; and Fofack, 2005; Gizycki (2001), Lowe and Rohling (1993) and Kaufman (1998). The explanation provided by the literature for this relationship is that strong positive growth in real GDP usually translates into more income which improves the debt servicing capacity of borrower which in turn contributes to lower non-performing loans. Conversely, when there is a slowdown in the economy (low or negative GDP growth) the level of NPLs should increase. The study has confirmed that an improvement in economic growth is key to the resolution of the current Asset Quality problem that Malawian banks are facing.

5.7 Recommendations for Further Research

The findings of this study emphasized the effect of asset quality, cost efficiency, cash reserve ratio and average lending rates on the performance of banks in Malawi. As such, future studies can expand the study by examining other variables that affect performance of banks such as liquidity ratios, bank size, structure of the banking industry, interest rate spread, just to mention a few. Whilst this study focused on the banking sector, it is also recommended that further research should be more holistic by interrogating the broader financial sector in Malawi which in addition to the banking sector, covers insurance, mortgage, microfinance institutions, pension funds and non-deposit financial taking institutions. Lastly, the study recommends that a future study in the banking industry should makes use of a different moderating variable in order to investigate the effect bank performance, not only the economic growth as was the case in this study.

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APPENDICES

APPENDIX 1: LETTER OF INTRODUCTION

ESTON ESTON CHIMKONO
P.O Box 30257
Capital City, Lilongwe 3
Malawi

Dear Madam / Sir,

RE : DATA COLLECTION

I am a student at the Jomo Kenyatta University of Agriculture And Technology, Nairobi, Kenya, pursuing Degree of Doctor of Business Administration (DBA) in Finance. I am currently conducting a Research study on "Effect of Non-Performing Loans and Other Factors on the Financial Performance of Commercial Banks in the Malawian Banking Sector" to fulfill the requirements of award of the named degree.

I shall be grateful if you could assist me by providing me with copies of the audited and published financial accounts for your bank from 2003 to 2013. The information will be treated with utmost confidentiality and will be used only for research purposes of this study only.

Thank you in advance for your support.

Yours Faithfully,

ESTON ESTON CHIMKONO

APPENDIX II : DATA COLLECTION FORM

The Data Collection From below is intended to collect information regarding the effect of micro and macro-economic factors on the financial performance of commercial banks in Malawi.

		2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
		K'mn	**K'mn**	**K'mn**	**K'mn**	**K'mn**	**K'mn**	**K'mn**	**K'mn**
Performance	Net Profit								
	Total assets								
Asset Quality	Non-Performing Loans								
	Total Gross Loans								
Cost Efficiency	Total Operating Expense								
	Income Before tax								
Cash Reserve Requirement	Cash Reserves								
	Total Deposits								
Lending Interest Rate	Lending Interest Rate (%)								
Economic growth	Real GDP								

		2008	2009	2010	2011	2012	2013	2014
		K'mn	**K'mn**	**K'mn**	**K'mn**	**K'mn**	**K'mn**	**K'mn**
Performance	Net Profit							
	Total assets							
Asset Quality	Non-Performing Loans							
	Total Gross Loans							
Cost Efficiency	Total Operating Expense							
	Income Before tax							
Cash Reserve Requirement	Cash Reserves							
	Total Deposits							
Lending Interest Rate	Lending Interest Rate (%)							
Economic growth	Real GDP							

APPENDIX III: SHAREHOLDING OF BANKS IN MALAWI AS AT 31ST DECEMBER, 2014

1. **National Bank**

Shareholder	**Percentage held**
Press Corporation Limited	**51.5 %**
Old Mutual	**24.9 %**
General Public	**19.8 %**
Employee Share Ownership Scheme	**3.8 %**
Total shareholding	**100.0 %**

2. **Standard Bank**

Shareholder	**Percentage held**
Stanbic Africa Holdings Limited	60.2 %
NICO Holdings Limited	20.0 %
Old Mutual Life Assurance	4.8 %
Press Trust	2.3 %
Standard Bank Pension Fund	2.1 %
General Public	10.7 %
Total shareholding	**100.0 %**

3. **First Merchant Bank**

Shareholder	Percentage held
Zambezi Investment Limited	44.9 %
Simsbury Holdings Limited	22.7 %
Prime Bank Limited (Kenya)	11.2 %
Prime Capital Holdings Limited (Kenya)	11.2 %
General Public	9.9 %
Total shareholding	**100.0 %**

4. **NBS Bank**

Shareholder	Percentage held
NICO Holdings Limited	50.1 %
General Public	26.2 %
National Investment Trust Limited	5.2 %
International Finance Company	18.1 %
Total shareholding	**100.0 %**

5. **Ecobank Malawi**

Shareholder	Percentage held
Ecobank Transnational Incorporated Limited	90.3 %
Loita Capital Partners International	9.7 %
Total shareholding	**100.0 %**

6. **FDH Bank**

Shareholder	**Percentage held**
FDH Financial Holdings Limited	100.0 %
Total shareholding	**100.0 %**

7. **Malawi Savings Bank**

Shareholder	**Percentage held**
Government of the Republic of Malawi	100.0 %
Total shareholding	**100.0 %**

8. **Opportunity Bank Malawi**

Shareholder	**Percentage held**
Opportunity International Limited (UK)	37.4 %
Opportunity Transformation Investment (USA) (OTI)	51.3 %
Opportunity International Canadian Foundation	9.6 %
Africap Microfinance Fund Limited	1.2 %
Trust for Transformation	0.4 %
Total shareholding	**100.0 %**

9. Indebank

Shareholder	Percentage held
ADMARC Investments Holding Company	25.7 %
The Registered Trustees of Press Trust	30.0 %
Employee Share Ownership Scheme	3.0 %
Government of the Republic of Malawi	41.4 %
Total shareholding	**100.0 %**

10. Nedbank

Shareholder	Percentage held
MN Holdings Limited	97.1 %
Employee Share Ownership Scheme	2.9 %
Total shareholding	**100.0 %**

APPENDIX IV: DATA FOR INDIVIDUAL COMMERCIAL BANKS

NATIONAL BANK OF MALAWI

DATA IN LEVELS

	YEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Amounts in MK'mn															
ROA	Net Profit	547	575	654	1,263	1,417	1,438	1,918	2,393	3,154	3,802	3,429	3,558	7,587	12,706	14,529
	Total Assets	10,379	11,969	14,296	17,768	24,476	32,444	35,991	46,887	62,330	76,229	82,807	92,109	129,489	185,302	228,413
Asset Quality	NPLs	391	330	790	280	324	298	463	765	530	572	934	577	995	2,459	4,709
	Gross Loans	3,320	3,088	3,549	4,604	7,466	10,646	16,551	18,421	25,567	37,564	42,529	46,573	63,001	62,918	79,322
Cost Efficiency	Total Expense	764	1,093	1,254	1,538	1,845	2,361	3,825	4,342	4,959	5,796	6,322	8,375	10,483	15,378	17,956
	Total Revenue	2,458	2,397	3,044	4,063	4,940	6,008	6,635	7,636	10,850	11,249	11,280	13,707	22,095	34,040	39,287
Cash Reserve Requirement	Cash reserves	472	485	608	762	1,138	1,465	2,252	3,173	2,207	7,736	5,474	8,155	8,797	18,830	28,992
	Total deposits	8,052	8,704	10,438	12,236	16,795	23,257	25,433	34,938	45,439	55,072	59,023	66,751	91,501	123,855	144,967
Lending Interest Rate	Annual Lending (base) Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	Real GDP growth	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

NATIONAL BANK OF MALAWI

DATA IN RATIOS

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Ratio and Percentages														
ROA	0.053	0.048	0.046	0.071	0.058	0.044	0.053	0.051	0.051	0.050	0.041	0.039	0.059	0.069	0.064
Asset Quality	0.118	0.107	0.223	0.061	0.043	0.028	0.028	0.042	0.021	0.015	0.022	0.012	0.016	0.039	0.059
Cost Efficiency	0.311	0.456	0.412	0.379	0.373	0.393	0.576	0.569	0.457	0.515	0.560	0.611	0.474	0.452	0.457
Cash Reserve Requirement	0.059	0.056	0.058	0.062	0.068	0.063	0.089	0.091	0.049	0.140	0.093	0.122	0.096	0.152	0.200
Lending Interest Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

STANDARD BANK OF MALAWI

DATA IN LEVELS

	YEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Amounts in MK'mn															
ROA	Net Profit	509	328	402	541	78	221	721	1,308	2,072	2,852	2,424	3,546	7,965	12,069	12,289
	Total Assets	9,171	9,630	11,887	13,777	14,593	17,340	21,993	29,872	41,017	49,498	55,152	75,620	118,196	166,701	190,896
Asset Quality	NPLs	168	157	177	161	385	375	453	712	244	283	1,514	2,366	3,218	5,302	3,847
	Gross Loans	2,798	2,624	2,945	2,687	4,080	4,820	7,551	11,868	15,910	21,186	25,225	39,434	50,933	53,264	55,487
Cost Efficiency	Total Expense	708	886	1,137	1,709	2,238	2,338	3,042	3,746	3,397	4,428	5,666	4,980	8,602	12,472	15,492
	Total Revenue	1,612	1,769	2,269	2,543	2,016	2,121	3,457	5,470	6,541	8,287	9,762	11,519	22,218	32,734	34,961
Cash Reserve Requirement	Cash reserves	349	352	421	586	578	641	748	854	2,845	4,434	7,738	8,489	13,366	27,066	30,448
	Total deposits	6,895	7,554	8,735	10,687	11,067	13,435	15,605	20,281	28,916	36,738	42,631	57,702	84,717	130,139	140,599
Lending Interest Rate	Lending Interest Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	Real GDP Growth	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

STANDARD BANK OF MALAWI

DATA IN RATIOS

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Ratio and Percentages														
ROA	0.06	0.03	0.03	0.04	0.01	0.01	0.03	0.04	0.05	0.06	0.04	0.05	0.07	0.07	0.06
Asset Quality	0.04	0.05	0.06	0.06	0.09	0.08	0.06	0.06	0.02	0.01	0.06	0.06	0.06	0.10	0.07
Cost Efficiency	0.44	0.50	0.50	0.67	1.11	1.10	0.88	0.68	0.52	0.53	0.58	0.43	0.39	0.38	0.44
Cash Reserve Requirement	0.88	1.93	1.97	2.07	186.50	6.92	2.96	2.17	1.11	1.20	1.56	0.90	0.72	0.70	0.86
Lending Interest Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

FIRST MERCHANT BANK OF MALAWI

DATA IN LEVELS

	YEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Amounts in MK'mn															
ROA	Net Profit	98	164	269	352	477	610	1,107	1,993	1,392	1,318	1,829	2,015	3,417	5,989	5,197
	Total Assets	2,063	3,515	4,420	5,649	8,371	9,033	13,278	19,899	24,902	38,670	49,678	60,064	53,024	82,948	104,363
Asset Quality	NPLs	43	22	62	72	72	220	325	409	251	492	1,467	1,433	1,045	1,180	3,158
	Gross Loans	393	548	864	1,290	2,244	2,773	4,326	5,826	11,028	17,473	22,597	24,422	21,638	28,092	43,138
Cost Efficiency	Total Expense	150	237	293	468	523	663	891	1,240	1,856	2,388	3,028	3,695	4,618	7,949	9,940
	Total Revenue	311	498	901	1,265	1,494	1,767	2,440	3,791	3,808	4,398	5,601	6,622	8,998	15,899	17,845
Cash Reserve Requirement	Cash reserves	109	365	458	608	475	325	370	355	186	493	814	2,545	3,642	12,762	12,628
	Total deposits	1,090	2,233	3,544	4,226	6,006	6,822	9,186	13,889	17,114	27,895	37,127	47,028	36,390	53,598	64,493
Lending Interest Rate	Annual Lending (base) Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	Real GDP growth	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

FIRST MERCHANT BANK OF MALAWI

DATA IN RATIOS

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Ratio and Percentages														
ROA	0.05	0.05	0.06	0.06	0.06	0.07	0.08	0.10	0.06	0.03	0.04	0.03	0.06	0.07	0.05
Asset Quality	0.11	0.04	0.07	0.06	0.03	0.08	0.08	0.07	0.02	0.03	0.06	0.06	0.05	0.04	0.07
Cost Efficiency	0.48	0.48	0.33	0.37	0.35	0.38	0.37	0.33	0.49	0.54	0.54	0.56	0.51	0.50	0.56
Cash Reserve Requirement	0.10	0.16	0.13	0.14	0.08	0.05	0.04	0.03	0.01	0.02	0.02	0.05	0.10	0.24	0.20
Lending Interest Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	0.78%	-4.15%	1.70%	5.53%	5.52%	2.57%	2.06%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

NBS BANK OF MALAWI

DATA IN LEVELS

	YEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Amounts in MK'mn															
ROA	Net Profit	17	26	41	64	100	142	182	264	779	1,092	1,404	1,686	727	1,913	2,693
	Total Assets	1,425	2,067	2,996	4,345	6,300	8,194	10,045	14,212	20,420	29,635	38,850	56,111	59,623	60,214	68,361
Asset Quality	NPLs	18	28	43	66	102	45	57	280	560	794	1,680	2,027	8,848	18,245	24,581
	Gross Loans	241	371	572	881	1,356	4,215	5,754	7,919	12,747	18,731	24,716	36,668	37,877	40,237	40,479
Cost Efficiency	Total Expense	88	126	182	262	440	987	1,277	1,776	2,156	2,902	3,648	4,020	5,980	7,518	9,069
	Total Revenue	146	210	303	436	628	1,328	1,741	1,882	2,424	4,221	6,017	6,742	9,028	13,582	17,483
Cash Reserve Requirement	Cash reserves	241	308	394	504	50	91	1,045	1,693	2,558	3,401	4,245	6,868	5,693	6,640	6,740
	Total deposits	2,005	2,566	3,284	4,204	5,381	7,172	8,452	10,921	16,504	21,945	27,386	44,310	36,730	42,839	43,483
Lending Interest Rate	Annual Lending (base) Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	Real GDP growth	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

NBS BANK OF MALAWI

DATA IN RATIOS

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Ratio and Percentages														
ROA	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.019	0.038	0.037	0.036	0.030	0.012	0.032	0.039
Asset Quality	0.058	0.061	0.064	0.075	0.075	0.011	0.010	0.035	0.044	0.042	0.068	0.055	0.234	0.453	0.607
Cost Efficiency	0.440	0.510	0.560	0.600	0.701	0.743	0.734	0.944	0.889	0.688	0.606	0.596	0.662	0.554	0.519
Cash Reserve Requirement	0.065	0.070	0.088	0.10	0.011	0.013	0.124	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155
Lending Interest Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	0.8%	-4.1%	1.7%	5.5%	5.52%	2.57%	2.06%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

ECOBANK MALAWI

DATA IN LEVELS

	YEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Amounts in MK'mn															
ROA	Net Profit	5.2	9.2	27.2	18.6	(37.4)	4.6	4.7	4.9	20.2	85.1	118.8	118.6	5.6	602.9	1,519.2
	Total Assets	899	1,983	2,455	3,021	2,654	2,203	2,264	2,328	4,576	5,940	5,812	10,872	11,442	24,036	50,113
Asset Quality	NPLs	3.1	7.2	23.5	20.9	16.8	14.3	15.2	16.2	15.7	134.5	275.7	2,542.9	1,267.1	1,484.7	970.7
	Gross Loans	339	711	1,443	1,211	600	861	894	928	1,283	2,164	2,196	3,831	6,359	9,371	22,597
Cost Efficiency	Total Expense	59	103	186	191	275	163	168	173	424	707	1,801	1,309	1,453	2,639	3,409
	Total Revenue	106	128	290	317	267	263	271	280	619	1,467	3,516	2,483	2,348	5,037	7,370
Cash Reserve Requirement	Cash reserves	22	18	42	101	71	51	53	55	305	158	157	344	505	657	7,355
	Total deposits	574	1,359	1,346	1,341	2,113	1,347	1,388	1,431	2,770	3,838	2,963	6,665	7,117	18,416	33,794
Lending Interest Rate	Annual Lending (base) Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	Real GDP growth	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

ECOBANK MALAWI

DATA IN RATIOS

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Ratio and Percentages														
ROA	0.006	0.005	0.011	0.006	(0.014)	0.002	0.002	0.002	0.004	0.014	0.020	0.011	0.000	0.025	0.030
Asset Quality	0.009	0.010	0.016	0.017	0.028	0.017	0.017	0.017	0.012	0.062	0.126	0.664	0.199	0.158	0.043
Cost Efficiency	0.556	0.803	0.642	0.603	1.029	0.620	0.620	0.620	0.684	0.482	0.512	0.527	0.619	0.524	0.463
Cash Reserve Requirement	0.038	0.014	0.031	0.075	0.034	0.038	0.038	0.038	0.110	0.041	0.053	0.052	0.071	0.036	0.218
Lending Interest Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	0.78%	-4.15%	1.70%	5.53%	5.52%	2.57%	2.06%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

FDH BANK LIMITED

DATA IN LEVELS

	YEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Amounts in MK'mn															
ROA	**Net Profit**	9	13	18	26	36	50	70	99	138	327	281	837	1,045	2	3,329
	Total Assets	38	60	94	149	235	372	587	928	1,466	2,529	6,246	17,930	24,256	37,066	48,581
Asset Quality	**NPLs**	0.08	0.15	0.26	0.48	1	2	3	5	9	17	41	225	521	1,927	2,099
	Gross Loans	3	6	10	17	30	52	92	160	280	826	3,543	10,644	15,144	18,219	21,002
Cost Efficiency	**Total Expense**	4	5	8	12	18	27	41	62	93	391	746	1,405	2,101	5,261	6,034
	Total Revenue	6.7	9.0	12.1	16	22	30	40	54	73	868	1,160	2,615	3,900	5,304	10,840
Cash Reserve Requirement	**Cash reserves**	3.1	4.6	6.7	10	14	21	30	45	65	118	535	3,255	2,200	6,008	8,270
	Total deposits	102	112	124	136	150	165	181	199	219	1,461	4,863	15,567	21,209	32,201	39,107
Lending Interest Rate	**Annual Lending (base) Rate**	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	**Real GDP growth**	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

FDH BANK LIMITED

DATA IN RATIOS

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Ratio and Percentages														
ROA	0.248	0.220	0.194	0.172	0.153	0.135	0.120	0.106	0.094	0.129	0.045	0.047	0.043	0.000	0.069
Asset Quality	0.026	0.026	0.027	0.028	0.029	0.029	0.030	0.031	0.032	0.020	0.012	0.021	0.034	0.106	0.100
Cost Efficiency	0.543	0.603	0.670	0.745	0.828	0.920	1.022	1.135	1.262	0.450	0.643	0.537	0.539	0.992	0.557
Cash Reserve Requirement	0.031	0.041	0.054	0.072	0.096	0.127	0.168	0.224	0.297	0.081	0.110	0.209	0.104	0.187	0.211
Lending Interest Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	0.78%	-4.15%	1.70%	5.53%	5.52%	2.57%	2.06%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

MALAWI SAVINGS BANK

DATA IN LEVELS

	YEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
								Amounts in MK'mn								
ROA	Net Profit	26	30	36	42	18	(19)	(131)	114	198	409	873	1,112	204	511	(2,234)
	Total Assets	582	739	938	1,192	1,283	1,691	2,266	5,678	13,881	15,924	23,389	35,045	38,909	40,268	47,969
Asset Quality	NPLs	3	10	24	105	142	191	258	349	405	979	420	436	4,218	5,514	6,979
	Gross Loans	86	95	105	117	216	571	964	3,021	7,434	9,823	14,795	22,552	23,924	19,538	22,567
Cost Efficiency	Total Expense	132	146	162	179	271	313	(351)	324	897	1,268	1,753	2,597	3,544	5,345	7,768
	Total Revenue	174	192	213	235	295	227	384	541	1,248	1,990	2,836	4,167	4,890	6,901	9,959
Cash Reserve Requirement	Cash reserves	37	42	46	51	96	271	228	390	636	643	1,294	601	673	71	266
	Total deposits	747	826	914	1,011	1,042	1,380	2,140	5,264	11,579	13,662	20,378	26,244	30,951	31,720	40,382
Lending Interest Rate	Annual Lending (base) Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	Real GDP growth	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

MALAWI SAVINGS BANK

DATA IN RATIOS

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Ratio and Percentages														
ROA	0.035	0.029	0.031	0.036	0.014	(0.011)	(0.058)	0.020	0.014	0.026	0.037	0.032	0.005	0.013	(0.047)
Asset Quality	0.03	0.10	0.23	0.901	0.656	0.335	0.268	0.115	0.054	0.100	0.028	0.019	0.176	0.282	0.309
Cost Efficiency	0.76	0.76	0.76	0.762	0.916	1.381	(0.914)	0.600	0.718	0.637	0.618	0.623	0.725	0.775	0.780
Cash Reserve Requirement	0.045	0.049	0.050	0.051	0.092	0.197	0.106	0.074	0.055	0.047	0.063	0.023	0.022	0.002	0.007
Lending Interest Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	0.8%	-4.1%	1.7%	5.5%	5.5%	2.6%	2.1%	9.5%	8.3%	9.0%	6.5%	4.3%	1.9%	5.2%	5.7%

OPPORTUNITY BANK MALAWI

DATA IN LEVELS

	YEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Amounts in MK'mn															
ROA	Net Profit	(31)	(24)	(22)	14	(53)	(18)	(46)	43	121	44	189	(775)	(198)	(126)	(61)
	Total Assets	98	135	144	270	627	967	1,530	2,703	5,531	8,087	9,274	11,899	11,352	17,388	25,314
Asset Quality	NPLs	0.2	0.2	0.2	0.5	0.7	1.2	3.8	10.3	54.6	197.7	339.8	551.4	259.9	406.7	988.3
	Gross Loans	2.5	4.2	5.6	12.9	144.6	289.3	718.9	1,557.0	3,398.2	4,302.0	4,740.9	4,181.6	4,115.7	7,864.1	11,788
Cost Efficiency	Total Expense	16	37.31	23.2	90.9	164.0	273.5	438.1	594.2	1,034.9	1,400.1	1,864.8	2,304.9	2,809.0	4,002.4	5,524.6
	Total Revenue	20	41	55.0	67.5	179.1	290.6	374.3	774.9	1,257.1	1,584.3	2,215.8	2,093.5	3,024.7	4,271.1	6,195.0
Cash Reserve Requirement	Cash reserves	2.6	1.9	1.7	2.3	2.0	2.5	3.1	3.8	8.8	39.9	2.0	1.7	1.4	1.2	1.0
	Total deposits	17	39	55	62	364	569	933	1,677	3,460	4,478	5,291	6,343	6,750	9,373	13,374
Lending Interest Rate	Annual Lending (base) Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	Real GDP growth	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

OPPORTUNITY BANK MALAWI

DATA IN RATIOS

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Ratio and Percentages														
ROA	(0.316)	(0.178)	(0.154)	0.053	(0.085)	(0.019)	(0.030)	0.016	0.022	0.005	0.020	(0.065)	(0.017)	(0.007)	(0.002)
Asset Quality	0.080	0.048	0.036	0.039	0.005	0.004	0.005	0.007	0.016	0.046	0.072	0.132	0.063	0.052	0.084
Cost Efficiency	0.800	0.910	0.422	1.347	0.916	0.941	1.170	0.767	0.823	0.884	0.842	1.101	0.929	0.937	0.892
Cash Reserve Requirement	0.150	0.150	0.031	0.037	0.005	0.004	0.003	0.002	0.003	0.009	0.000	0.000	0.000	0.000	0.000
Lending Interest Rate	0.502	0.468	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	0.78%	-4.15%	1.70%	5.53%	5.52%	2.57%	2.06%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

INDEBANK LIMITED

DATA IN LEVELS

	YEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Amounts in MK'mn															
ROA	Net Profit	18	21	43	159	2	(79)	53	118	283	346	245	88	261	280	(168)
	Total Assets	563	1,187	1,205	2,162	2,266	2,704	3,492	5,196	7,918	9,917	11,552	17,910	18,830	23,730	23,117
Asset Quality	NPLs	43	96	33	15	23	27	17	87	126	270	336	623	571	747	2,166
	Gross Loans	232	396	330	365	616	562	1,604	2,696	3,726	6,191	7,586	10,954	11,846	14,009	13,672
Cost Efficiency	Total Expense	71	71	163	145	235	326	311	581	813	1,011	1,228	1,792	2,908	3,900	4,567
	Total Revenue	155	175	269	472	466	307	574	766	1,268	1,703	1,633	1,966	3,369	4,513	5,082
Cash Reserve Requirement	Cash reserves	3	181	45	12	35	48	66	355	242	1,248	743	1,819	2,398	2,183	5,083
	Total deposits	100	568	470	1,153	1,252	1,860	2,435	3,777	5,456	7,871	8,666	14,437	13,723	18,065	17,456
Lending Interest Rate	Annual Lending (base) Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	Real GDP growth	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

INDEBANK LIMITED

DATA IN RATIOS

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Ratio and Percentages														
ROA	0.031	0.018	0.036	0.074	0.001	(0.029)	0.015	0.023	0.036	0.035	0.021	0.005	0.014	0.012	(0.007)
Asset Quality	0.183	0.243	0.099	0.042	0.037	0.049	0.011	0.032	0.034	0.044	0.044	0.057	0.048	0.053	0.158
Cost Efficiency	0.461	0.406	0.607	0.308	0.504	1.062	0.542	0.758	0.641	0.593	0.752	0.912	0.863	0.864	0.899
Cash Reserve Requirement	0.031	0.319	0.096	0.011	0.028	0.026	0.027	0.094	0.044	0.159	0.086	0.126	0.175	0.121	0.291
Lending Interest Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

NEDBANK LIMITED

DATA IN LEVELS

	YEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Amounts in MK'mn															
ROA	Net Profit	23	(61)	80	29	1.3	(17)	3.1	55	172	285	214	166	301	(62)	8
	Total Assets	1,211	1,241	1,097	1,421	2,074	2,260	2,814	3,072	7,025	6,600	10,358	10,367	12,706	11,152	16,471
Asset Quality	NPLs	154.9	73.8	51.3	7.0	5.0	2.9	21.0	15.7	8.5	12.9	0.9	1.9	2.3	11.9	12.8
	Gross Loans	1,083	759	563	229	459	770	1,283	772	2,413	1,311	3,478	2,473	2,498	3,969	5,058
Cost Efficiency	Total Expense	61	100	141	195	255	303	377	445	655	818	981	1,051	1,544	2,136	2,532
	Total Revenue	234	203	260	329	301	370	566	688	1,250	1,680	1,292	1,323	1,974	2,043	2,588
Cash Reserve Requirement	Cash reserves	30	(60)	92	48	(3)	(17)	18	58	245	420	310	261	437	(81)	28
	Total deposits	0.9	5.3	8.4	11.6	26	41	71	108	117	810	295	1,439	1,925	1,796	3,382
Lending Interest Rate	Annual Lending (base) Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	Real GDP growth	0.78%	-4.1%	1.70%	5.53%	5.52%	2.57%	2.1%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%

NEDBANK LIMITED

DATA IN RATIOS

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Ratio and Percentages														
ROA	0.019	(0.049)	0.073	0.020	0.001	(0.007)	0.001	0.018	0.024	0.043	0.021	0.016	0.024	(0.006)	0.001
Asset Quality	0.143	0.097	0.091	0.031	0.011	0.004	0.016	0.020	0.004	0.010	0.000	0.001	0.001	0.003	0.003
Cost Efficiency	0.259	0.493	0.543	0.592	0.845	0.819	0.666	0.647	0.524	0.487	0.759	0.795	0.782	1.045	0.978
Cash Reserve Requirement	0.002	0.008	0.017	0.017	0.018	0.028	0.051	0.045	0.028	0.156	0.045	0.175	0.196	0.214	0.263
Lending Interest Rate	50.2%	46.8%	40.0%	35.0%	29.0%	27.0%	22.5%	19.6%	19.3%	19.6%	17.8%	17.8%	35.0%	36.5%	38.0%
Real GDP Growth	0.78%	-4.15%	1.70%	5.53%	5.52%	2.57%	2.06%	9.49%	8.34%	9.04%	6.53%	4.35%	1.89%	5.20%	5.70%