DIVERSIFICATION IN THE BANKING SECTOR: IMPACT OF NON-INTEREST INCOME ON BANK PERFORMANCE IN MALAWIAN COMMERCIAL BANKS

MASTER OF ARTS (ECONOMICS) THESIS

By

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Declaration

I the undersigned hereby declare that this thesis is my own work which has not been submitted to any other institution for similar purposes. Where other people's work has been used acknowledgements have been made.

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Abstract

Malawi has witnessed a tremendous increase in dependency on non-interest income by Commercial Banks as a way of diversifying risk and improving on bank performance. This has been mainly due to the fact that non-interest income is associated with low risk and hence has had a positive significance on the banks profitability. This Study examines the impact of non-interest income on Commercial bank profitability in the Malawian banking sector. The study adopts an Allerano and Bover General Methods of Moments of panel data estimation technique and it's more suitable because of the inclusion of a lagged term in the model which may lead to inefficient and inconsistent estimates. The study focuses on a period from 2008 to 2013 for 6 Malawian Commercial banks which for the purposes of the study, were grouped into largest, medium and smallest in terms of assets.

The study finds that there has been a positive statistically significant impact of non-interest income on Commercial bank profitability with large banks reaping more as compared to medium banks and medium banks reaping more than the small banks in terms of profits. One important policy implication from this study is that the Government of Malawi should come up with policies that promote small banks to grow their assets as well as their capital base to help boost their diversification into non-interest income which is less risky as compared to interest income and has capabilities of avoiding unforeseeable circumstances such as bank and financial crises.

Keywords: Non-interest income, Malawi Commercial Banks Profitability, Allerano and Bover General Methods of Moments

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List of acronyms

ADF	Augmented Dickey-Fuller
ATM	Automated Teller Machines
BAM	Bankers Association of Malawi
CDH	Continental Discount House
CPI	Consumer Price Index
FMB	First Merchant Bank
GDP	Gross Domestic Product
GMM	General Method of Moments
MK	Malawi Kwacha
MLR	Maximum Lending Rate
NBM	National Bank of Malawi
NII	Non-Interest Income
NSO	National Statistic Office
NBS	New Building Society
RBM	Reserve Bank of Malawi
STD	Standard

Chapter One

INTRODUCTION

1.1 Background

After the McKinnon-Shaw hypothesis (1973), financial analysts have built their wisdom on the fact that there is a need for flexibility and efficiency in the financial system and that these two elements are essential for the growth and development of any economy (Chirwa & Mlachila, 2004). The hypothesis states that operation of the market mechanism in an economy is limited by government control and intervention in the financial system thereby leading to slow economic growth and development and financial repression (Chirwa & Mlachila, 2004). Previously, commercial banks worldwide relied on interest as the traditional source of income. However, due to increased government intervention and control as well as the repercussions of the Great Recession which saw interest income being viewed as cheap loans, most banks worldwide no longer can depend on the interest rate margin (Atellu, 2004). They have diversified to other sources of income.

1.2 Diversification in the financial sector

In recent years, an observation of banks' financial statements reveals a positive turn towards diversification of the banks' financial income (Zhou, 2016). Among others, diversification into various portfolio earnings is encouraged because it is claimed that this leads to risk reduction (DeYoung & Rice, 2004). High class banks are no longer relying on loans as their major means of investment financing. They have also diverted into other sources of financing such as issuing bonds, equity financing or service fees and commissions (Zhou, 2016). Additionally, corporate deposits are becoming less dependable than ever before as they have become more leveraged (Zhou, 2016). A change in the set of interest rate is another factor that has influenced diversification which has resulted in the rapid transformation process and promoting innovation more vigorously with the view of widening profit margins by the banks (DeYoung & Rice, 2004). Diversification, alongside various

transformation strategies has been used as a main counter-attacking instrument in the banks' repository against challenges facing the domestic economy and the evermore regulatory necessities enforced by the regulators in the main banking industry (Zhou, 2016).

Though diversification from interest to non-interest income has led to increased levels of bank revenue, it can also lead to low volatility of bank profit and revenue and as well as a reduction in risk (Stiroh, 2004). One likely way is that non-interest income may be less dependent on general business settings than traditional interest income such that an increase in dependence on non-interest income may lead to a reduction of cyclical discrepancy in profits (Stiroh, 2004).

1.3 Bank Profitability and Non-Interest income

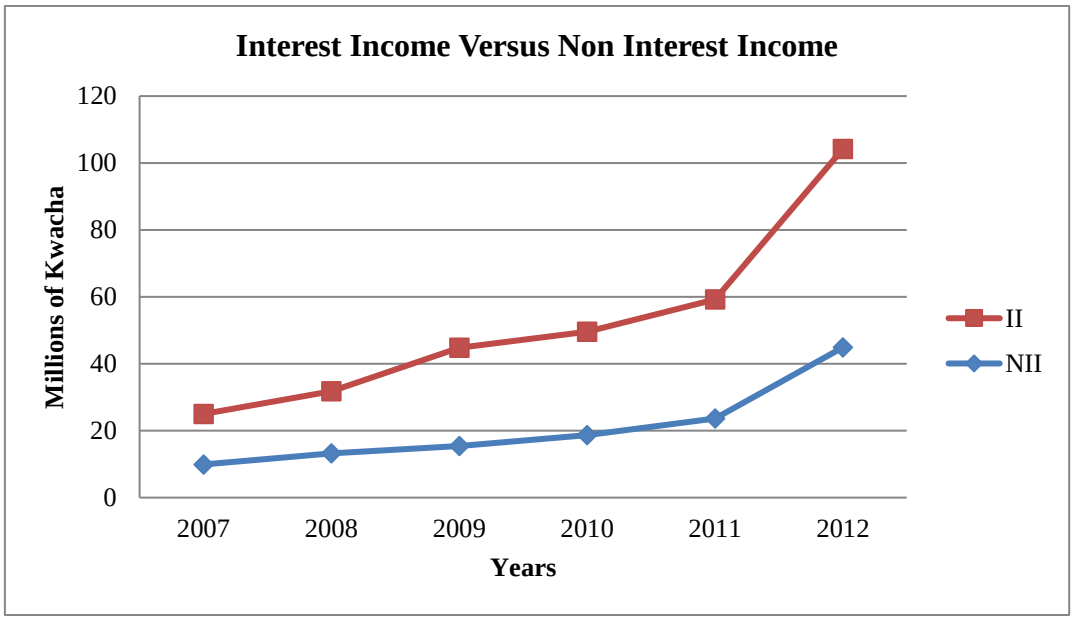
Various analysts attribute record bank profitability in recent years to the increasing growth of noninterest income which can be defined as the revenue earned by banks from other sources outside their lending operations. Noninterest income is made up of several different components which can be broken down into four major categories; service charges, fiduciary income, trading revenue, forex trading and fees income (Stiroh, 2004). Service charges is income that has a direct relation to deposit accounts such as check usage fees or Auto teller Machines (Stiroh, 2004). Fiduciary income is revenue that is generated through fiduciary operations of a bank such as investment administration for clients (Stiroh, 2004). While trading revenue is primarily the revenue that is generated from off-balance contracts, cash instruments and market-to-market variations in the carrying value of assets and liabilities, fees income is made up of all other fees such as commissions, loan commitment fees, land rental fees and safe deposit boxes, commissions (Stiroh, 2004). The difference between this income and interest income is that non-interest income is not affected by the upswings and downswings of an economy and that the monetary authorities do not have a direct control over it (Bodla & Verma, 2007). It is therefore argued that a competent bank should generate higher aggregates of noninterest income. An efficient bank should have the capability of setting its fees and service charges in such a way that monopolises the demand in the market and should also have a

large proportion of its customer base that purchases products that are fee-based (DeYoung & Rice, 2004). Therefore, apart from bank strategy and product mix, another important indicator of the future performance of a bank should supposedly be the non-interest income intensity (DeYoung & Rice, 2004).

1.4 The Problem Statement

It is argued *ceteris paribus* that, for given macroeconomic conditions, higher interest rates reduce the income component and so do low interest rates increase the income component (Borio et al., 2015). One possible channel for this possibility is the impact of interest rates on asset price valuations, where at low interest rates asset prices are higher and hence the higher the income, and at high interest rates asset prices are low and hence the lower income. However the interest rates in the Malawian banking sector are too high and the expectation is that there should be a corresponding low income and therefore low non-interest income. On the contrary, the opposite pattern has been observed such that the interest rates are high, the asset prices low, but the non-interest income is increasing and thus impacting on bank performance. Figure 1 shows the trend of commercial banks' dependence on interest and non-interest incomes for their profitability;

Figure 1: Trends in Interest income and Non-interest income variation



Source: Reserve Bank of Malawi (2013)

Where; II is the Interest income and NII is the non-interest income.

It can be observed from Figure 1 that there has been an increased trend in the dependency on non-interest income. Previously, a considerable number of studies have looked at the impact of various factors on the performance of banks in Malawi. Mostly, they identified the pricing conduct, concentration, ownership and those macroeconomic factors that fuel inflation as factors that affect profitability {(Kaluwa and Chijere (2016); Chirwa and Mlachila (2004); Al-Hashini (2007); Kanyoma (2006))}. The impact of non-interest income on the performance of banks has not been explored. This study seeks to examine this impact of the non-interest income on the performance of banks and thereafter seeks to provide guidance to policy makers and regulators on the implications of the diversification from interest income to non-interest income on bank profitability. It should be noted that the term profitability and performance are used interchangeably in this study.

1.5 The study objectives

The overall objective of the study is to examine the impact of non-interest income on Malawi's commercial banks profitability.

The specific objective of the study is;

1. To assess the contribution of non-interest income to the profitability of commercial banks in Malawi.

1.6 Hypotheses

Based on the objective, the study seeks to test the following null hypotheses:

1. There has been no contribution of non-interest income to commercial bank's profitability in Malawi.

1.7 Organization of the Study

This study is structured as follows; Chapter one offers the introduction to the study and highlights the background, the objectives and the significance of the study. Chapter two gives an overview of commercial banks performance and the trends in growth of non-interest income for the banks that are listed on the Market. Chapter three provides a review of literature on both the theoretical and empirical evidence. Chapter four discusses the methodology used in this study, data sources and estimation procedures while chapter five provides the findings of the study and chapter six offers the summary, conclusion and policy recommendations.

CHAPTER TWO

OVERVIEW OF THE MALAWIAN FINANCIAL SECTOR

2.1 The Financial Sector and Commercial Banks in Malawi

This chapter provides highlights of the Malawian Financial sector in various aspects. Firstly it provides the review of trends in and the current situation of the commercial banks in Malawi and non-interest income dependence. Secondly it provides the structure of the banking system in Malawi. Thirdly, it justifies the choice of Metric used to measure bank profitability. Fourthly, it provides a review of policies that have led to increased diversification to non-interest income.

2.2 Structure of the Banking System in Malawi

The structure of Malawi's banking system has been mainly influenced by regulation and government intervention. Chirwa (2004) observed that high government intervention and regulation in the 1970s and 1980s created highly concentrated market structures in the banking industry leading to a monopolistic market structure. IMF (2008) also observed that the Malawian Banking system is highly concentrated and mainly privately owned. According to Kaluwa and Chijere (2016), they observed that the market concentration is still high in relation to the moderate concentration limit. They further observed that the oldest and largest two banks have maintained dominance in terms of total deposits and loans.

2.2 The Financial Sector and Commercial Banks in Malawi

The financial sector in Malawi is regulated by the Reserve bank of Malawi (RBM) and is mainly dominated by commercial banks. The formal banking system in Malawi can be divided into four markets; commercial banks, corporate banks, leasing finance and savings banks which form the core of the financial system in Malawi. In 1964 the commercial bank industry was dominated by two foreign banks, Standard bank and Barclays bank (Chirwa & Mlachila, 2004). The other players were New Building society (NBS), Post Office Savings Bank and National Mercantile Credit Limited

which eventually changed to National Finance Company (Chirwa & Mlachila, 2004). In 1965 the Reserve Bank of Malawi was established (RBM, 2008). Other banks were gradually incorporated into the financial sector, starting with the Commercial bank of Malawi (CBM) in 1970. In 1971, National Bank of Malawi (NBM) was born following the amalgamation of Standard Bank and Barclays Bank. From then to around 1995, the banking sector was dominated by NBM and CBM (Chirwa & Mlachila, 2004). As at 31st December 2016, the banking sector comprised of fourteen financial institutions; eleven banks, one leasing company and two discount houses. These banks were National Bank of Malawi, Standard Bank, First Merchant Bank, NBS Bank, Opportunity Bank, FDH Bank, FINCA Bank, CDH Investment Bank, New Finance Bank, NEDBANK and Eco Bank. The other financial institutions were Leasing Finance Company (LFC), Continental Discount House and First Discount House.

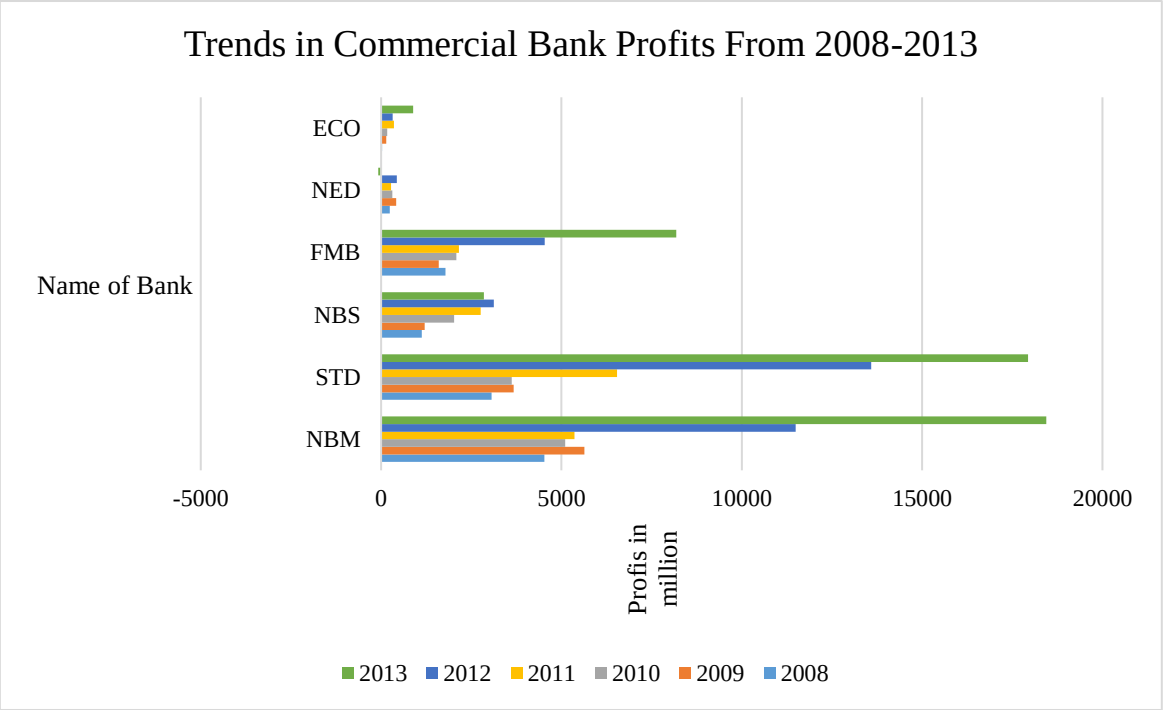
2.3 Commercial Bank Performance and Non-interest Income

The increase in diversification to non-interest income is attributed to increase in efforts by commercial banks to open up more avenues of income that is less risky than interest income. Noninterest income can increase the commercial bank's revenue in several ways; the first way is through satisfying diversified needs for financial services, investment consultation, and so forth by continuous innovation of new financial products and services in order to gain more fees and commission and strengthen the market competitiveness; the second way is through improving the investment level of commercial banks in financial markets to gain the investment income from bonds and stocks; the third way is through enriching income from gains or losses of exchange and profits or losses from changes of fair value and other business (Sun et al., 2016).

The operating costs of noninterest income mainly consist of labour costs, marketing expenses, and administrative expenses. When new noninterest financial products are released, the commercial banks have to pay much more to market new services than those invested in traditional interest income activities and the operating costs will rise greatly (Sun et al., 2016).

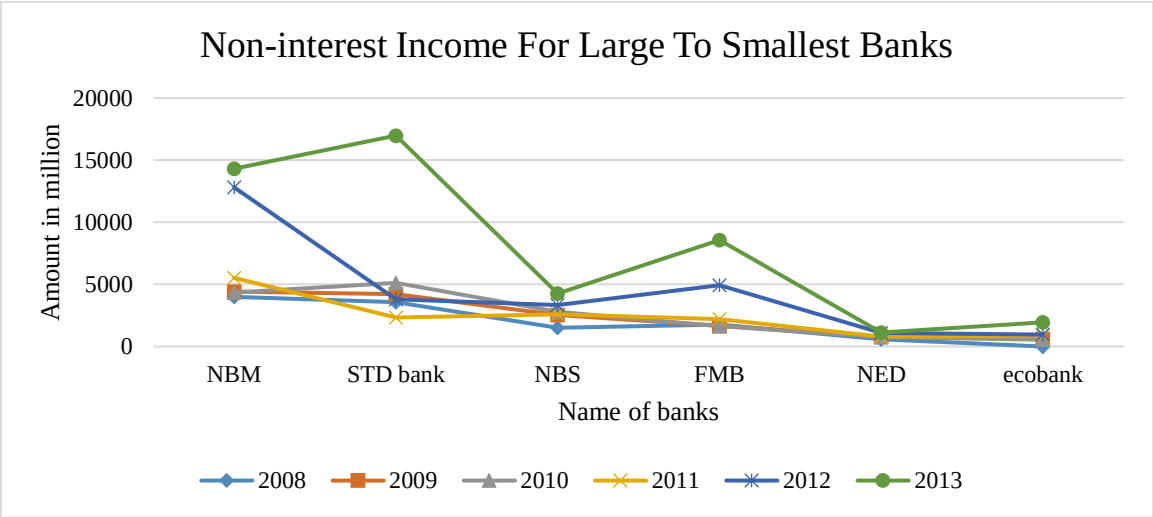
This section looks at the performance of the six commercial banks under the study in comparison with the contribution of non-interest income within the same period. These banks have been aligned from the largest bank in terms of assets to the smallest with National Bank of Malawi being the largest and Eco bank being the smallest. Figure 2 gives the performance of the banks in terms of profits and Figure 3 presents the contribution of non-interest income to the performance of the commercial banks during the period under study;

Figure 2: Commercial Bank Profits from 2008-2013



Source; Reserve Bank of Malawi

Figure 3: Non-interest Income for the Commercial banks from 2008-2013



Source: Reserve Bank of Malawi

From figure 2 it can be observed that for large banks and thus NBM and STD bank they have registered huge profits as compared to the other banks during the period of study. In figure 3, within the same period, it can also be observed that the two banks had a significant growth in non-interest income as compared to the other banks. It can also be observed that medium banks and thus FMB and NBS registered higher profits than the small banks Eco bank and Nedbank. It can be observed further from the two figures above that profits and non-interest income have been growing in the same direction throughout the period of study. This trend is quite observable in the large banks where the contribution of non-interest income is greater and so are the banks registered profits. This could be due to the characteristic of non-interest income of being less risky and also large volume of business transaction by the large banks. This study will therefore analyze empirically in the next chapters whether non-interest income has impacted on the bank profitability of the commercial banks in Malawi.

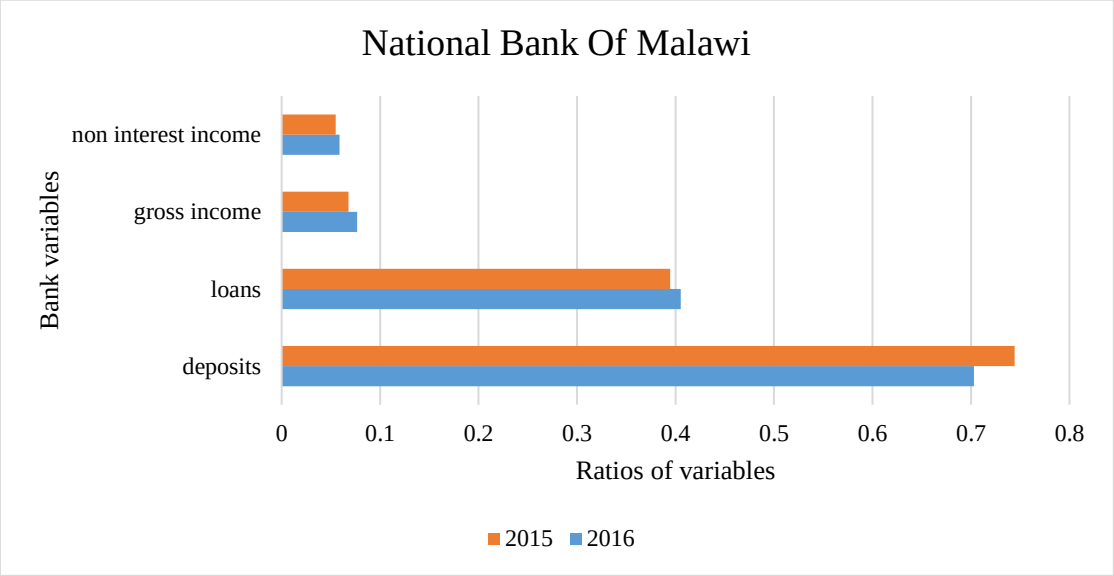
2.4 Recent Commercial Bank Performance

This segment analyses the recent performance of Malawian commercial banks that are listed on the Malawian stock exchange. There are basically four banks that are listed on the market. These are given in terms of their asset base as follows;

2.4.1 National Bank of Malawi

As at December 31st 2016, the banks total assets were valued at MK 329 billion making it the largest commercial bank in Malawi. In terms of performance, in the year end 31 December 2016, the Bank registered a 29 percent growth in the Group profit before tax from K19.62 billion to K25.25 billion. Loans and advances to customers grew by 17 percent while total income grew by 35 percent. In terms of non-interest income which is a component of the total income, the bank registered a 59 percent increase in non-interest income which was however below the banks expectation (NBM, 2017).The Non-interest income stood at MK 13.3 billion. The Bank however managed to achieve satisfactory results despite the challenging economic environment and the once off Indebank integration costs demonstrating its resilience and agility. Figure 4 depicts the bank's performance with respect to non-interest income.

Figure 4: Non-interest income for the commercial banks from 2008-2013

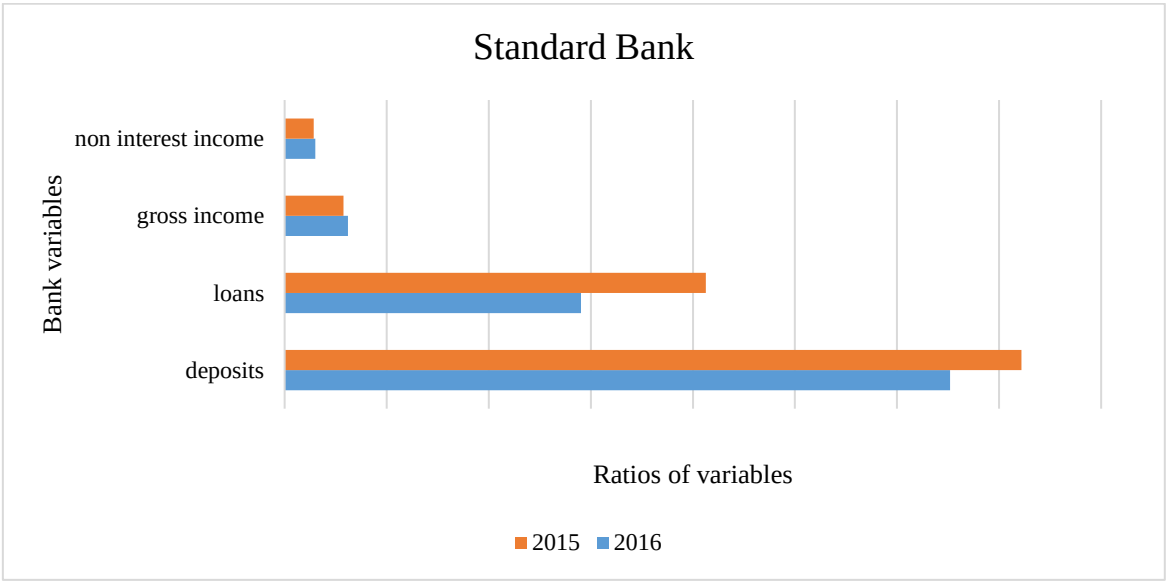


Source: NBM

2.4.2 Standard Bank of Malawi

As at December 31st 2016, the banks total assets were valued at MK 314 billion and therefore making it the second largest bank in Malawi after National bank. In terms of performance, the current performance as at 31st December 2016 indicates that the Group's performance was strong considering the tough economic environment (STDBank, 2017). Total assets grew by 35 percent over the same period in the prior year. In the prior year, the bank experienced a decrease in loans and advances to customers by 5 percent. However, loans and advances to banks were 125 percent above the prior year due to investment of excess liquidity. The Group managed to register profit after tax of MK19.4billion which represented a 45 percent growth year on year. Non-interest income grew by 22 percent due to increased volumes in the transactional business. The growth in non-interest income for Standard bank is way below comparing to that of National bank. Non- interest income stood at MK 9.5 billion. Figure 5 depicts the bank's performance with respect to non-interest income.

Figure 5: NBM Performance for the year ending 31st December 2016



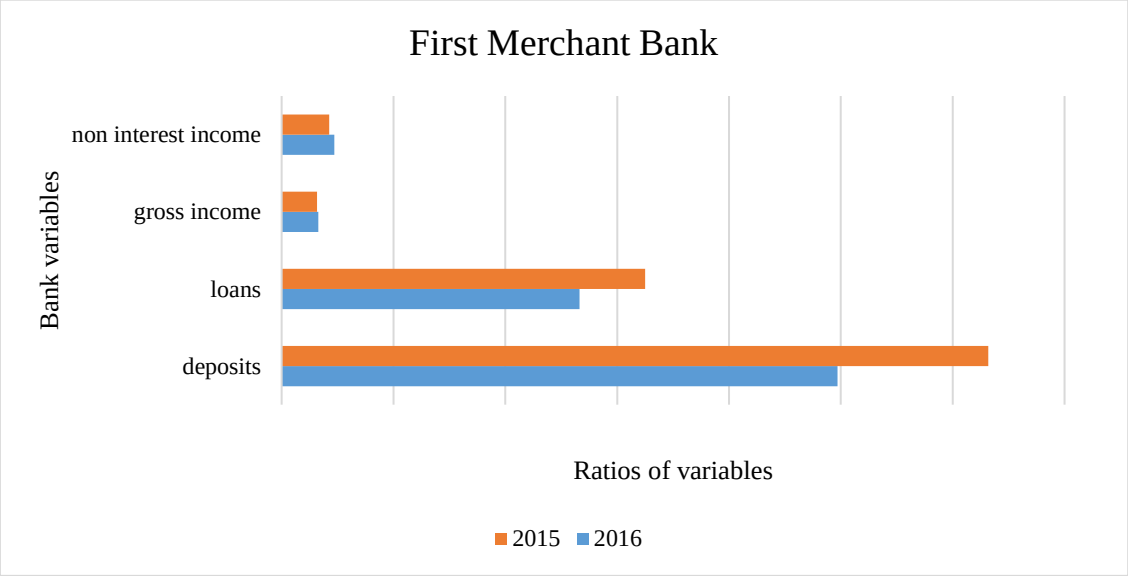
Source: Standard Bank of Malawi

2.4.3 First Merchant Bank

As at December 31st 2016, the banks total assets were valued at MK 158 billion and hence making it the third largest bank in Malawi. In terms of performance, the bank attributes the poor performance to the macro-economic shocks of 2015 and argues that these were continued to be felt at the beginning of 2016 (FMB, 2017).Notwithstanding the adverse economic conditions, the FMB Malawi posted profit after tax of K 5.184 billion, representing a 33 percent increase from 2015.Total assets increased to K 158 billion from K 124 billion representing 27 percent growth. In terms of non-interest income, it grew by 41 percent and it has been highly attributed to increased volumes of business transactions. Non-interest income was valued at MK 7.4 billion.

Figure 6 gives a graphical analysis of the performance of the banks with respect to non-interest income;

Figure 6: FMB Performance for the year ending 31st December 2016



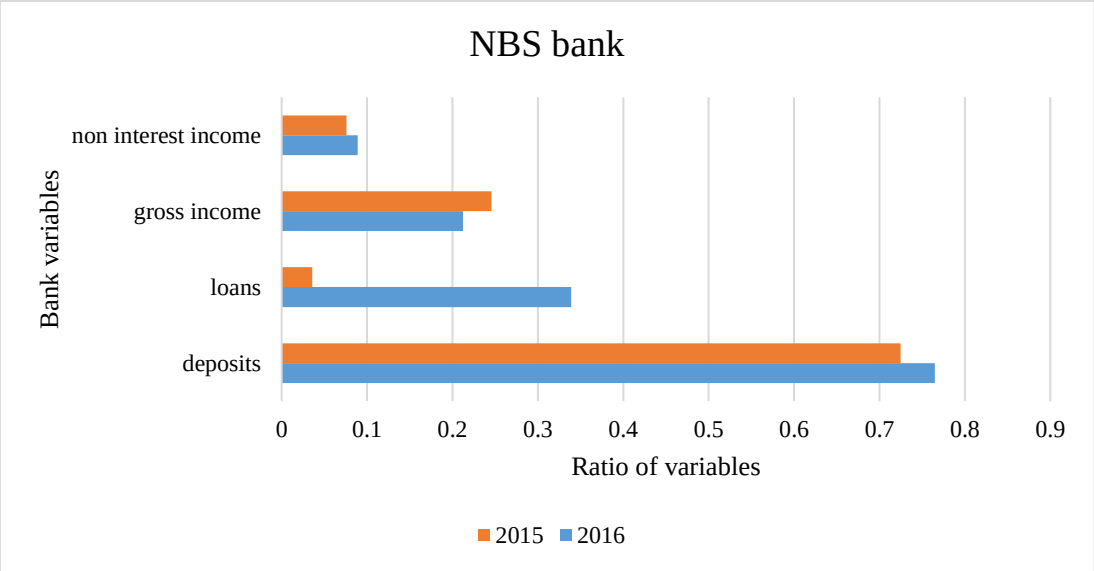
Source: FMB

2.4.4 NBS Bank

As of December 31st 2016, NBS bank had a value of total assets of MK 87 billion making it the fourth largest bank. In terms of performance, the Bank and its subsidiary, NBS Forex Bureau Limited reported a loss before tax of MK4, 854 million for the year ended 31 December 2016 (December 2015: loss of MK 236 million) and net loss after tax of MK4, 330 million (2015: Net loss MK 195 million).The loss for the year ended December 31, 2016 is largely attributed to two factors, a drop in Interest Income and sharp increase in other operating expenses, (NBSBank, 2017). Total gross income at MK18, 492 million was 10.3 percent lower than the MK 20,627 million realized in 2015 due to a decline in Net Interest Income (MK10, 757 million in 2016 against MK14, 254 million in 2015, a drop of 24.5 percent). Total deposits at MK66, 534 million (2015: MK 60,889 million) grew by 9.3 percent while net loans and advances at MK29, 496 million (2015: MK30, 140 million) decreased by 2.1percent due to tightening of credit risk appetite (NBSBank, 2017).Other investments grew by 26 percent from K13, 835 million to K17, 409million. Total assets grew by 4 percent (MK2.7 billion) in the year, mainly as a result of increase in money market investments. In terms of Non-

Interest Income, it stood at MK7, 736 million and was 21.4 percent higher than the MK 6,373 million realized in 2015. Figure 7 depicts the bank's performance with respect to non-interest income.

Figure 7: NBS Performance for the year ending 31st December 2016



Source: NBS Bank

2.5 Metrics used in measuring Bank profitability

Modelling profitability based on performance has assumed a high significance in the banking sector due to the rising concern about fast changing consumer preferences, intensifying competition and future regulatory requirements (PWC, 2011). This serves as a strong and comprehensive means to measure the performance by assessing the extent of operational efficiency as well as taking into account the nuances of bank's diversified earnings through non-interest income activities and cost management (PWC, 2011). Table 2 gives the metrics for measuring bank profitability based on performance.

Table 1 Metrics for Measuring Bank Profitability

Metric	Name	Derivation	Basis	Purpose
ROA	Return on Assets	Net profit after tax/total assets	Assets	Asset management with no risk impact
ROE	Return on Equity	Economic profits/Assets	Equity	Return on equity without risk impact
ROI	Return on investment	Economic profit/economic cost	Economic	Fully risk based profitability

Source: Price Waterhouse Coopers, 2011

In this study Return on asset (ROA) is chosen as the proxy for bank profitability instead of the alternative return on equity (ROE) and Return on Investment (ROI) because an analysis of ROE neglects financial leverage and the risks related to it (Flamini, McDonald, & Schumacher, 2009). While Return on investment (ROI) is side-lined because its analysis is unpredictable because it is possible to increase ROI such that it is consistent with the bank's strategy in the short run but may end up harming the bank in the long run (DeYoung & Rice, 2004). ROA, in another view may be biased due to off-balance-sheet activities but it is alleged that such activities are insignificant in Sub Saharan Africa banks while the risk associated with leverage is likely to be substantial despite the institutional innovations that these financial institutions incorporate in order to compensate for informational asymmetries (Flamini, McDonald, & Schumacher, 2009).

2.6 Policies that have led to increased diversification to Non-interest income

The main policy that has led to increased diversification to non-interest income in the Malawian baking sector is the Bank rate policy which is regulated by the Reserve Bank of Malawi (RBM) through the monetary policy committee. The bank rate in Malawi is considerably the highest in the SADC region and thus it consequently affects the commercial banks' lending rate which is too high. The bank rate, for example, was 25% in 2004 was brought down to 13% in April 2012 then raised to

16%, 21 and 25% in May, July and December 2012 and remained at that level up to December 2013 after which it was renamed the Policy Rate (PR) aimed at influencing bank behaviour with a new one the Lombard Rate or facility at 2% above the PR expected to be the one at which commercial banks would be borrowing from the central bank(Kaluwa & Chijere, 2016). In 2015, the bank rate was raised to 27% and in 2016 it was brought down back to 25% until March 2017 when it was reduced to 22%.

Therefore, following such trends in movement of the bank rate, the commercial bank lending rate has been too high and hence it led to high risk of lending and default. As such commercial banks resorted to diversification to non-interest income as a way of minimising risk. The Table 2 shows the trends in the movements of the Maximum lending rates (MLR) of the Commercial banks in Malawi.

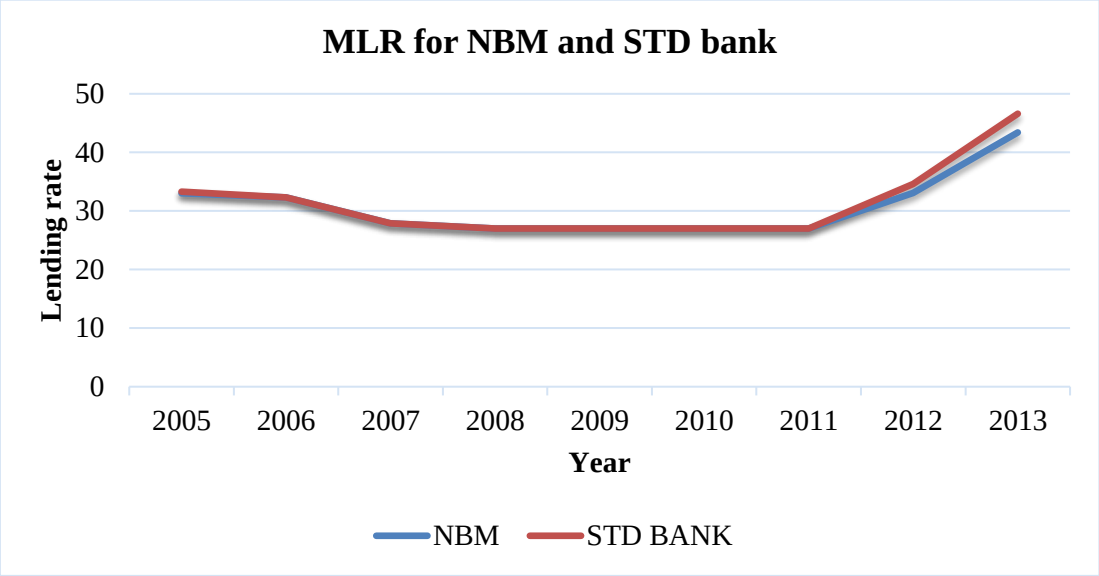
Table 2 Maximum lending rates for commercial banks in Malawi

Year	NBM	STD BANK	Average*
2005	33.00	33.30	33.20
2006	32.30	32.30	32.30
2007	27.90	27.90	27.90
2008	27.00	27.00	27.00
2009	27.00	27.00	27.00
2010	27.00	27.00	27.00
2011	27.00	27.00	27.00
2012	33.10	34.60	33.80
2013	43.40	46.60	45.00

Note: * average of NBM and Standard Bank

It should be further noted that before 2012, MLR was only available for the two largest banks, the other banks used an average. The figure 8 depicts the trends in the MLR for the two commercial banks in Malawi.

Figure 8: Trends in MLR for STD bank and NBM



Source: Reserve Bank of Malawi

From figure 8 above it can be observed that the MLR on average has been above 26% and thus this has impacted highly on the risk associated with interest earning portfolios which forced commercial banks to resort to Non-interest income which has low risk in nature.

Economic Reforms that were conducted to create a conducive macroeconomic environment have also lead to increased diversification to non-interest income and hence influenced the banking system. The adoption of a flexible exchange rate regime departing from the fixed regime in 2012 led to increased commissions obtained from forex trading and eventually led to increased revenue obtained from Non-interest income.

2.7 Summary

This Chapter provided a brief account on the evolution of the commercial banks in Malawi, the recent performance of banks with respect to non-interest income and the policies that has led to increased diversification to non-interest income.

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CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

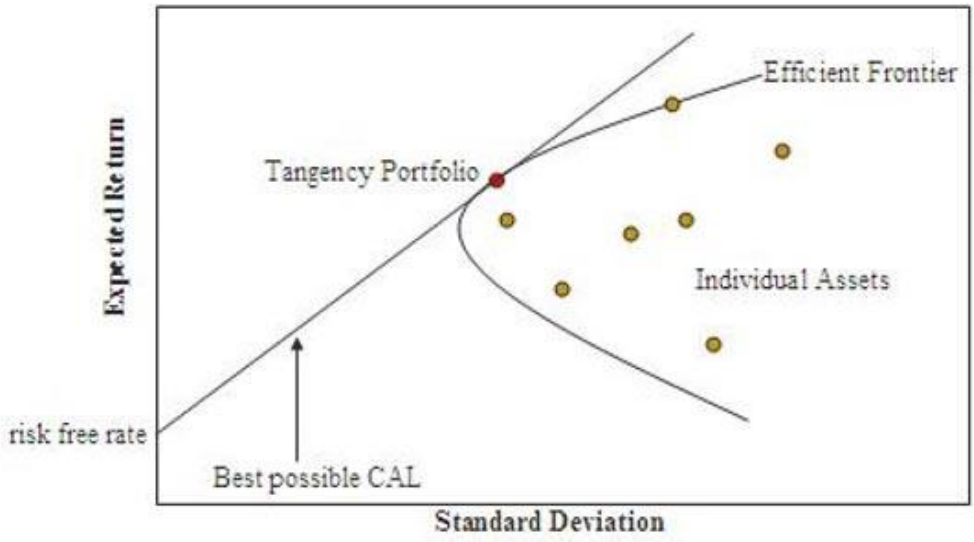
This Chapter endeavors to explore and review the existing theories and empirical studies that have been undertaken on the impact of non-interest income on the profitability of commercial banks. It also assists in the choice of an appropriate methodology for econometric analysis.

3.2 Theoretical Literature

3.2.1 Morden Portfolio Theory

This theory was first introduced by Markowitz (1959) as the Harry Markowitz (H.M) model to help in providing a normative approach to investors' decision to invest in assets or securities under risk and hence helps to explain the best possible diversification. This investment theory was purportedly developed to help financial investors to maximize a portfolio's expected return by altering and selecting the proportions of the various assets in a portfolio. The most important and widely used concept of this theory is called the Efficient Frontier and is presented in the figure below;

Figure 9: Illustration of APT theory



Source: H.M Markowitz (1959)

His model is based on the assumption that investors are rational, risk averse, they have a single period investment, they prefer to increase consumption and that investors will choose the best portfolio out of the efficient set that is along the efficient frontier in the above figure. Therefore, from portfolios that have the same returns rational investors will prefer the portfolio with low risk to the ones with high risk, at the same time they will also prefer portfolios that have the same risk levels so as to earn high returns. The return of these securities is assumed to be normally distributed meaning that the mean and variance analysis is the basis of portfolio decision. Investors under this model *Ceteris Paribus* will therefore hold a well-diversified portfolio instead of investing their entire wealth on single asset or security. This theory well explains how bank's diversify their portfolios from interest earning activities which are associated with high risk to non-interest income which offers low risk but offers high returns and hence leading to bank profitability.

However, this theory assumes certainity which is unrealistic in the real world and it would be good if well behaved solutions were obtained in a free manner when the set of investment assets is close to the available investment opportunity which is not often the case.

3.2.2 Arbitrage Pricing Theory

This theory was first developed by Ross (1976), it is an asset pricing theory that states that the anticipated investment return or financial assets can be modelled to form a linear correlation of different macroeconomic variables. The change in correlation extent is represented by a beta coefficient**.** Ross (1976) developed the Arbitrage Pricing Theory as an alternative to Capital Asset Pricing Model (CAPM) due to the decreased satisfaction of applicability of CAPM both on a theoretical and empirical basis. CAPM is based on the effectiveness of mean standard deviation of the market portfolio.

CAPM is derived from the initial principles of expected utility theory and is consistent with recognized empirical view and there is a normal variability in asset prices. However, Ross (1976) asserted that the suppositions of fundamentally expected utility theory did not employ standard variability but CAPM made distinct between non-diversifiable and diversifiable risks. CAPM's model is a linear model in which the typical variation in returns is due to one variable and the real returns deviate from the standard variable by an extra random disturbance. This results in the assumption that the model is composed of two parts, one being random and other systematic. However, there exists a possibility of diversifying the random component leaving investors with systematic risk. While in APT, there are at least two variables and one not being an actual market value. APT model maintains majority intuitive CAPM outcomes and is developed on linear return generating process as one principle but does not use any utility proposition apart from monotonicity and concavity for greed and risk aversion.

Arbitrage Pricing Theory is essential to this study in determining the correlation between non-interest income and profitability of commercial banks in Malawi as it will give the opportunity to analyse variant variables.

3.3 Factors Affecting Bank Profitability

This section will discuss a number of factors that affect bank profitability. Bank profitability occurs when banks earn more revenue than the expenses that they incur during a defined financial year. The revenue is generated from the interest that the bank earns from the assets as well as the non interest income that the bank earns from different transactional charges. On the other hand bank expenses include the interest that the banks pay on its liabilities. Bank profitability is influenced by internal factors and external factors which neither management nor shareholders of firms can control. These are Non-interest income, Capital adequacy, Liquidity, Bank size and Operational efficiency.

3.3.1 Non-interest Income

Bank's non-interest income is the proceeds mainly from service and penalty charges, asset sales and property leasing. Commercial banks sources of income include interest income, non-interest income and other incomes. Interest income is also known as traditional source of income. Most commercial banks rely heavily on traditional source of income. However, this source of income has lost important regulatory protection as new competition has emerged from non-bank financial institutions which have significantly reduced interest income earned by commercial banks (Atellu, 2004).

3.3.2 Capital Adequacy

Capital adequacy is defined as the ratio of total capital to total risk weighted assets. The Signalling Theory argues that there is a positive relationship between a bank`s capital level and its profits. Capital adequacy is an indicator of a bank`s profitability. According to literature, this variable is proxied by the ratio of equity to total assets of a bank or by the ratio of capital and commercial bank’s reserves to total assets. Mostly, high capital ratio banks *ceteris paribus* reasonably face low financial hitches in case of a general financial crisis in an economy which converts to high profits (Atellu, 2004). Banks that have adequate capital possess the ability to meet the monetary authority regulation on capital requirements and then use the surplus capital into loan provision (Onianga, 2014).

3.3.3 Liquidity

Liquidity of a business is its capacity to pay off the debt obligations that are short-termed (Atellu, 2004). Liquidity has an impact on bank profitability and is measured by the ratio of net liquid assets to net liquid liabilities. DeYoung and Rice (2004), argued that the reason why banks and more specifically financial intermediaries exists so that they mitigate the problems that prevent the direct flow of liquidity from depositors to borrowers. They argued that contracting costs, informational asymmetries and scale mismatches between depositors and borrowers are the causes of these problems.

Individual bank liquidity is of high significance on the entire banking sector of an economy because one bank's shortfall can have repercussions on the whole sector (Atellu, 2004). Usually, the opportunity cost for banks holding high levels of liquidity is the investment that was likely to bring more returns (Atellu, 2004). Literature has shown that a nexus exists between liquidity and profitability. Amankwaa et al. (2014), concluded that liquidity, deposits by customers and exposure to risk are common factors among banks in Ghana that affect profitability.

3.3.4 Bank Size

Bank size is measured by the volume of its total assets. Commercial banks (especially the small banks) should therefore make every effort to increase their size by diversifying their products through investing for instance, in financial market and selling mutual funds in the market. Size of a firm in general is the speed and extent of growth that is ideal and this growth can be in terms of revenue, profits, assets or number of employees which are all essential for increased financial performance and profitability (Atellu, 2004).It is argued that large banks are more likely to manage their working capital more efficiently than small banks. This is simply because most large banks enjoy economies

of scale and therefore are able to minimize their costs and improve on their financial performance (Atellu, 2004).

3.3.5 Operational Efficiency

According to financial literature, a bank's net profit margin is a reflection of business efficiency in terms of the efficient use of its assets. In the banking industry, it is measured as a ratio of total costs to total income. Atellu (2004) argues that although a better performance is determined by a high return margin, a low return margin does not automatically imply that a bank's return on assets turnover is low. Operational efficiency can be defined as the capability of a business to deliver quality commodities to customers in the most cost-effective manner possible at a desired point in time. Kalluru and Bhat (2009) defines operational efficiency as the proficiency of a corporation to curtail the unwelcome and maximize resource capabilities so as to deliver quality products and services to customers.

For depository institutions, fee income is one of the most fast growing sources of income (Rose and Hudgins, 2008). Since the 1980s, a factor that has played an important role in improving bank's total operating income is revenue from non-traditional activities (Lepetit, 2008). According to Stiroh (2004), there is increased dependence on fees, service charges, fiduciary income and other types of non-interest income by Unites States banks. They stated that 42 percent of the whole industry's net operating income was generated from sources related to non-interest income in 2004 which was a significant increase from 32 percent in 1990 while in 1980 it was 20 percent.

A major factor that has necessitated that banking corporations should be innovative and proactive in their undertakings is the modern dynamics in the banking business (Dermirguc-Kunt & Huizinga, 1998). According to Nachane and Ghosh (2007), the rise in bank's off-balance sheet (OBS) activities is one of the important dimensions of the financial innovations developments. Though these developments have been deemed as not entirely new from a historical point of view, in recent years there has been a great expansion both in range and scope. It is further argued there has been a

transformation of the specific products and services through which the fundamental functions of banks and other financial institutions are provided even though the functions themselves have remained constant (Smith et al., 2003). According to Smith et al. (2003) activities that generate non-interest income may lead to a general increase in bank risk through income volatility although this component is important in revenue generation. Demirgiic-Kunt and Huizinga (1998) observed that low bank profitability is due to fairly high non-interest earning assets

3.4 Empirical Literature

Guyo (2013) in his study showed that the performance of banks is influenced significantly by bank characteristic variables such as capital adequacy, interest rate spread, size, and liquidity. He further showed that profitability has a strong and negative association with asset quality and management efficiency. Bourke (1989) argues that the association between capital adequacy and bank profitability is of positive significance. He studied profitability of banks from twelve countries that were selected from North America, Europe and Australia. His conclusion was that higher bank profitability is attributed to a high capital ratio.

Köhler et.al (2013), analysed the impact of banks' non-interest income share on risk in the banking sector of Germany from 2002 to 2010. They found out that the bank's business model influences the impact of non-interest income on risk. There are two important varying implications of their study. First implication is that they point out that it might be helpful for retail-oriented banks to increase their share of non-interest income in order to attain stability. They observed that increase in non-interest income share by investment-oriented banks in contrast makes them become significantly less stable. Their results generally imply that a diversified structure of income and low dependence on either interest or non-interest income leads to more bank stability. The second implication is that the breakdown of non-interest income into fee and commission and trading income shows that the impact on stability emanates from fee and commission revenue.

Williams (2014) studied on the impact of non-interest income on Bank risk in Australia. He concentrated on the relationship between bank revenue composition and bank risk in Australia. He used data obtained from Australian bank confidential regulatory returns. His study found that banks with both low levels of non-interest income and high revenue concentration are less risky. He also found non-interest income to be risk increasing, however he proposed that some non-interest income types may be risk reducing if bank specialization effects are taken into consideration. He then concludes that caution must be taken during selection of the suitable peers for benchmarking in order to reflect a difference in income composition.

Chiang et.al (2014) examined the non-interest income, profitability, and risk in banking industry: A cross-country and risk for 967 analysis. Their study used bank accounting data for 22 countries in Asia from 1995 to 2009 and applied the dynamic panel generalized method of Moments technique to examine the impact of non-interest income on profitability distinct banks. They found out that non-interest activities of Asian banks reduce risk, however they observed that it does not increase profitability on a general sample basis. They argue that Non-interest activities decrease profitability at the same time increasing risk for savings banks. They further argue that on the other hand, non-interest activities raise risk for banks in developed economies while increasing profitability or reducing risk for banks in less developed and least developed economies. Their findings indicate that the persistence of risk is mainly affected by bank specialization and income level of a country since all risk variables present persistence from one year to the next.

Amankwaa et.al, (2014) in their study on the analysis of Non-Interest Income of Commercial Banks in Ghana, established some factors common with banks that indulge in non-interest earning activities. They found that smaller banks are more involved in non-interest earning activities as compared to the large banks. They observed that higher interest income, customer deposits, exposure to risk and liquidity were the common features among banks in Ghana that focus more on non-interest income generation. They further observed that the banking operations are affected by the central bank's prime rate and that it is positively related to bank's engagement in non-traditional activities. On the

Implication of the results, they propose that monetary authorities must introduce regulations that lead to the harmonization of the various sources of bank revenue against likely risk exposures.

In the Malawian context, Chirwa (2003) looked at the determinants of banks' profitability in Malawi. He investigated on the relationship between market structure and profitability of commercial banks. Using a cointegration and error correction mechanism he found out that there is a long run positive relationship between profitability and concentration, capital-asset ratio, loan asset ratio and demand deposit ratio. Kanyoma (2006) evaluated the impact of privatisation on the performance and operating efficiency of privatised banks in Malawi using data covering period from 1994 to 2004. He found no significant evidence that bank privatisation in Malawi is associated with high profitability, high output, improved net income efficiency, low deposits-assets ratio and employment levels. Chimkono (2015) investigated the effect of non-performing loans on the financial performance of commercial banks in Malawian banking sector. He carried out his regression analysis using a correlation technique and found out that non-performing loan ratio, cost efficiency ratios and average lending interest had a significant effect on the performance of banks in Malawi. However, cash reserve ratio was positively related to banks but not significant.

In other studies, Kaluwa and Chijere (2016) investigated on competition and banking industry regulation in Malawi. They carried out the study under the hypothesis that high market concentration in the banking industry can facilitate collusive pricing outcomes with adverse impact on the low-income and on important but low-return segments of the economy. They incorporated bank specific, industrial specific and macroeconomic determinants of conduct and performance of commercial banks. They found out that there is asymmetric pricing conduct with price leadership collusion on lending rates and competitiveness on the deposit side, with the former facilitated by selective regulatory stipulations on reporting of maximum lending rates by the largest commercial banks.

3.5 A Summary of the Literature Review

The impact of Non-interest income on commercial bank profitability in the financial sector has attracted a lot of theoretical and empirical literature. The literature has shown that non-interest income has affected positively on the profitability of commercial banks thus influenced increased diversification into this area. There is limited literature on the impact of non-interest income on profitability of commercial banks in Malawi. This study therefore is going to contribute to the existing literature as to whether non-interest income has affected significantly on the profitability of commercial banks in Malawi or not.

CHAPTER FOUR

METHODOLOGY

4.1 Introduction

In this chapter, the study presents the methodology and the characteristics for various variables used in modelling. The study considered different data sources and data analysis methods. From the preceding chapter, which comprises theoretical and empirical literature, we obtain information on how best to model the impact of non-interest income on commercial banks profitability in Malawi.

4.2 Analytical Framework

To investigate the impact of non-interest income on commercial bank profitability, there is need to provide an analysis on the strategies that modern commercial banks are employing in order to increase their profitability. Traditionally, net income has been the common measure that has been used to measure bank performance. However, it is less effective because of its measurement of bank function in relation to size and there is no true reflection of asset efficiency (PWC, 2011). The metric used in the traditional practice, net income margin (NIM) only captures the spread between the interest costs and earnings on bank's liabilities and assets and shows how good the bank manages its assets and liabilities. However it fails to measure the operational efficiency (PWC, 2011).

Bank profitability is usually expressed as a function of internal and external factors. The internal factors are the factors that are under the control of management while the external factors trace the effect of the macroeconomic environment on bank performance. These are discussed as follows;

(i) Internal determinants

The internal determinants originate from the bank accounts (balance sheets or profit and loss accounts) and they could be termed as bank-specific determinants for profitability. Internal determinants for profitability can be defined as those factors that are influenced by management

decisions and the policy objectives. Management effects results into the differences in bank management objectives, policies, decisions and actions reflected in bank operating results including profitability.

(ia) Balance Sheet

The balance sheet is an integral part of financial statements that highlights the financial position of a bank at a single point in time (Roll & Ross, 1980). It reflects the bank's management policies and decisions in allocation of resources (Wolfe, 2010). Balance sheet items are direct indicators of the earning power and the cost of banks. From the financial statement, a variety of variables capable of influencing the bank's performance can be discerned. The determinants that receive most attention in the banking literature are costs, assets and liability composition and size (Athanasoglou, Delis, & Staikouras, 2006). As a measure of bank costs, the capital ratio has long been a valuable tool for assessing capital adequacy and captures the safety and soundness of banks. It is generally believed that well capitalized banks face lower expectation costs of financial distress mainly due to the transactional charges they impose which is then translated into high profits.

(ib) Income Statement

While the balance sheet concentrates on a bank's financial position, the income statement measures the success of its operations for a given period of time (Wolfe, 2010). Ratios obtained from the income statement are also known as operations ratios because they illustrate the management efficiencies in generating revenue and at the same time controlling cost. One of the most important internal factors that is constructed from the income statement is the efficiency in the expenses management. As the conventional wisdom suggest, the higher the expense of the bank, the lesser the bank's profitability will be.

(ii) External determinants

The external determinants in this study are macroeconomic and the market specific variables which are described as follows;

(iia) GDP

This is one of the most common measures of economic activity in a country. It has been used in many studies as a control for cyclical output effects. Dermirguc-Kunt and Huizinga (1998) found a positive correlation between bank profitability and business cycle.

(iib) Inflation

Inflation is often cited as a significant determinant of bank profitability. Perry (1992) states that the extent to which inflation affect bank profitability depends on whether inflation is fully expectations are fully anticipated. If inflation rate changes are fully anticipated by the banks management, it implies that banks can appropriately adjust interest in order to increase their revenues faster than their cost and thus acquire higher economic profits.

A regression equation is framed to represent our model using a basic linear equation as follows.

$$\pi_{it} = \alpha + \sum_{k=1}^{k} B_k X_{it}^{k} + \sum_{n=1}^{n} B_1 X_{it}^{K1} + \sum_{j=1}^{j} B_2 X_{it}^{k2} \sum_{m=1}^{m} B_m X_t^{m} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where: $\pi_{it}$is the non-interest income of bank i at time t, with i = 1, …, N, t = 1, …, T ;

α is a constant in the regression equation,

$X_{it}^{k}$is a vector of bank-specific characteristics (K) during period t;

$X_{it}^{n}$is a vector of market conditions variables (n) of bank during period t.

$X_t^{m}$is a vector of macro-economic variables (m) at period t and

$\varepsilon_{it} = \vartheta_i + \omega_{it}$ is the error term with ϑ_i being the unobservable bank specific effects across commercial banks which may vary due to differences in management and ω_{it} the

remainder/idiosyncratic error. This is a one-way error component regression model, where $\vartheta_i \sim IIN(0, \delta_\vartheta^2)$ and independent of $\omega_{it} \sim IIN(0, \delta_\omega^2)$

4.3 Model Specification

The study adopts a model used by DeYoung and Rice (2004) to estimate the impact of non-interest income on bank performance in Malawi. The model captures the impact of non-interest income, bank characteristics market conditions and macro-economic conditions on bank profitability. Balance sheet and income statement information were obtained from the Reserve Bank of Malawi and Bank scope database, the IMF's International Financial Statistics (IFS) and Global Data Source dataset (GDS) was also used along with the World Bank database for the macroeconomic variables and thus inflation.

There are numerous justifications regarding the general use of Panel data techniques. These are: First it is quite beneficial in giving more informative data because it comprises of both cross sectional information, which depicts individual variability, and the time series information, which depicts dynamic adjustment (Woodrigde, 2000). In brief, a Panel model helps to detect a common group of characteristics while at the same time, taking into account the heterogeneity that is present among individual units (Woodrigde, 2000). Second, this technique permits for the study of the impact of macroeconomic developments on profitability after controlling for bank specific characteristics, with less collinearity among variables, more degrees of freedom and greater efficiency (Athanasoglou, Brissimis, & Delis, 2005).

A dynamic Panel data regression technique is used in this study to analyse the determinants. The justification for the use of the dynamic panel data model is that the model further specified with one period lagged term of profitability to capture the fact that bank profits tend to be persistent overtime (due to market structure imperfections or high sensitivity to auto-correlated regional or macroeconomic factors) such that profits of the previous time period can be reflected in the current period. However according to Berger (1995) the introduction of a lagged term may cause the estimates

to be inefficient and inconsistent, and as such a dynamic panel data estimation will be estimated using the Allerano and Bover General Method of Moments estimation technique. The Allerano and Bover is adopted because it is suitable for time-invariant variables and accommodates small values of T.

The general model is specified as follows;

$$\pi_{it} = \alpha + \delta\pi_{i,t-1} + \sum_{k=1}^{k} B_k X_{it}^{k} + \sum_{n=1}^{n} B_1 X_{it}^{K1} + \sum_{j=1}^{j} B_2 X_{it}^{k2} \sum_{m=1}^{m} B_m X_t^m + \varepsilon_{it} \dots\dots\dots\dots\dots (2)$$

Where: $\delta\pi_{i,t-1}$ is the one period lagged profitability and δ is the speed of adjustment to the equilibrium. A value of δ between 0 and 1 implies that profits persist, but they will eventually return to normal (average) level (Athanasoglou, Brissimis, & Delis, 2005). A value close to 0 means that the industry is fairly competitive (High speed of adjustment), while a value of δ close to 1 implies less competitive structure (very slow adjustment) (Athanasoglou, Brissimis, & Delis, 2005).

And the estimated equations for this study is given as follows;

$$ROA_{it} = \alpha_1 + \delta ROA_{i,t-1} + \alpha_2 CAPRAT_{it} + \alpha_3 SIZE_{it} + B_2(SIZE)^2 + \alpha_4 LOARAT_{it} +$$

$$\alpha_5 EQRAT_{it} + \alpha_6 NIIT_{it} + \alpha_7 GDP_{it} + \alpha_8 INFL_{it} + \varepsilon_{it} \dots\dots\dots\dots\dots (3)$$

Where: ROA is the return on assets ratio which is used to measure performance,

CAPRAT is the capital to assets ratio,

SIZE represents size of the bank,

LOARAT is the loans to assets ratio,

EQRAT captures the equity to assets ratio,

NIIT is non-interest income to assets ratio.

GDP represents the rate of economic growth and,

INFL denotes inflation over a period of time in the study.

ROA reflects actual performance that every investment unit has over a particular period. It reflects how well the bank management uses bank's real investments resources to generate profits (DeYoung & Rice, 2004). One of the ways to obtain ROA is the multiplication of asset turnover with the profit margin that reflects performance (profit) with respect to total return element on assets (Higgins, 2001).

Capital-assets ratio (CAPRAT): Represents the ratio of equity capital to total assets. It can be noted that the higher the capital level, the higher the profitability level since by having more capital a bank can easily adhere to regulatory capital standards so that excess capital can be provided as loans. CAPRAT represents the ratio of equity capital to total assets for bank ***i*** at time ***t.***

Size (SIZE): it is used to capture the fact that larger banks are better placed than smaller banks in harnessing economies of scale in transactions to the effect that they tend to enjoy a higher level of profits. The total assets of the banks is used as a proxy for bank size. SIZE represents natural logarithm of Total Asset (SIZE) for bank ***i*** at time ***t***.

Size Squared $(SIZE)^2$: is used to capture the fact that the more the bank grows due to economies of scale, it will reach a point where a further increase in size will lead to a negative impact on profitability and thus diseconomies of scale.

Loans-assets ratio (LOARAT): is the main source of income and is expected to have a positive impact on bank performance. This ratio is a good proxy for bank strategy. Other things constant, the more the depots are transformed into loans, the higher the interest margin and profits. However, in a case where a bank needs to increase risk to have a higher loan-to-asset ratio, then profits may decrease. LOARAT represents the ratio of Total loans to total assets for bank ***i*** at time ***t.***

Deposits to assets ratio (DEPRAT): This is the ratio of Deposits to total assets. This variable indicates level of liquidity but is considered as a liability. Deposits are the main source of bank funding and hence it has an impact on the profitability of banks.

Non-interest income (NIIT): this is measured as the ratio of total non-interest income to share of total asset.

$$Non\ Interest\ income\ to\ asset\ ratio = \frac{non\ interest\ income}{total\ assets} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (4)$$

Gross domestic product (GDP) growth: technically, real GDP captures upswings and downswings showing in the business cycles. Consequently, movements in general activity level are expected to generate positive impacts on profitability of banks.

Inflation (INFL): Bank's pricing behaviour is particularly affected by inflation. For example, a high inflation expectation by the banks in the near future, may lead to a belief that output demand will be constant even though there is an increase in prices by the bank. In this situation, given the condition that expected inflation will be equal to actual inflation, there will be no drop in business activities and no harmful effect on bank's performance.

4.4 Diagnostic Tests

4.4.1 The Augmented Dickey-Fuller Test for Unit Roots

The Dickey-Fuller test assumes that the error terms are uncorrelated. If the error terms are correlated, Dickey and Fuller have developed have developed the Augmented Dickey-Fuller which still tests whether $\lambda = 0$ with the use of the same critical values as of Dickey Fuller test.

To avoid the problem of non-stationarity, it is recommendable to employ the Augmented Dickey-Fuller (ADF) test for unit root to establish whether the variables are stationary or not before conducting a regression analysis. However, with the use of the Allerano and Bover GMM technique, the non-stationary variables are made stationary through the differencing that occurs within the technique (Athanasoglou, Brissimis, & Delis, 2005).

4.4.2 The Sargan Test

The sargan test is carried out to validate the instrumental variables. It tests the hypothesis that the instrumental variables to some set of residuals and therefore they are acceptable robust instruments.

CHAPTER FIVE

EMPIRICAL RESULTS AND DISCUSSION

5.1 Introduction

This chapter presents results from the data analysis employed as presented in Chapter Four. The chapter is structured into three sections; the first section looking at the diagnostic tests results that were conducted; the second section looks at the empirical results and interpretation while the last section presents summary of the empirical results and discussions.

5.2 Diagnostic Test

As mentioned in Chapter four, according to Athanasoglou, et.al (2005) they argue that with the use of the Allerano and Bover GMM technique, the non-stationary variables are made stationary through the differencing that occurs within the technique. It should be noted therefore that although conducting the tests may be necessary, they are basically not very important under a dynamic panel data model, such as the one being used in this study. The study will therefore focus on two important diagnostic tests, as discussed below;

5.2.1 Sargan Test

This test is carried out in order to make sure that a suitable model is designed. It is conducted in order to establish whether the restrictions have been over-identified or not. From the Sargan test of over identifying restrictions, the following null hypothesis was tested;

H_0 : Over-identifying restrictions are valid

And the results in Table 2 were obtained;

Table 3 Sargan Test Results

Chi_sq statistic	**Chi_sqd.f**	**Probability**
0.0000	**13**	**0.3262**

From the table of results above, it can be observed that we fail to reject the null hypothesis that the over-identifying restrictions are valid because the probability of the chi-square obtained is insignificant. We therefore conclude that the model is suitably designed.

5.2.2 Covariance Matrix of Coefficients for the Long-run Profitability Model

This was carried out in order to assess whether any relationship exists between the variables before conducting further analysis. In the classification of the covariance, a strong covariance lies from 0.7 and above, a moderate covariance takes values between 0.7 and 0.4 and a weak covariance takes values between 0 and less than 0.4. To establish if there is multicollinearity between the independent variables, test for correlation was also carried out. When there is high correlation between the variables ($r>0.9$) then it implies that multicollinearity exits and this leads to a poor regression model. Table 3 gives the obtained results.

Table 4 Covariance matrix of coefficients results

E (V)	L.ln RAO	lnEquit	lnNIIT	lnLOAN	lnDEPO	lnGDP	INFL	size	Siz_srd
L.ln RAO	.03021								
lnEquit	-.00762	.05136							
lnNIIT	-.00298	-.01197	.01394						
lnLOAN	-.00363	.00893	.00090	.02374					
lnDEPO	-.01444	.00696	-.00392	-.01092	.04995				
lnGDP	.017372	.02319	.00080	.00743	-.00885	.038719			
lnINFL	.00725	.00989	-.00043	.00496	-.00496	.01306	.00740		
size	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	
Siz_srd	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000	.00000

It can be observed that from the covariance matrix of coefficients that there is a lower covariance between the dependent and the independent variables (all less than 0.80). This gives evidence that the model is suitably designed. It can further be observed that there is no multicollinearity between the independent variables since they are not highly correlated (all less than 0.90). This again gives evidence that the model is suitably designed.

5.3 Estimated long-run commercial bank profitability regression

With studies revealing that most commercial banks diversify their businesses into other lines of business that are part of their core activities, the current study seeks to examine the impact of non-interest income on profitability of commercial banks in Malawi, using the Allerano and Bover GMM technique. Having looked at the diagnostic tests in the previous section, the study can now look at the profitability regression which forms the gist of this study. The results of the findings are presented in Table 6:

Table 5 Estimated Long-run commercial bank profitability regression

Variable	Coefficient	Standard error
L.lnRAO	0.011	(0.193)
lnEQUIRAT	0.736 ***	(0.223)
lnNIIT	0.159 *	(0.897)
lnLOAN	0.332 **	(0.050)
lnDeposits	-0.256	(0.239)
lnGDP	-0.485	(0.313)
inflation	0.006	(0.008)
SIZE	-0.000	(0.000)
SIZE_SQRD	0.000	(0.000)
r2_a R-squared F F-statistic P 0.00 P-value *N* 30 sample size		

Note: Standard errors in parentheses; **Levels of significance:** $^{*}p< 0.10$, $^{**}p< 0.05$, $^{***}p< 0.01$

From the long run model above it can be concluded that Profitability, given as return on assets (ROA), depends on a selected variables including non-interest income. From the table 6 it is found that the lagged value for Return on Assets has a negative insignificance. The other variables that were found to be insignificant are Size, deposits, GDP and inflation.

Profitability of commercial banks, with respect to equity to asset ratio which is a proxy for risk aversion, has a positive significance at one percent level. The variable is highly inelastic with a one percent increase in equity ratio leading to a proportionate increase in profitability by 0.74 percent. Literature on finance does not predict a clear effect of equity investment on banks profitability. However, the positive association between profitability and equity investments is consistent with portfolio theory, which contends that because investment in equity is riskier than investment in debt (due to the fact that in equity investment the performance is based on the direct performance of the asset), those banks increasing the proportion of their investments in equity securities can expect their portfolios to bring higher profits and with it higher risk. According to Gonzalez (2005), the positive

result is consistent with bank's usage of shareholder position to increase their interest margins and to obtain benefits in the lending relationships they also keep with firms.

With regard to Non-interest income, which is the main objective of this study, there is a positive significant (10 percent level) relationship between the same and bank profitability. The results show that bank profitability with respect to non-interest income is inelastic with a one percent increase in non-interest income leading to a corresponding increase in profitability by about 0.16 percent, *ceteris paribus*. This result is in line with the argument that adding non-interest income to a bank's revenue stream reduces risk by giving the bank more diversified portfolios of revenue producing activities (Feldman & Schmidt, 1999).

As discussed in chapter two, this empirical result is in line with the analysis that was carried out on the six banks under study. It was observed on the analysis that banks that registered a large proportion of non-interest income in a particular year, also registered high profits as compared to the other banks.

As observed by Chirwa (2003) and also by Kaluwa and Chijere (2016) that the banking industry in Malawi is highly concentrated with very few banks dominating and registering high profits, this study also observed that very few banks are dominating and are registering high proportions of non-interest income. This study further observed that these high proportions of non-interest income have positive impact on the banks profitability.

With these observations we therefore conclude that non-interest income has an impact on the Commercial bank profitability in Malawi. This conclusion answers the main objective of the study which was to establish whether non-interest income has impacted on bank profitability in Malawi. However it should be noted that on the components of non-interest income, it is quite obvious that commissions, such as those on foreign currency transactions, do have an impact on bank profitability. Therefore this study excluded this component.

With regard to Loans asset ratio which is an expression of the bank strategy, it is found that loans asset ratio has positive significance to bank profitability at 5 percent level. The result shows that,

other things being equal, bank profitability with respect to loans is inelastic with a one percent increase in loans leading to a corresponding increase in profitability by 0.33percent. This result is consistent with the general view that lending interest rates in Malawi are way too high and hence the strategy for most commercial banks is that the more the amount of loans disbursed, the higher the chances of returns on assets to be high. Thus it indicates that, all things being equal, for commercial banks in Malawi an increase in the lending activity will lead to greater-risk adjusted returns.

5.4 Summary

The chapter has presented and interpreted estimation results of the factors affecting commercial bank profitability including non-interest income as specified in chapter four, as well as the factors that determine non-interest income. *Ceteris paribus,* non-interest income was found to have a positive and significant impact on commercial bank profitability in Malawi. This result meant that the main objective of this study was met. It was established that smaller banks tend to have a small contribution of non-interest income as compared to large banks which have huge volumes of business transactions. This result meant that the specific objective was met.

CHAPTER SIX

CONCLUSIONS AND POLICY IMPLICATIONS

6.1 Introduction

This chapter gives a summary of the study findings and makes conclusions and also provides the policy implications from the findings and areas of further research.

6.2 Summary of Findings

The study was set to investigate the impact of non-interest income on commercial bank performance in Malawi from the period 2008 to 2013. Specifically, the study aimed at exploring the change in diversification from interest to non-interest income by commercial banks, and assessing the contribution of non-interest income to the overall profitability of commercial banks. The study found that, there has been an increased diversification in the financial sector especially to non-interest income mainly due to risk avoidance by many commercial banks after the global financial crisis of 2008.

In order to analyze the impact of non-interest income on commercial bank profitability the methodology used in this study has been based on the general practices applied in the field of financial sector (see Allerano and Bover (1991); Blundell and Bond (1998); Atelu (2004); Athanasoglu et al (2006), Chiorazzo (2008); Kaluwa and Chijere (2016)). Apart from the non-interest income variable, macroeconomic variables like GDP and inflation, Bank specific variables such as Credit risk, liquidity, bank strategy and a lagged term for profitability were incorporated as control variables to capture their impact on the profitability of commercial banks in Malawi. The inclusion of these variables allows an analysis of the impact of various developments on the profitability of commercial banks in Malawi. The empirical part of the thesis has been conducted by means of the Sargan test for over-identifying restrictions.

The study found that developments in the financial sector have led to a substantial increase in diversification to other sources of income more specifically the non-interest income. Empirical investigation on the impact of non-interest income on commercial bank profitability found that the non-interest income has a positive and significant impact on the profitability. It should, however, be emphasized that the study focused on non-interest income emanating from fees and service charges only other than commissions on forex exchange which are quite obvious that they lead to profitability of banks in a fixed exchange rate regime that dominated most part of the period of study.

The results obtained by this study largely support both theoretical and empirical studies that non-interest income does have a significant impact on the profitability of commercial banks. It is therefore without doubt that non-interest income can help increase efficiency of the financial sector, and at the same time complicate the bank regulatory system since the transactions of the non-interest income are not affected by any regulatory rules set be the central bank. This is arguably one factor that can lead to regulatory capture. From the results, it has also been observed that as much as there has been increased diversification to non-interest income, there is still a considerable increase in interest income that has a very high significance on the commercial banks profitability. Although financial literature on bank profitability mostly argues of the fact that the two sources of income have a convex relationship, it is not much of a complex case in the Malawian context where commercial banks use non-interest income as a supplement to the interest income as a way of diversifying their risk.

This therefore shows that there is a need to keep a keen check on evolution of these relationships so as to ensure that the banks minimize their credit risk through the diversification to non-interest income while at the same time they are not compromising their profits. This in turn will help in increasing the efficiency of the commercial banks in Malawi through maximization of their performance.

6.3 Policy Implications

The findings of the study show that in order to ensure an effective and stable financial sector, the Central Bank should establish policies that advocate and propagate the growth of Non-interest income in bank's portfolio base. In this study the result on non-interest income have proved that non-interest income is indeed a reliable diversified source of bank profitability just as it has been proven in several other studies in other countries worldwide. This has shown that profitability of banks in an economy is one of the crucial indicators of stability and that shaky performances can bring the economy down as we have seen with Greece economy and the US economy in 2008 financial crisis. Consequently stability in the financial sector will lead to financial sector development which will eventually lead to sustainable economic development and hence help to eradicate poverty which is the number one goal under the Sustainable Development Goals. (SDGs).

In chapter two of the study it was observed that larger banks, in terms of assets, tend to have a higher proportion of non-interest income ratio which according to literature it is mainly due to large volumes of business transactions such that large banks tend to make more profits due to low credit risk as compared to smaller bank which have low proportions of non-interest income ratio due to relatively low volume of business transactions. This study is therefore recommending that small banks should be innovative enough and come up with products that promote the growth of assets as well as their capital base so that they can attain the capacity of handling huge volume of business transactions and hence increase the proportional contribution of non-interest income to their performance. This will help the commercial banks to reduce the risk through diversification and also help them register high profits through risk reduction.

It is also advised that the monetary authorities should provide strict supervision to all banks in order to ensure that the banks are carrying out thorough screening mechanisms during loan processing period so as to reduce risk of default by borrowers and hence lead to an improvement on the small banks performance.

6.4 Suggestions for further research

This study was limited to the impact of non-interest income on commercial bank profitability in Malawi. It would also be interesting to assess impact of non-interest income on the volatility of earnings for commercial banks in Malawi. This would help establish whether there is potential for non-interest income to dominate interest income in the future and also help establish the policy implication that the scenario will result into assuming that it happens that way.

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Appendices

Appendix 1

Table 6 Data for commercial banks profitability in Malawi

Year	Bank	net interest	total assets	ROA	EQUIRAT	SIZE	NIIT	LOAN	Deposits	GDP	inflation
2008	1	5156	62269	**0.082802**	0.156193	62269	0.0642053	0.41059	0.729817	8.625	8.7
2009	1	6780	76139	0.089048	0.156648	76139	0.0580649	0.493755	0.723414	8.4	8.4
2010	1	6839	82729	0.082668	0.164199	8239	0.0523879	0.514076	0.713535	7.4	7.4
2011	1	8133	92103	0.088303	0.170711	92103	0.059998	0.505825	0.724819	6.825	7.6
2012	1	9866	129385	0.076253	0.166109	129385	0.0989914	0.486927	0.676369	5.5	21.7
2013	1	19718	185302	0.10641	0.150646	19718	0.07729	0.339543	0.668395	4.5	28.7
2008	2	2978	41017	0.072604	0.149011	41017	0.0868664	0.41059	0.704976	8.625	8.7
2009	2	4076	49498	0.082347	0.165279	49498	0.0850741	0.428017	0.770678	8.4	8.4
2010	2	4639	55152	0.084113	0.175461	55152	0.0928887	0.457372	0.779935	7.4	7.4
2011	2	4980	75620	0.065856	0.163991	75620	0.0307591	0.521476	0.763052	6.825	7.6
2012	2	9130	118173	0.07726	0.138873	118173	0.0320716	0.431004	0.71689	5.5	21.7
2013	2	15759	166701	0.094535	0.137432	166701	0.101829	0.319518	0.780673	4.5	28.7
2008	3	1860	20419	0.091092	0.087174	20419	0.0740977	0.624223	0.808316	8.625	8.7
2009	3	2532	29318	0.086363	0.085954	29318	0.0863633	0.612115	0.829422	8.4	8.4
2010	3	3210	38833	0.082662	0.0917	38833	0.0720264	0.621739	0.76471	7.4	7.4
2011	3	4129	56207	0.073461	0.115786	56207	0.0459195	0.640721	0.808778	6.825	7.6
2012	3	5689	59773	0.095177	0.120138	59773	0.0558948	0.598213	0.797651	5.5	21.7
2013	3	9311.733	60213.677	0.154645	0.149978	60213.67	0.0706998	0.57896	0.783544	4.5	28.7
2008	4	1645	17684	0.093022	0.284947	17684	0.0998077	0.459794	0.652567	8.625	8.7
2009	4	2083	20971	0.099328	0.271852	20971	0.0790139	0.499928	0.553526	8.4	8.4
2010	4	2614	26327	0.09929	0.247617	26327	0.0622555	0.596574	0.601094	7.4	7.4
2011	4	2864	30349	0.094369	0.239777	30349	0.0723253	0.507694	0.657518	6.825	7.6
2012	4	3555	47269	0.075208	0.222154	47269	0.1044236	0.435105	0.797651	5.5	21.7
2013	4	7575	82948	0.091322	0.284947	82948	0.1031731	0.307952	0.646164	4.5	28.7
2008	5	298.204	7024.781	0.04245	0.110489	7024.781	0.0842446	0.342318	0.594095	8.625	8.7
2009	5	460	6600	0.069697	0.160758	6600	0.1181818	0.320758	0.784242	8.4	8.4
2010	5	539	10359	0.052032	0.123178	10359	0.0726904	0.524954	0.843035	7.4	7.4
2011	5	526	10367	0.050738	0.139095	10367	0.0768786	0.236134	0.698563	6.825	7.6
2012	5	891	12706	0.070124	0.137179	12706	0.0856288	0.194632	0.432866	5.5	21.7
2013	5	943	11152	0.084559	0.150646	11152	0.1011478	0.352134	0.754035	4.5	28.7
2008	6	509	4579	0.11116	0.107447	4579	#REF!	0.274732	0.604936	8.625	8.7
2009	6	372.79	5939.485	0.062765	0.166008	5939.485	0.1022996	0.337611	0.785886	8.4	8.4
2010	6	445	5811	0.076579	0.191705	5811	0.0939597	0.349165	0.509723	7.4	7.4
2011	6	475	10870	0.043698	0.113155	10870	0.0802208	0.327967	0.613155	6.825	7.6
2012	6	808	11442	0.070617	0.101556	11442	0.0839014	0.516518	0.622007	5.5	21.7
2013	6	2163.625	24036.122	0.090016	0.150646	24036.12	0.0811863	0.358553	0.76619	4.5	28.7

Appendix 2

Sargan test results

```
. estat sargan
Sargan test of overidentifying restrictions
        H0: overidentifying restrictions are valid

        chi2(13)     =  14.70322
        Prob > chi2  =    0.3262

. estat sargan
Sargan test of overidentifying restrictions
        H0: overidentifying restrictions are valid

        chi2(13)     =  14.70322
        Prob > chi2  =    0.3262

. estat vce

Covariance matrix of coefficients of xtdpdsys model
```

e(V)	L. lnRAO	lnEQUIRAT	lnNIIT	lnLOAN	lnDeposits	lnGDP	lninflat~n	SIZE	SIZE_SQRD
L.lnRAO	.03021758								
lnEQUIRAT	-.00762907	.05136749							
lnNIIT	-.00298344	-.01197804	.01394545						
lnLOAN	-.00363852	.0089357	.00090983	.02374202					
lnDeposits	-.01444898	.00696199	-.00392329	-.01092761	.04995857				
lnGDP	.01737287	.02319507	.00080257	.00743334	-.00885252	.03871957			
lninflation	.00725093	.00989773	-.00043619	.00496813	-.00400419	.0130603	.00740013		
SIZE	1.346e-07	-3.414e-07	2.023e-07	-9.754e-08	-1.519e-07	-2.849e-08	-4.280e-08	1.409e-11	
SIZE_SQRD	-7.360e-13	2.402e-12	-1.445e-12	7.608e-13	8.167e-13	4.353e-13	1.973e-13	-8.529e-17	5.722e-22

Appendix 3

Long-run Estimation results

```
. xtdpdsys lnRAO lnEQUIRAT lnNIIT lnLOAN lnDeposits lnGDP inflation SIZE SIZE_SQRD, lags(1) nocons  artests(2)

System dynamic panel-data estimation         Number of obs         =        29
Group variable: Bank                         Number of groups      =         6
Time variable: Year
                                             Obs per group:    min =         4
                                                               avg =  4.833333
                                                               max =         5

Number of instruments =     22               Wald chi2(8)          =    779.04
                                             Prob > chi2           =    0.0000
One-step results
```

lnRAO	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lnRAO						
L1.	.0111998	.1930579	0.06	0.954	-.3671869	.3895864
lnEQUIRAT	.7359127	.2225489	3.31	0.001	.2997247	1.172101
lnNIIT	.1588787	.0897298	1.77	0.077	-.0169884	.3347458
lnLOAN	.3328347	.172348	1.93	0.053	-.0049612	.6706307
lnDeposits	-.2562522	.2385889	-1.07	0.283	-.7238777	.2113734
lnGDP	-.4847816	.3129882	-1.55	0.121	-1.098227	.128664
inflation	.0056229	.0089457	0.63	0.530	-.0119104	.0231562
SIZE	-3.82e-06	3.92e-06	-0.98	0.329	-.0000115	3.86e-06
SIZE_SQRD	1.28e-11	2.42e-11	0.53	0.597	-3.46e-11	6.02e-11

```
Instruments for differenced equation
        GMM-type: L(2/.).lnRAO
        Standard: D.lnEQUIRAT D.lnNIIT D.lnLOAN D.lnDeposits D.lnGDP
                  D.inflation D.SIZE D.SIZE_SQRD
Instruments for level equation
        GMM-type: LD.lnRAO

.
. estimates store arlelano_logs

. estat abond
artests not computed for one-step system estimator with vce(gmm)
r(198);

.
. estat sargan
Sargan test of overidentifying restrictions
        H0: overidentifying restrictions are valid

        chi2(13)     =  14.58926
        Prob > chi2  =    0.3337

.
```