DETERMINANTS OF PROFITABILITY OF BANKS IN NIGERIA

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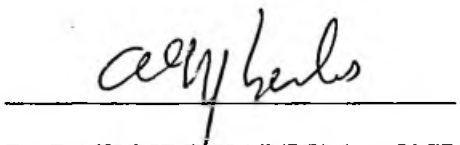
DECLARATION

I hereby declare that this dissertation entitled "Determinants of Profitability of Banks in Nigeria" has been written by me and it is a report of my research work. It has not been presented in any previous application for Master of Science in Accounting and Finance. All quotations are indicated and sources of information specifically acknowledged by means of references.



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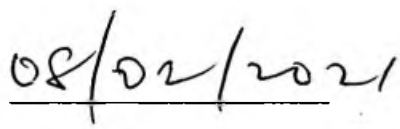

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CERTIFICATION

This dissertation entitled "Determinants of Profitability of Banks in Nigeria" meets the regulations governing the award of Master of Science (M.Sc) Degree in Accounting and Finance, Faculty of Administration, of the School of Postgraduate Studies, Nasarawa State University, Keffi, and is approved for its contribution to knowledge.

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DEDICATION

This research work is dedicated to God Almighty the fountain of knowledge and wisdom, my parents (Late Maj. Joseph and Deaconess (Mrs) Marian Ahidenor), my loving and caring husband (Mr Babatunde Kareem) and my wonderful children (Omowumi, Omotayo and Oluwasegun) for their endless, unconditional love, support and incessant attention given to me.

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Abstract

In the recent past, the banking sector has experienced a tremendous transformation in its environment due to its improvement in the provision of financial services and high technological facilities, resulting in significant impact on its profitability. This study examined the determinants of profitability of banks in Nigeria and adopted the Efficient Structure hypothesis theory. Descriptive and ex-post facto research designs were used in the methodology. The population of this study is 15 banks in Nigeria and the data for the study was collected from Nigeria Deposit Insurance Corporation's (NDIC) annual reports and statement of accounts for the period 2004 to 2018. The study used Ordinary Least Square Regression as tool for data analysis and results indicated that banks size, interest rate and real gross domestic have significant positive effect on profitability while other variables like non-interest income, non-performing loan and total deposits to total liabilities showed a significant negative effect on the profitability of Nigerian banks. It was concluded that the variables that exerts significant impact are banks specific variables while macro-economic variables do not significantly determine the profitability of banks. The study therefore, recommended that management of banks should pay critical attention to bank specific variables as these have a higher tendency of determining their profitability.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Banking sector plays one of the most important roles in the economic life of a country. It facilitates the production, distribution, exchange and consumption processes in the economic system, thus being an essential part of country's sustainable development (Davydenko, 2016).

In Nigeria, the banking sector is the most capitalised and active on the Nigeria Stock Exchange and contributes a large portion to the GDP; Total Asset of Banks to GDP in 2018 was 61.25%. (NDIC, 2019).

Apart from its major role of saving and as a loan provider, the banking sector all around the globe has experienced a major transformation in its environment due to improvement in the requirement of financial services, resulting in significant impacts on its profitability. Hence, identification and analysis of the determinants of bank profitability have attracted for many years the interest of academic researchers as well as bank management, supervisors and financial service participants. Previous researches on the determinants of bank profitability were focused on returns on bank assets and equity, and net interest rate margins, which explored traditionally the impact of bank performance on bank specific factors, such as risk, market power, and regulatory costs.

In another study, Peter, Salvio and Raphael (2018) suggest that the determinants of commercial banks profitability is divided into two main categories namely the internal determinants which are management controllable and the external determinants which are beyond the control of management. There are several specific factors suggested as affecting the profitability of

commercial banks such as financial regulation, competitive conditions, concentration, market share, market growth, ownership, economic growth, interest rate and inflation.

In same vein, Sritharan (2015) study the determinants of commercial bank profitability by using a sample of 389 banks from 41 Sub-Saharan Africa countries. The study arrived at the conclusion that bank profitability is high in Sub-Saharan Africa compared to other regions. In addition, the study finds that apart from credit risk, higher returns on assets are associated with larger bank size, activity diversification, and private ownership. Bank returns are affected by macroeconomic variables, suggesting that macroeconomic policies that promote low inflation and stable output growth do boost credit expansion.

1.2 Statement of the Problem

From the year 2011 to 2018 the average contribution of total banking assets to GDP in Nigeria is 65% (NDIC, 2019). Therefore, a healthy and profitable banking sector will also improve the economy of a nation. Belayneh (2011) pointed out that a great deal of economic activity would be seriously hindered if the most prominent agents in the credit markets did not execute their functions properly. A sound and profitable banking sector is able to resist negative shocks and contributes to the stability of the financial system and sustainability of overall economic development. In recent years, the banking sector globally, and indeed Nigeria has suffered a number of challenges due to the recent global financial crisis and thus became the most scrutinised sector by regulators all over the world. Also, the performance of banks in Nigeria has not been stable with respect to profitability. Thus, identifying determinants of profitability of commercial banks could allow the bank management and directors to formulate policies for improving the profitability of the banking industry.

Previous researches on the determinants of bank profitability were focused on returns on bank assets and equity, and net interest rate margins, which explored traditionally the impact of bank performance on bank specific factors, such as risk, market power, and regulatory costs. Most recently, research has focused on the impact of macroeconomic factors on bank performance (International Monetary Fund, 2013). Belaynah (2011), Davydenko (2010) and Valentina (2009) have shown that the banking sector profitability determinants are divided into two main categories, namely the internal and external determinants. However, internal profitability determinants can be accounted and analysed as bank specific determinants of profitability because they are controllable by the specific bank management. On the other hand, external determinants could be analysed under industry-specific determinants which are variables specific to the banking sector alone such as market growth, and under macroeconomic determinants such as countrywide economic growth.

While a large body of literature exist on these issues with respect to the developed economies the same cannot be said of Nigeria. Aremu, Ekpo and Mustapha (2013) examined the determinants of bank's profitability in Nigeria using only First bank out of the total 21 commercial banks. The study employed the use of Co-integration and error correction model and found that size and cost efficiency have no positive effect on profitability, however, credit risk and capital adequacy were found to significantly affect profitability.

Because of the very small sample of their study the result cannot be generalised of Nigeria banks. However, Aminu (2013) used a sample of seven banks and found that cost efficiency has a significant positive relationship with profitability but gross domestic product has negative relationship with bank's profitability. The study again did not include enough variables for bank specific determinants and also did not include any measure of industry determinants. Due to different business environment, the findings of studies in the developed world cannot be

effectively implemented in Nigeria and again the local studies are inadequate and also not comprehensive thus the need for this study. Therefore, this current study used all the commercial banks listed on the Nigerian Stock Exchange and made use of variables (Real Interest rate, real gross domestic product, non-interest income) that other previous studies did not used. Therefore, this study is being carried out to fill such gaps.

1.3 Research Questions

This study provides answers to the following questions:

i. To what extent does capital adequacy affect the profitability of listed commercial banks in Nigeria?
ii. What is the effect of bank size on the profitability of listed commercial banks in Nigeria?
iii. To what degree does non-performing loans affect the profitability of listed commercial banks in Nigeria?
iv. What is the effect of deposits liability on the profitability of listed commercial banks in Nigeria?
v. To what magnitude does non-interest income affect the profitability of listed commercial banks in Nigeria?
vi. What is the effect of liquidity on the profitability of listed commercial banks in Nigeria?
vii. What is the effect of economic growth on the profitability of listed commercial banks in Nigeria?
viii. To what extent does interest rate affect the profitability of commercial banks in Nigeria?

ix. What is the effect of inflation rate on the profitability of listed commercial banks in Nigeria?

1.4 Objectives of the Study

The general objective of this study is to examine the determinants of profitability of banks in Nigeria. The specific objectives are to:

i. Investigate the extent to which capital adequacy affect profitability of listed commercial banks in Nigeria;

ii. Examine the effect of bank size on the profitability of listed commercial banks in Nigeria;

iii. Assess the degree to which non-performing loans affect profitability of listed commercial banks in Nigeria;

iv. Evaluate the effect of deposits liability on the profitability of listed commercial banks in Nigeria;

v. investigate the magnitude to which non-interest income affect profitability of listed commercial banks in Nigeria;

vi. Evaluate the effect of liquidity on the profitability of listed commercial banks in Nigeria;

vii. Examine the effect of economic growth on profitability of listed commercial banks in Nigeria;

viii. Determine the extent to which real interest rate affect profitability of listed commercial banks in Nigeria;

ix. Examine the effect of inflation rate on commercial banks profitability in Nigeria.

1.5 Statement of the Hypotheses

The following hypotheses have been used to examine the objectives of the study.

Ho1: Capital adequacy has no significant effect on profitability of listed commercial banks in Nigeria.

Ho2: Bank size has no significant effect on the profitability of listed commercial banks in Nigeria.

Ho3: Non-performing loans has no significant effect on the profitability of listed commercial banks in Nigeria.

Ho4: Deposits liability has no significant effect on the profitability of listed commercial banks in Nigeria.

Ho5: Non-interest income has no significant effect on the profitability of listed commercial banks in Nigeria.

Ho6: liquidity has no significant effect on the profitability of listed commercial banks in Nigeria.

Ho7: Economic growth has no significant effect on the profitability of listed commercial banks in Nigeria.

Ho8: Interest rate has no significant effect on the profitability of listed commercial banks in Nigeria.

Ho9: Inflation rate has no significant effect on the profitability of listed commercial banks in Nigeria.

1.6 Significance of the Study

This study will be of great importance to the management of commercial banks through identifying significant determining factors of profitability. It will also have a great significance for external stakeholders such as investors that own shares in the banks, the community for which the financial service is provided, and the Regulators of the sector for the sake of the safety of the depositors' funds and sustainable economic development. Finally, the study will contribute to the body of knowledge in the area of determinants of the profitability of deposit money banks.

1.7 Scope of the Study

This study focuses on determinants of profitability of banks in Nigeria. The study covers the period of fifteen (15) years, from 2004 to 2018. The choice of fifteen years period is to give proper representation of each commercial bank in Nigeria, also to take care of the period that banks were facing problem of merger and acquisition, therefore there is need to examine the performance of deposit money banks listed on the Nigerian Stock Exchange in order to have an up-to-date result and to capture the trend analysis of the various years.

Therefore, determinants of profitability of banks are grouped into banks specifics and macro-economic variables. Bank specifics is proxies by capital adequacy ratio, banks size, non-performing loans, deposit liability, non-interest income and liquidity, while macro-economic variables are economic growth, real interest rate and inflation rate. Profitability was proxy by return on assets during the period covered by the study.

The independent variables that are used in this study is capital adequacy, banks size, non-performing loan, deposit liability, non-interest income, liquidity ratio, economic growth, real interest rate, and inflation ratio whereas the dependent variable that is used in this study is

profitability of banks on the Nigerian Stock Exchange. The dependent variable is measured by using proxy of Return on Assets (ROA).

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual Framework

In this chapter, literatures are reviewed on the determinants of profitability of commercial banks. The review of empirical literatures on bank profitability determinants are organised in two parts namely internal and external determinants. The internal determinants include variables driven from financial statement and variables classified as internal by their nature but not displayed on financial statements, while external determinants comprises of macroeconomic determinants which affects all business activities of a given country.

Finally, four market structure theories namely; structure- conduct- performance hypothesis, efficient- structure hypothesis, expense preference hypothesis, and risk avoidance hypothesis which were developed by previous scholars and researchers were reviewed to determine which hypothesis aligns with this study.

2.1.1 Concept of Bank Profitability

Profitability entails that income and expenses must occur during the same period of time (Matching Concept) and that the income must be a direct consequence of the expenses. It is not material whether or not such income has been received in cash nor is it compulsory that the expenses must have been paid in cash. For a profit-oriented organization, profit is the soul of business. The importance of profitability, therefore, stems from it being the purpose for business.

A company remains in operation because it expects to make profits. Once that expectation is confirmed unattainable, the most rational decision is to close shop or exit the business. Three indicators, namely: Net Interest Margin (NIM), Return on Assets (ROA) and Return on Equity

(ROE) were identified by Ahmed (2003) to be widely employed literatures to measure profitability. However, there are divergent views among scholars on the superiority of one indicator over the others as a good measure of profitability. Profitability measures, according to Akinola (2008) include Profit before Tax (PBT), Profit after Tax (PAT), Return on Equity (ROE), Return on Capital (ROC) and Return on Asset (ROA).

Banks act as an intermediary between those who are in need for money and those who have excess of money. In a case of financial distress, borrowers have limited liability; implying that they have incentives to alter their behaviour by taking on more risk than savers are willing to accept. Monitoring the borrowers' behaviour is time consuming, complex and expensive for individuals.

Another important aspect of banking is the function of maturity transformation. Banks receive short-term savings from depositors and transform those savings into long-term loans to borrowers. By holding a part of the short-term savings in liquid assets and cash, banks withstand daily withdrawals from depositors.

The traditional form of banking; receiving deposits and extending credits have become less important. Banks offer a unique service; lending long term while guaranteeing the liquidity of their liabilities to depositors who can withdraw their money at any time. Besides the incorporations of banking activities in liquidity, price and credit risks and market risks (such as interest rate risk and currency risk), bank risk managers should properly diversify these risks and closely monitor borrowers' behaviour to avoid bank failure or financial distress.

2.1.2 Determinants of Profitability

2.1.2.1 Internal Determinants

The internal determinants of banks profitability are those management controllable factors which account for the inter-firm differences in profitability, given the external environment. Vong and Hoi (2008) define internal determinants of bank profitability as factors that are influenced by a bank's management decisions.

In this study such internal profitability determinants includes: capital adequacy, credit risk, deposit liability, the level of liquidity, loan and advance, expense management, efficiency and productivity, bank size and non-interest income.

Capital Adequacy

It is measured by the ratio of equity capital to total risk weighted assets. It is sometimes referred to as capital structure in some literatures. Bank equity capital can be seen in two dimensions as stated by Aburime (2008); the amount contributed by the owners of a bank (paid-up share capital) that gives them the right to enjoy all the future earnings and the amount of owners' funds available to support a bank's business which includes reserves, and is also termed as total shareholders' funds. Aburime (2008) suggests that the bank level of safety is achieved through the high capital requirement which generates positive net benefits.

Bank's capital is widely used as one of the determinants of bank profitability since it indicates the financial strength of the bank (Athanasoglou et al., 2005). Capital adequacy requirements generally aim to increase the stability of a national banking system by decreasing the likelihood of a banks'

failure and a number of negative externalities that exists in banking that cause risk to systematically be under-priced.

Another study conducted by Flamini, McDonald and Schumacher. (2009) on the determinants of commercial banks profitability in Sub – Saharan Africa (SSA) took 389 sample banks in 41 SSA countries, measured profitability by Return on Assets (ROA) indicator. They found that capital adequacy has positive and significant effect on profitability.

Also, Aburime (2008) examined company level determinants of bank profitability in Nigeria. The study used a panel data set consisting of 91 observations of 33 banks over the 2000 – 2004 period. Regression analysis was used and the study revealed that capital size is one of the significant company level determinants of profitability. Though the results indicated that capital size is a significant determinant of bank profitability in Nigeria, only the size of the reserves component of bank capital had a significant relationship with bank profitability. But the shares component of bank capital did not have a significant relationship.

Bank Size

The size of a business means the ability it possesses and the variety and number of production capability or the quantity and multiplicity of services the business can be offered concomitantly to its customers. In a simpler way, the best indication of ''bigness'' of a firm is the size of its management group or the amount of assets it possesses compared to others in the same industry (Sritharan, 2015). Firm size is the speed and extent of growth that is ideal for a specific business, a large bank reduces cost because of economies of scale and scope. Bank size is usually used to examine the economies or diseconomies of scale in the banking sector. Size is commonly measured by gross sales or gross value of assets, logarithm of total assets, number of employees and sales

turnover. Growth in size of a firm can be in terms of revenue, profits, assets or number of employees which are all essential for increased financial health and profitability. A study by Omondi and Muturi (2013), suggests that firms should expand in a controlled way with the aim of achieving an optimum size so as to enjoy economies of scale which can ultimately result in higher level of profitability. However, firms that become exceptionally large, the effect of size could be negative due to some reasons for example bureaucracy (Yuqi, 2007).

This study aims at identifying whether the increase or decrease in size of commercial banks asset wise has any influence on the bank profitability.

Non-Performing Loan

The concept of Non- Performing Loans (NPLs) has been expressed by different authors in the literature. A Non-Performing Loan is a loan that is in default or close to being in default. One common feature of NPL is the period over which the principal and interest remain unpaid and un-serviced before a loan is classified as non-performing. Caprio and Klingebiel (1996) described NPLs as loans that do not generate income over a sustained period of at least three months. In the same vein, Alton and Hazen (2001) expressed NPLs as loans that are 90 days or more past due or no longer accruing interest. The IMF Financial Soundness Indicators Compilation Guide of 2006 recommends that loans are classified as non-performing when payment of principal and interest are past due by three months or more or when interest payments equalling three months interest or more have been capitalized, reinvested or rolled over. One interesting argument put forward by the IMF Guide is that a loan can also be classified as non-performing when the debtor files for bankruptcy. In Nigeria, NPLs is classified into substandard, doubtful, very doubtful and lost.

A loan is non-performing when payments of interests and principal are past due by 90 days or more, or at least 90 days of interest payment have been capitalized, refinanced or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons to doubt that payment will be made in full (IMF, 2009). NPLs can be treated as undesirable outputs or costs to loaning banks which decreases the bank's performance. Hennie and Sonja (2009) define NPLs as assets not generating income, this is when principal or interest is due and left unpaid for 90 days or more. Loan defaults are inevitable in any lending, what banks do is to minimize the risk of defaults.

Findings by Foos et al., (2010) support that current loan growth leads to increases in loans losses in subsequent years. Diversification is seen as a technique of minimizing exposure to loss. However the findings of this study failed to support that loan portfolio diversification reduces the problem of bad loans as banks grow their loan portfolios. Interest rates provide a pricing mechanism for loans in financial markets. As generally indicated by the law of demand, lower prices (interests rates for the case of loans) would help attract more demand. This study found that commercial banks lower their lending rates so as to attract more borrowers and grow their loan book.

Deposit Liability

The amounts of interest income banks earn mainly depend on the amount and quality of the fund deposited with them by the public. There are three major sources of deposit funds for the banks; namely: current or demand deposits, fixed or time deposits/term deposits and savings deposits. On current or demand deposits, the bank pays practically no interest. The depositor can withdraw in part or in full at any time by issuing cheques. Fixed/Time/Term deposits are so-called for deposit

banks because they are left with the bank for a certain fixed period before the expiry of which they cannot be withdrawn except after giving due notice, on such deposits the bank pays higher interest. Savings depositors can withdraw any time subject to certain limitations regarding the amount withdrawn or the frequency of withdrawals. In fact, only a small percentage of savings are withdraw at any particular time. Since, withdrawals can and do take place, the bank has to keep a certain proportion of its assets in liquid form (Rasiah, 2010).

Since the primary function of the banks is collecting deposits and giving loans to the public from these deposits, the competitiveness and the profitability of the bank will depend on how well the function is carried out. Rasiah (2010) stated that Commercial banks, accepts cash and holds on to it as much as possible because the more cash it has and can retain, the more funds it can lend to the public. That is, the more cash a commercial bank has the greater is its capacity to make profits. Moreover, commercial banks always utilize its funds to the full in lending funds. Hence, the competition for deposits is really a competition for profits. Commercial banks compete for deposits in order to become larger and thus to be able to supply more funds to the public. However, such financial growth is profitable only if the commercial bank does not incur additional expenses to obtain and retain cash.

Most studies from the literature agreed that, liability portfolio Management especially deposit liability may influence the profitability of commercial banks positively (Moin, 2008). In contrary other researchers conclude that since, time and savings deposits represent a relatively higher cost of source of funds, the more a commercial bank is committed to time and saving deposit, the higher would be the funding cost and hence the lower the profits (Ommeren, 2011).

Non-Interest Income

Non-interest income is an alternative means of income other than earning from loans. It includes fees earned from offering unit trust services, service charge on deposit accounts, standard fees, and charges for other bank services. With increased globalization and financial liberalization, the banking business has been undergoing a gradual transformation away from the traditional business of financial intermediation and towards provision of other financial services including mutual fund, insurance etc. Thus, non-interest income would represent a key source of bank revenue at present and in the future (Rasiah, 2010). By more aggressively selling services other than loans such as brokerage, insurance and trust services, banks have found a promising channel for boosting their income statement by diversifying income sources, and for insulating their banks more adequately from fluctuations in interest rates and loan default risk. Furthermore, higher diversification regarding banks' income sources towards derivative instruments and other fee-based activities shows a positive effect on banks profitability on the Korean banking sector (Sufian, 2011).

The importance of fee-based services to commercial banks is to increase the non-interest income. As the result activity of fee-based services and their product diversification is captured by non-interest income to total income ratio. Although in the case of commercial banks, the majority of income is generated from interest income. Its profitability is highly affected by interest fluctuations and loan default risk. Though, bank incomes that are highly dependent on non-interest income can protract the profit from decline during this situation. Since, this income is never affected by interest fluctuations and loan default risk.

Non-Interest Income to Total Assets (NIITA) is considered as an important determinant of bank profitability and is calculated as total non–interest income divided by total assets. Non-interest

income consists of commissions, service charges and fees, guarantee fees, net profit from sale of investment securities, and foreign exchange profit. The study of Mujeri and Younus (2009) revealed that the ratio of non-interest income to total assets of a bank and its spread has a negative effect on profitability.

Liquidity

The concept of liquidity and profitability are two critical concepts in finance literature especially in banking sector. Finance assumes an inverse relation between liquidity and profitability even though several empirical studies indicate otherwise.

According to Ibe (2013) liquidity as a financial term simply means the amount of capital that is available for investment. The study further argues, today's capital as used in this context is usually credit and not cash. As Marozva (2015) emphasized, even though the subject area of bank liquidity is not a new phenomenon, however, there has not been a universally accepted definition. Bank liquidity according to Adebayo *et al.* (2011) is a financial term and can be said to mean the amount of capital that is readily available to banks for investment. They argue that most of this capital are in the form of credit and not capital. Ibe (2013) puts it as the ability of banks to constantly meet cash, cheque, withdrawal commitments and loan demands of their customers while meeting their basic requirement for bank reserves. In view of this, Amengor (2010) in relation to Commercial banks puts liquidity as the ability of banks to finance its contractual obligations such as lending, investment and customers' withdrawal of deposits and maturity of liabilities at the course of banks' activities. Marozva (2015) explained the term bank liquidity by categorizing it into two; market liquidity and funding liquidity. He defined market liquidity in the context of how easy a bank's security can be traded and on the other hand, funding liquidity as how easy a bank can obtain

funding to trade its security. He added that both market and funding liquidity are complementary since bank performance (funding liquidity) is dependent on the ease of trading security. In view of Amengor's (2010), Alshatti (2015) argued that liquidity is the ability of banks to meet the financial needs of their increased assets and meeting liabilities as and when they fall due without the occurrence of unforeseen losses. From the definitions outlined above, it can be noted that the scopes of liquidity is based on the timing required in converting assets of banks into monetary asset or cash; the certainty with regards to the conversion and the value realized from the asset and the banks' ability to meet obligations without incurring losses.

Liquidity is of paramount importance being a core issue of banking (Caruana & Kodres, 2008). Therefore, viability and efficiency of a bank is greatly influenced by the availability of liquidity in sufficient amount at all times. Banks must meet their due obligations and execute payments on the exact day they are due, otherwise, the banks stand the risk of being declared illiquid (Crocket, 2008).

Traditionally, banks basically function as financial intermediaries and collecting points of fund for different groups within the society. Therefore, banks are expected to maintain adequate liquidity in order to efficiently perform their daily obligations such as meeting depositors' demand or withdrawals, settling wholesale commitments and provision of funds when borrowers draw on committed credit facilities (FSC, 2010). They must also ensure sufficient funds in order to be able to finance increase in assets (Bank, 2004). Hence, banks automatically transform short-term, liquid liabilities into long-term illiquid assets (ECB, 2002). This function serves to protect customers against liquidity problems, but however, exposes banks themselves to such risks which in extreme cases or worst scenarios is capable of causing a banks' ruin regardless of soundness of the bank (ECB, 2002). The European Central Bank argued that such liquidity problem in a bank is capable

of spreading to other banks and thereby causing a real bank panic. The term liquidity is characterized by ambiguity due to so many facets and definitions, therefore, to use it productively and purposely, it needs further and clear definitions (Goodhart, 2008).

2.1.2.2 Determinants of Macroeconomics

The macroeconomic variables normally used are the interest rate, inflation rate and economic growth of the country. Bank profitability is sensitive to macroeconomic conditions, despite the trend in the industry towards greater geographic diversification and larger use of financial engineering techniques to manage risk associated with business cycle forecasting (Athanasoglou et al., 2006).

Economic Growth

Economic growth rate indicator is Gross Domestic Product (GDP), which is a measure of the total economic activities of a country. It is assumed to have a positive impact of growth in GDP on profitability of banks (Pasiouras & Kosmidou, 2007; Demirgüc-Kunt & Huizinga, 2000; Bikker & Hu, 2002; Athanasoglou et al., 2008). In this study annual growth in GDP (GGDP) is used as a potential determinant of profitability.

Real Interest Rate

A bank's interest rate policy can be seen from two perspectives, viz: the bank's policy regarding the interests it pays on deposits received by it and the bank's policy regarding the interests it receives on credits given by it. The interest paid by a bank, on its deposit liabilities is a cost source and tends to contract the bank's income. Fries et al. (2002) opined that the profit function of a bank includes the interest it pays on deposits. On the other hand, the interest received by a bank on credits given by it is a revenue source and tends to expand the bank's income. Hence, Bobakova

(2003) argues that the profitability of a bank is influenced by its interest rate policy. This policy can adjust to enhance profitability. Here, the decisive factor is the bank's ability to set such an interest rate for asset deals that meets costs of funds, operating costs, as well as the required rate of profitability.

The real interest rate is expected to have a positive relationship with profitability in the essence of lend-long and borrow-short argument (Vong & Chan, 2008). This means banks may increase lending rates sooner by more percentage points than their deposit rates. On the other hand, the rise in real interest rates may increase the real debt burden on borrowers and this may lower asset quality, thereby interest rate may have a negative impact on profitability. However Guru et al. (2002) attempted to identify the determinants of successful deposit banks in Malaysia. Their findings revealed that, among the macro-indicators, high interest ratio was associated with low bank profitability.

Inflation Rate

Inflation refers to an overall rise in the Consumer Price Index (CPI), which is a weighted average of prices for different goods and services (Sinclair, 2010). Inflation rate occurs when the buying power of a currency falls due to a rise in the prices for goods and services in the economy (Comley, 2015).

Inflation increases production when the economy is functioning at capacity since there is additional spending and ultimately raising the demand for products and services. Measurement of inflation can be affected by variations in the value of the commodities provided in the CPI. The utilization of goods and services in a population is dependent on the specific country since the index is based on a variety of commodities.

The findings from the previous studies regarding the relationship between inflation and profitability are varied. The studies of Khrawish (2011) and Syafri (2012) showed that there is a significant negative impact of inflation on profitability; but on the other hand, there is a positive impact of inflation on risk. Studies by Vong and Chan (2008) and Tan and Floros (2012) showed that high inflation rates led to higher bank profitability.

2.2 Empirical Review

2.2.1 Capital Adequacy and Profitability

Sufian (2012) investigated the performance of 77 commercial banks taken from Pakistan, Sri Lanka and Bangladeshi during the period from 1997 to 2008. The empirical results showed that capital adequacy have significant and positive impact on the performance of banks, while there is a negative impact from cost on bank profitability. Regarding the macroeconomic determinants, the findings reveal that there is a positive and significant association between bank profitability and economic growth, while the association between profitability and inflation is not significant.

Tarusa et al., (2012) examined the factors of Net Interest Margin (NIM) of 44 commercial banks in Kenya by using pooled and fixed effects regression to a panel for the period 2000 to 2009. The empirical results exhibited that capital adequacy have a significant and positive impact on NIM. The results also showed that during high inflation the NIM is wider, while market concentration and growth have negative impact on NIM.

By using the Generalised Method of Moment (GMM) estimator technique, Dietrich and Wanzenried (2011) analysed the profitability of 372 commercial banks in Switzerland for a period from 1999 to 2009. To assess the impact of the recent financial crisis they considered the period in to two parts, the pre-crisis period; from 1999 to 2006 and the crisis period; from 2007 to 2009.

The results revealed that profitability determinants include bank-specific characteristics as well as industry-specific and macroeconomic factors, some of which have not been considered in previous studies. Capital adequacy, cost to income, credit quality, yearly growth of deposits and funding costs are found as significant determinants of bank profitability

Aremu, Ekpo and Mustapha (2013) examined factors that determine profitability in the banking sector of the Nigerian economy using First Bank of Nigeria Plc. as a case study. The study used econometric analysis of co-integration and Error Correction Technique to analyse data collected from annual reports. Results from the study revealed that contrary to views of some authors, Capital Adequacy (Equity to Total Assets) was found to be significant drivers which affected bank profitability both in the long run and short run respectively.

2.2.2 Bank Size and Profitability

Paul (2014) examined the impact of bank size on commercial bank performance in Kenya. Using panel data for the period of 2007to 2014, the study employed system Generalized Method of Moment (GMM) estimation technique in order to overcome the endogeneity problem. The findings showed that for the case of commercial banks in Kenya, size does not matter in determining bank profitability. This implies that although economies of scale are important for profitability, local markets in Kenya do not always allow such economies of scale to translate to higher profitability.

Naceur and Goaied (2008) examined the impact of bank characteristics, financial structure, and macroeconomic conditions on Tunisian banks' Net-Interest Margin (NIM) and profitability during the period of 1980 to 2000. They suggested that banks which hold a relatively high amount of capital and higher overhead expenses tend to exhibit higher net-interest margin and profitability levels, while bank size is negatively related to bank profitability. During the period under study,

they found that stock market development had positive impact on banks' profitability. The empirical findings suggested that private banks are relatively more profitable than their state owned counterparts. The results suggested that macroeconomic conditions have no significant impact on Tunisian banks' profitability. The findings of each of these studies varied significantly depending on the operational environment of the bank, the economic and legal environment and the empirical results, since both datasets and environments differ.

Kasimodou et al. (2006) in their study when testing the banks effectiveness of UK using the bank size as a key factor categorized UK banks for two types, large and small according to assets volume. The results of their study concluded that, small banks showed higher performance in comparison to large ones. Furthermore, the size of bank was proved to have an effect on profitability besides other factors such as liquidity.

Muhindi and Dominic (2018) examined the effect of firm size on financial performance of commercial banks in Kenya. The study used descriptive survey research design. The variables entailed; the number of branches, capital base, loans and advances and number of customer deposit. The population of the study constituted all the 42 registered commercial banks in Kenya classified into large, medium and small banks. The data was gathered from the bank's financial reports and central bank supervision report for 5 year period from 2012 to 2016. The research made good use of secondary data; however, the researchers took note of their limitation in terms of rigidity and its historical nature. The study was affected by macroeconomic and microeconomic factors such as regulations and technology. The researchers increased the sample size of the source of data in order to increase the level of reliability and validity of the results.

Mohammad (2015) investigated the effect of bank size on its profitability for Jordanian listed commercial banks within different bank size categories. Data for Jordanian commercial banks for the years from 2007 up to 2012 were used to classify banks into three categories according to their asset size in respect to their Total Assets. Profitability was measured by Return on Equity (ROE) as dependent variable. The study was constructed to reveal if there was a statistical difference in profitability according to size. Simple regression was applied by using dummy variables to proxy asset size. The results of the study revealed a significance difference in the profitability of these differently sized banks.

2.2.3 Non-Performing Loan and Profitability

Mutuku (2016) examined the effect of NPLs on profitability of commercial banks in Kenya. The study population consisted of all registered commercial banks in Kenya, (CBK 2016). Profitability measured by Return on Assets (ROA) was used as dependent variable and non-performing loans measured by NPLs ratio was used as independent variable. To improve the accuracy and reliability of the tests capital adequacy was used as the control variable. The research covered all commercial banks in Kenya for the last ten years that is 2006 to 2016 and used secondary data to analyse. The study indicated that there is a negative effect of non-performing loans ratio on Return on Assets (ROA), confirming that non-performing loans negatively affects profitability of commercial banks in Kenya.

Municah (2018) investigated the causes of Non-Performing loans in Commercial Banks in Kenya. The study adopted the descriptive design and applied both multiple regression models on secondary data to determine the relationship between causes of Non-Performing Loans in Commercial Banks in Kenya. The study used secondary data for the period 2008 to 2012. The

Interest rate, inflation and growth rate in loans were used as independent variables. Non-performing loans was used as dependent variable. The population of this study comprised of 43 commercial banks in Kenya and data was analysed using SPSS. The study revealed that non-performing loans of commercial banks in Kenya are positively correlated with inflation rate (0.316). The study also found that non-performing loans are negatively correlated with real interest rate (-0.468) and growth rate in loans (-0.013) respectively. Furthermore, the study indicated that the variables jointly influenced the non-performing loans with an adjusted R2 of 0.553. This means that 55.3% of variation in the dependent variable in the regression model is due to independent variables while 44.7% are due to error term, chance or unexplained. The F- Statistics of 23.409 was also significant. The model was therefore considered robust or fitted well to the actual data of the variables. The study concludes that the independent variables considered in the study jointly caused the non-performing loans in commercial banks in Kenya. The study also found that the non-performing loans were positively correlated to inflation rate.

Dana (2017) examined the determinants of Non-Performing Loans (NPLs) in Kazakhstan's banking sector for aggregate volume of bad loans. In particular, it investigated the impact of macroeconomic and bank specific factors on the volume of NPLs. The sample comprises 29 banks over the period from 2007 to 2014. The study used the dynamic panel data method based on the Generalized Method of Moments (GMM) estimation proposed by Arellano and Bond (1991). It should be noted that macroeconomic factors together with bank specific characteristics have a substantial effect on the level of NPLs in a particular bank. More diversified and highly capitalized banks tend to have less NPLs. On the contrary, highly leveraged banks conditional on their size tend to have higher volume of NPLs. This is so far the first attempt to look at the determinants of NPLs in Kazakhstan using the novel data set on commercial banks.

Peter, Salvio and Raphael (2018) examined the impact of non-performing loans on banks profitability using information asymmetry theory and bad management hypothesis. This study adopted causality research design using panel data (2007 to 2015) of 16 commercial banks in Tanzania. The study employed descriptive statistics and multiple regression analysis estimation methods. Likewise, Ordinary Least-Squares (OLS) regression technique was used, and then Fixed Effects (FE) and Random Effects (RE) assumptions were considered. The study found that occurrence of non-performing loans is negatively associated with the level of profitability in commercial banks in Tanzania. The results extended further the information asymmetry theory and bad management hypothesis. The findings of the study have both theoretical and managerial implications for practitioners and policy-makers.

2.2.4 Deposits Liability and Profitability

By using the GMM estimator technique Dietrich and Wanzenried (2011) analysed the profitability of 372 commercial banks in Switzerland for a period from 1999 to 2009. To assess the impact of the recent financial crisis they considered the period in two parts, the pre-crisis period from 1999 to 2006 and the crisis period from 2007 to 2009. Their results revealed that profitability determinants include bank-specific characteristics as well as industry-specific and macroeconomic factors, some of which have not been considered in previous studies. Capital, cost to income, credit quality, yearly growth of deposits, bank size, and funding costs are found as significant determinants of bank profitability

Andrew (2014) evaluated the determinants of profitability of listed commercial banks in developing countries specifically focusing on Malawi during the period 2009 to 2012 using internal-based and external (market)-based profitability measurements. The study employed

correlation and multivariate regression analysis. Return on Assets (ROA) and Earnings Yield (EY) were used as proxies of internal and external profitability respectively. The results of the regression analysis suggested that non-performing loans have significant impact on ROA.

Shahnaz, Minhajul, Ayesha and Jannatul (n.d) examined commercial banks in Bangladesh to determine the effect of liquidity and bank size on the profitability of the banks during the year 2011 to 2015. Seven commercial banks were selected and descriptive research design as well as correlations analysis statistics were used to conduct the study, while data from the annual reports of the banks were analysed. The results showed that deposit liability to asset ratio had a negative impact on the ROA of the selected banks.

2.2.5 Non-Interest Income and Profitability

Tarusa, Yonas, and Mutwolc (2012) examined the factors of Net Interest Margin (NIM) of 44 commercial banks in Kenya by using pooled and fixed effects regression to a panel for the period 2000 to 2009. The empirical results exhibited that credit risk and operating expenses have a significant and positive impact on NIM. The results also showed that during high inflation, the NIM is wider, while market concentration and growth have negative impact on NIM.

Mohammad, Kowsar and Abdul (2015) investigated capital strength, credit risk, ownership structure, bank size, non-interest income, cost efficiency, off-balance sheet activities as potential bank specific determinants as well as growth in gross domestic products and inflation as potential macroeconomic determinants of bank profitability by taking 25 commercial banks from Bangladesh for a period ranges from 2006 to 2013. The impact of other variables was not uniform in respect of different measures of profitability. Non-interest income and GGDP are found as

important determinant for NIM. Size has a positive and significant impact on ROA, while inflation has a negative and significant impact on ROA and ROE.

Huseyin (2014) examined the impact of non-interest income on profitability of 205 banks in Turkey for the period 1999 to 2013. According to Regression-OLS test, non-interest income had positive and significant impact on Turkish banks' profits for the period of January 2003 to July 2015. There was positive and significant relationship between high income countries' banks' profits and non-interest income rates. In addition, when Bayesian Impulse Response analysis was conducted, it was unearthed that one standard deviation shock plummets Turkish banks' profits. Although Turkish banks' non-interest income rose fast in the long run, there are negative anomalies in short term. In addition to that, Turkish banks' net income had partial golden ratio behaviour and that golden ratio behaviour derives from Turkish banks' non-interest income. Moreover, that golden ratio behaviour had similarity with Sydney Opera House' architectural design which is based upon Golden ratio application.

Limei, Siqin, Zili and Alec (2017) investigated the relationship between non-interest income and performance. A panel threshold model was used with balanced panel dataset of 16 listed Chinese commercial banks, for the period of 2007 to 2013. The findings show two main conclusions: (1) the existence of two thresholds shows that there is non-linear relationship; (2) there is a general negative correlation between the non-interest income ratio and performance of commercial banks. Furthermore, when the non-interest income ratio is higher than the two thresholds, the negative correlation decreases. Implications of the study is that the ratio should be controlled in a range or non-interest income will not positively affect the performance, and a high level of performance can be gained only by raising the ratio to a certain level. But the problem is the real effect of non-interest income on profit and risks.

2.2.6 Liquidity and Profitability

Shahnaz, Minhajul, Ayesha and Jannatul (n.d) examined commercial banks in Bangladesh to determine the effect of liquidity and bank size on the profitability of the banks during the year 2011 to 2015. Seven commercial banks were selected and descriptive research design as well as correlations analysis statistics were used to conduct the study. Data from the annual reports of the banks were analysed. The results showed that there is relationship among liquidity and profitability but liquidity does not have significant influence on the profitability of the banks.

Alice (2015) investigated the effect of bank size on profitability of commercial banks in Kenya. To achieve this objective the study used a descriptive survey. The population of the study constituted all the 43 commercial banks in Kenya. The data was gathered from financial statements and records. Data analysis was done using a regression model. The descriptive findings concluded that commercial banks had a sufficient capacity to generate profitability from their assets. However, this was dependent on some factors like efficiency of the bank, its credit policies, and management and investment decisions. Bank size is moderately positively correlated to profitability of commercial banks in Kenya. The regression results conclude that logarithm of asset was statistically significant since its probability value obtained from the regression model above was below (5%). Liquidity was found to be insignificant since their p-values are more than 5%.

Mustapha (2017) examined the level of bank liquidity, the trend of banks liquidity and the impact of bank liquidity on profitability of commercial banks in Ghana. The study was based on a sample of 21 banks over a 10 year period from 2007 to 2016 with data arranged in the form of a panel. Data was analyzed using descriptive statistics, correlation analysis and regression analysis. The results show that the average liquid assets to total assets for commercial banks is 20% whiles liquid

assets cover over total interest bearing liabilities was 1.19. The results showed that liquidity is positively associated with Return on Assets (ROA) using both measures of bank liquidity. Regarding Return on Equity (ROE), there is a weak positive relationship between the ratios of liquid assets to total assets (LIDQ1). An insignificant negative relationship was observed between Return on Equity (ROE) and liquid assets to total interest bearing liabilities (LIQD2). On the control variables, the study reported a positive association between net interest margin, bank size, capital adequacy ratio, foreign ownership and bank profitability. The study impliesd that a predetermined optimal level of liquid assets is needed by banks to enhance profitability. Thus, banks should determine the level of liquidity beyond which profitability will be reduced.

Yi-Kai and Chung-Hua (2018) employed alternative liquidity risk measures and investigated the causes of liquidity risk, using an unbalanced panel dataset of 12 advanced economies commercial banks over the period of 1994 to 2006. Thus, they applied panel data instrumental variables, using two-stage least squares (2SLS) estimators to estimate bank liquidity risk and performance model. They found that liquidity risk was the endogenous determinant of bank performance. The causes of liquidity risk included; components of liquid assets, dependence on external funding, supervisory and regulatory factors and macroeconomic factors. Besides, they also found that liquidity risk may lower bank profitability (return on average assets and return on average equities) because of higher cost of fund, but increases bank's net interest margins. Besides, they classified countries as bank-based or market-based financial system. The result showed that liquidity risk is negatively related to bank performance in market-based financial system. However, it has no effect on bank performance in bank-based financial system.

2.2.7 Economic Growth and Profitability

Paul (2014) examined the impact of bank size on commercial bank performance in Kenya. Using panel data for the period 2007 to 2014 the study employed system Generalized Method of Moment (GMM) estimation technique in order to overcome the endogeneity problem. The findings showed that for the case of commercial banks in Kenya, size does not matter in determining bank profitability. This implies that although scale economies are important for profitability, local markets in Kenya do not always allow such scale economies to translate to higher profitability. The control variables; market concentration and GDP growth was significant in explaining bank profitability.

Sufian (2012) also investigated the performance of 77 commercial banks taken from Pakistan, Sri Lanka and Bangladeshi during the period from 1997 to 2008. The findings reveal that there is a positive and significant association between bank profitability and economic growth, while the association between profitability and inflation is not significant.

Mustapha (2017) investigated the determinants of banks' profitability in Nigeria using a panel dataset between 2001 and 2015. The results of previous empirical studies are mixed and inconclusive in terms of factors that actually influence the level of bank performance as a result of difference in sample period, estimation techniques, and countries. Ordinary Least Square and Generalized Method of Moment (GMM) techniques were utilized. The results showed that bank specific factors such as efficiency ratio and credit risk are key determinants of banks profitability in the long run. Real Gross Domestic Product (GDP) significantly affected the performance level in Nigeria's commercial banks for the full sample period as well as for period after bank capitalization.

2.2.8 Interest Rate and Profitability

Tarusa et al., (2012) examined the factors of Net Interest Margin (NIM) of 44 commercial banks in Kenya by using pooled and fixed effects regression to a panel for the period 2000 to 2009. The empirical results exhibited that credit risk and operating expenses have a significant and positive impact on NIM. The results also showed that during the high inflation the NIM is wider, while market concentration and growth have negative impact on NIM.

Fries et al. (2002) examined the profit function of a bank and the interest it pays on deposits. On the other hand, the interest received by a bank on credits given by it is a revenue source and tends to expand the bank's income. Hence, Bobakova (2003) argued that the profitability of a bank is influenced by its interest rate policy. This policy can be adjust to enhance profitability. According to Vong and Chan (2008), interest rate has a positive relationship with profitability in the essence of lend-long and borrow-short argument.

Guru et al. (2002) attempted to identify the determinants of successful deposit banks in Malaysia. The findings of his study revealed that, among the macro-indicators, high interest ratio was associated with low bank profitability.

2.2.9 Inflation Rate and Profitability

Sufian (2012) investigated the performance of 77 commercial banks taken from Pakistan, Sri Lanka and Bangladeshi during the period from 1997 to 2008. The empirical results showed that credit risk, liquidity, capitalization and non-interest income have significant and positive impacts on the performance of banks, while there is a negative impact from cost on bank profitability. Regarding the macroeconomic determinants, the findings revealed that there is a positive and

significant association between bank profitability and economic growth, while the association between profitability and inflation is not significant.

Paul (2014) examined the impact of bank size on commercial bank performance in Kenya. Using panel data for the period 2007 to 2014 the study employed system Generalized Method of Moment (GMM) estimation technique in order to overcome the endogeneity problem. The findings showed that for the case of commercial banks in Kenya, size does not matter in determining bank profitability. This implied that although scale economies are important for profitability, local markets in Kenya do not always allow such scale economies to translate to higher profitability. The control variables lagged profitability, market concentration; inflation was significant in explaining bank profitability.

Mohammad, Kowsar and Abdul (2015) investigated capital strength, credit risk, ownership structure, bank size, non-interest income, cost efficiency, off-balance sheet activities and liquidity as potential bank specific determinants as well as growth in gross domestic products and inflation as potential macroeconomic determinants of bank profitability by taking 25 commercial banks from Bangladesh for a period from 2006 to 2013. Three different measures of profitability namely Return on Assets (ROA), Net Interest Margin over total assets (NIM) and Return on Equity (ROE) were used in the study. The empirical findings suggested that capital strength (both regulatory capital and equity capital) and loan intensity have positive and significant impact on profitability. Results also showed that cost efficiency and off-balance sheet activities have negative and significant impact on bank profitability. The impact of other variables is not uniform in respect of different measures of profitability. Non-interest income, credit risk and GGDP are found as important determinants for NIM. Size had a positive and significant impact on ROA, while inflation had a negative and significant impact on ROA and ROE.

Kobia (2018) examined the effect of inflation rate on profitability of commercial banks in Kenya for the period from 2013 to 2017. The independent variable for the study was inflation rate and the profitability as measured by ROA was the dependent variable and data was collected from 37 out of the 42 commercial banks listed in Kenya. Descriptive research design was adopted and regression analysis was used to analyse data collected. The result revealed that inflation rate in Kenya are constantly high compared to profitability and there exist a negative significant correlation between inflation and profitability of banks that gave insight to the low values of profit.

2.3 Theoretical Framework

The following are various theories that underpinned the study on determinants of bank profitability

2.3.1 Structure-Conduct-Performance (SCP) Hypothesis

Market Structure Conduct and Performance (SCP) hypothesis is derived from the neo-classical analysis of markets. It was first formalized by Mason in 1939 as a method of analysing markets and firms (Worthington et al., 2001) .The SCP was the central opinion of the Harvard school of thought and popularized during 1940 to 1960 with its empirical work involving the identification of correlation between industry structure and profitability. Most early research explanation for the relationship between the market concentration and profitability were based on the Structure-Conduct-Performance (SCP) hypothesis, and focused on the interpretation of a positive empirical relationship between concentration and profitability (Goddard et al., 2004). SCP suggests connecting relationships between market structure, firms conduct in that market and their economic performance.

The SCP paradigm asserts that there is a relationship between the degree of market concentration and the degree of competition among firms. This hypothesis assumes that firms' behaviour or rivalry in the market is determined by market structure conditions, especially the number and size distribution of firms in the industry and the conditions of entry. This rivalry leads to unique levels of prices, profits and other aspects of market performance (Berger et al., 2000). A special case of the SCP hypothesis is the Relative-Market-Power (RMP) hypothesis, which suggests that only firms with large market shares and well-differentiated products are able to exercise market power and earn non-competitive profits (Berger, 1995). The assumption of SCP hypotheses has been applied by various researchers and supported positive relationship between market concentration (measured by concentration ratio) and performance (measured by profits). As explained in the SCP, the market concentration encourages collusion among large firms in the industry, which subsequently leads to higher profits. Hence, SCP posited that changes in market concentration may have a direct influence on a firm's financial performance. Firms in more concentrated industries can earn higher profit than firms operating in less concentrated industries, irrespective of their efficiency (Goldberg et al., 1996).

The Relative Market Power Hypothesis (RMPH) which is a special case of SCP posited that only banks with large market shares and well differentiated service lines are able to exercise market power to gain superior profit on non-competitive price setting behaviour (Berger, 1995). Studies such as those by Smirlock (1985) and Berger and Humphrey (1997), investigated the profit-structure relationship in banks, providing tests of the RMP hypotheses. To some extent, the RMP hypothesis verified that superior management and increased market share (especially in the case of small-to medium-sized banks) raise profits. SCP, in general provides two main benefits to studies which investigates the banks profit behaviour. Firstly, it shows the way banks' profits are

operating. Thus, it explains different forces that restrict or expand the scope of banks' operations in the market. Secondly, SCP provides a rational basis for analysing the market behaviour.

2.3.2 Efficient-Structure (ES) Hypothesis

The Efficient-Structure (ES) hypothesis was first introduced by Demsetz (1973) and then expanded by Peltzman (1977) it states that as efficient firms gradually increase in size and market share due to their ability to generate higher profits, this in turn will lead to higher market concentration. Thus, the positive relationship between profits and concentration is explained by lower cost achieved through either superior management or production processes. The EY hypothesis posits that the relationship between market structure and performance of any firm is defined by the efficiency of the firm.

Davydenko (2010), stated that the ES hypothesis was first applied in banking by Smirlock (1985) and he found that market share rather than concentration had a significant positive impact on banks profitability. However, market share was found to be positively and significantly related to profitability even after controlling for concentration. These results tend to support the (ES) hypothesis in banking markets.

2.3.3. Expense-Preference (EP) Hypothesis

This hypothesis was first introduced by Becker (1957), in contrast to profit-maximizing policy, the Expense Preference (EP) hypotheses considered the firm as a utility maximizing unit through the pursuit of non-profit-maximizing policies. In particular, the manager increased staff expenditures, managerial emoluments and discretionary profit for which they have a positive preference. EP hypothesis postulates that when discretionary behaviour is an option, firm managers may choose to maximise individual utility rather than that of the firm.

Bourke (1989) employed a more robust test to investigate the presence of the expense preference behaviour in banking. He used a value added measure of profitability, in order to remove the effect of managerially-induced expenditure and labour union negotiated wage demands from net income. In the banking context, value added could be defined as loan interest and other revenue less deposit interest and other non-wage expenses. Hence, support for the expense preference hypothesis would be found, if the coefficient of the concentration variable remains positive but increase in magnitude when a value added measure of profitability is used as the dependent variable. He observed a positive relationship between concentration and pre-tax return on assets. However, contrary to expectation the sign of the coefficient of the concentration variable was negative when a value added measure of profitability was used as the dependent variable. Thus, Bourke's findings do not support the existence of the EP hypothesis in banking.

2.3.4 Risk Avoidance Hypothesis

The Risk-Avoidance (RA) hypothesis was first introduced in the manufacturing industry by Galbraith (1967) and then expanded by Cave (1970).The Galbraith-Cave or risk avoidance hypothesis as referred by Davydenko (2010) indicates that banks located in more concentrated markets may choose to trade off some of their potential monopoly profit for reduction in risk by choosing safer portfolios. Thus, Clark (1986) had indicated that selecting a safer portfolio of assets and liabilities in line with their risk-preference, banks located in concentrated markets with monopoly power, may reduce risk at the expense of some monopoly profit. Hence, the risk avoidance hypothesis may provide an explanation for the lack of relationship between concentration or monopoly power and profitability.

2.4 Summary

This chapter has examined and reviewed literatures on the determinant of bank profitability. The review shows that there is no unique theory of profitability that provides a unifying framework for the study of financial performance determinant of the banking industry. Most research conducted on this area concluded that, the determinants of banking profitability are not outside from bank-specific, industry-specific and macroeconomic factors. However bank-specific factors are the most frequently occurring determinants of profitability. Even though, abundant empirical studies have been conducted around this area, it is inclined to the developed country banking environment. This study adopts the Efficient Structure hypothesis.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research Design

This study employs the use of ex-post facto research design. This is informed by the fact that the variables are secondary data and the event of study has already taken place. The descriptive design allows the research study to describe the behaviour of the variables through the use of mean, media, minimum, maximum and standard deviation.

3.2 Population, Sample and Sampling Techniques

The population of this study comprise of fourteen (15) commercial banks listed on the Nigerian Stock Exchange for the period of 2004 to 2018. The sample size used is all the 15 banks on and this will lead to a complete generalisation of opinion on the determinants of banks profitability in Nigeria.

3.3 Methods of Data Collection

The study used eviews software and time series data which were elicited from the Nigeria Deposit Insurance Corporation's annual report and statement of accounts for the various years ranging from year 2004 to 2018. By this the study relies completely on secondary source of data collection. The data was pooled-average of all the individual banks. The choice of fifteen years period is to give proper representation of each deposit money bank in Nigeria, also take care of the period that banks were facing problem of merger and acquisition, and to capture the trend analysis of the various years.

Therefore there is need to examine the performance of Commercial banks listed on the Nigerian Stock Exchange in order to have an up-to-date result.

The study used eviews software and time series data which were elicited from the Nigeria Deposit Insurance Corporation's annual report and statement of accounts for the various years ranging from year 2004 to 2018. By this the study relies completely on secondary source of data collection. The data was pooled-average of all the individual banks.

3.4 Technique for Data Analysis and Model Specification

The tools of analysis for this study are the descriptive statistic which involves the use of mean, median, minimum, maximum and the standard deviation of the data. Ordinary Least Square (OLS) regression was used to examine the relationship between the variables.

Below is the description of the variables in the regression and model specification. The dependent variable used in this study is the Return on Assets (ROA) of the Nigeria banks. This is adopted based on the recommendations of Athanasoglou et al. (2008) and Davydenko (2010) who assert that ROA is the key ratio for the evaluation of bank profitability.

Model Specification

The model for the test of the various hypotheses is specified below:

$$ROA = \alpha + \beta_1 CAR^B + \beta_2 BSZ^B + \beta_3 LIR^B + \beta_4 NPL^B + \beta_5 DTA^B + \beta_6 NII^B + \beta_7 RGDP^M + \beta_8 INR^M + \beta_9 INF^M + \varepsilon$$

The variables for hypothesis one which are bank specific (internal factors) are denoted by the superscript B; the one for industry specific is denoted by I; while the one for macroeconomic is denote by M.

Other variables are defined below:

CAR = Capital Adequacy Ratio (ratio of equity capital to total risk weighted assets)

BSZ= Bank Size (log of banks total assets)

LIR = Liquidity Ratio (ratio of liquid assets to short term customer deposits and other short term borrowing)

NPL = Non-Performing Loan (ratio of non-performing loan over total loans and advances)

DTA = Deposit Liability (ratio of deposits to total assets ratio)

NII = Non-Interest Income to total income ratio

RGDP = Real Gross Domestic Product

INR = Interest Rate (lending interest minus deposit interest)

INF = Inflation Rate

ε = error term

The independent variables selected are:

Table 3.1

S/N	VARIABLES	MEASUREMENT
1	**Capital Adequacy Ratio (CAR)**	It is measured by the ratio of equity capital to total risk weighted assets.
2	**Bank Size (BSZ)**	This is considered to be an important determinant of bank profitability (Kosmidou, 2008). It is described by the log of banks total assets.
3	**Liquidity ratio (LR)**	Liquidity risk is estimated by the ratio of liquid assets to short term customer deposits and other short term borrowing or a ratio of cash and cash equivalents over short term customer deposits and other short term borrowing (Ommeren, 2011; Davydenko, 2010).
4	**Non-Performing Loans (NPL)**	This is measured by the ratio of non-performing loans over total loans and advances. This was also used by Ommeren (2011), the ratio measures the ability of bank managers to screen the credit risk. When loans are non-

		performing, income decreases, hence the expected relation is negative.
5	**Deposit Liability (DTA)**	This is measured by the ratio of deposits to total assets ratio (deposits like time, savings and checking deposits) (Moin, 2008).
6	**Non-Interest Income (NII)**	In this study the income which generates from the non interest sources is to be measured by non-interest income to total income ratio (Sufian, 2011).
7	**Economic Growth (RGDP)**	This is measured by the real GDP growth rate and it is hypothesized to affect banking profitability positively. This is because the default risk is lower in upturn than in downturn economy. In addition, higher economic growth may lead to a greater demand for both interest bearing and non-interest bearing financial services sector (Athanasoglou et al, 2005; Kosmidou, 2008).
8	**Interest Rate (INR)**	The interest rate policy is measured by spread (i.e. lending interest minus deposit interest). It is expected to have a positive relationship with

		profitability in the essence of lend-long and borrow-short argument (Vong & Chan, 2008).
9	**Inflation Rate (INF)**	Inflation rate is measured by the Consumer Price Index (CPI). It is the percentage change in the prices of goods and services (Sufian, 2012).

3.5 Justification of Methods

The study examines the determinant of profitability, as such, the nature of the study calls for the examination of the descriptive statistic and test of relationship among the variables using the eviews software. As stated in the discussion of data, the independent variables have been used by previous studies. Studies that have used similar variables include Ommeren (2011), Kosmidou (2008), Moin (2008) and Athanasoglou et al. (2005).

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Data Presentation

The data collected for the study are presented in the appendix of this study. The dependent used is Return on Assets (ROA), and independent variables are Capital Adequacy (CAR), Bank Size (BSZ), Liquidity Ratio (LIR), Non-Performing Loan (NPL), Deposit to Liability (DTA), Net Interest Income (NII), Real Gross Domestic Product (RGDP), Interest Rate (INR) and Inflation Rate (INF). Therefore, the data were collected from the annual financial reports of the Nigeria Deposit Insurance Corporation (NDIC) for the various years ranging from 2004 to 2018.

Data were analysed using descriptive statistics correlation with eviews as software and hypotheses were tested using regression analysis. The findings of this study are also discussed in line with previous findings of other researchers.

4.2 Data Analysis and Results

4.2.1 Descriptive Statistic

Table 4.2

	ROA	CAR	BSZ	LIR	NPL	DTA	NII	RGDP	INR	INF
Mean	2.475333	0.447467	8083.328	40.34733	3009.829	4046.148	328930.7	14815.77	5.014447	11.53067
Median	3.160000	0.174000	4045.000	50.44000	1519.760	1814.750	194160.0	11411.06	-4.552000	11.60000
Maximum	4.820000	0.984000	21891.56	69.15000	8045.380	12330.26	845650.0	40544.90	75.73900	18.87000
Minimum	-4.720000	0.113000	627.3000	-25.63000	237.7000	326.0000	45321.00	2708.400	-43.34500	5.380000
Std. Dev.	2.398943	0.386293	7743.420	29.80206	3020.454	4268.069	281814.5	11993.37	33.21889	4.034909
Skewness	-1.942343	0.454404	0.684303	-1.169068	0.705381	0.889403	0.563683	0.780415	0.736876	0.208197
Kurtosis	6.448675	1.318567	1.814563	3.027754	1.774185	2.169810	1.714651	2.515764	2.726286	2.155196
Jarque-Bera	16.86509	2.283218	2.048965	3.417281	2.183045	2.408353	1.826922	1.669172	1.404290	0.554424
Probability	0.000218	0.319305	0.358982	0.181112	0.335705	0.299939	0.401134	0.434054	0.495521	0.757894
Sum	37.13000	6.712000	121249.9	605.2100	45147.44	60692.22	4933961.	222236.5	75.21670	172.9600
Sum Sq. Dev.	80.56897	2.089112	8.39E+08	12434.28	1.28E+08	2.55E+08	1.11E+12	2.01E+09	15448.92	227.9269
Observations	15	15	15	15	15	15	15	15	15	15

Source: NDIC Annual Reports

Table 4.2 shows the descriptive statistic of the variables used in the study. The mean value of the Return on Assets (ROA) is 2.48, while its median value is 3.16. The minimum value of the ROA

is -4.72, while its maximum value of 4.82. The standard deviation of the ROA is 2.40 which shows that all the variables are normally distributed.

4.2.2 Correlation Matrix

Table 4.3

Covariance Analysis: Ordinary										
Date: 09/04/19 Time: 09:52										
Sample: 2004 2018										
Included observations: 15										
Correlation										
Probability	ROA	CAR	BSZ	LIR	NPL	DTA	NII	RGDP	INR	INF
ROA	1.000000									

CAR	0.285164	1.000000								
	0.3029	-----								
BSZ	-0.389304	-0.253708	1.000000							
	0.1515	0.3615	-----							
LIR	-0.259568	0.084558	0.479176	1.000000						
	0.3502	0.7645	0.0707	-----						
NPL	-0.456307	-0.242988	0.987477	0.437819	1.000000					
	0.0873	0.3829	0.0000	0.1026	-----					
DTA	-0.445724	-0.195508	0.986123	0.430432	0.978327	1.000000				
	0.0959	0.4850	0.0000	0.1093	0.0000	-----				
NII	-0.357417	-0.426749	0.929139	0.533093	0.899329	0.876521	1.000000			
	0.1909	0.1127	0.0000	0.0407	0.0000	0.0000	-----			
RGDP	-0.397688	-0.230178	0.961851	0.548413	0.925835	0.965452	0.901401	1.000000		
	0.1421	0.4092	0.0000	0.0343	0.0000	0.0000	0.0000	-----		
INR	0.385540	0.083669	0.004126	-0.189728	-0.003894	-0.028527	0.004264	-0.097399	1.000000	
	0.1558	0.7669	0.9884	0.4982	0.9890	0.9196	0.9880	0.7299	-----	
INF	-0.177812	0.268882	-0.005304	0.433669	0.011660	0.029803	-0.157671	-0.046126	0.201593	1.000000
	0.5261	0.3325	0.9850	0.1063	0.9671	0.9160	0.5747	0.8703	0.4712	-----

Table 4.3 shows the correlation matrix of the determinants of profitability of Nigerian banks. In the relationship between Return on Asset (ROA) and capital adequacy, the ratio is only to the tune of 29% and it is not significant. The relationship between non-performing loan and return on asset measured at a level of 46%, which is negative and it is significant only to the tune of 54% which implies that the significance level is not sufficient enough. Liquidity also has a negative relationship with return on asset as shown by the magnitude of -0.26 which is not significant. Only

total loan to total asset has a negative and significant relationship with return on asset at a level of 45% and which is not less than 5%.

Based on the matrix above ROA and Real Gross Domestic Product (RGDP) are explained to a negative level of 40%. The relationship between ROA and interest rate can account for 38% without statistical significance as indicated. The result also shows that inflation rate does not have a very good relationship with ROA as it can only account for negative 18% which again has no statistical significance.

4.2.3 Ordinary Least Square

Table 4.4

Dependent Variable: ROA				
Method: Least Squares				
+Date: 09/04/19 Time: 09:56				
Sample: 2004 2018				
Included observations: 15				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.378458	4.381664	0.771045	0.4755
CAR	2.036235	2.597577	0.783898	0.4686
BSZ	0.002258	0.000895	2.523925	0.0529
LIR	-0.026928	0.059815	-0.450184	0.6714
NPL	-0.001694	0.001627	-1.041467	0.3454
DTA	-0.002942	0.001310	-2.246825	0.0446
NII	-1.22E-05	1.30E-05	-0.941344	0.3897
RGDP	0.000243	0.000295	0.822364	0.4483
INR	0.020205	0.029724	0.679747	0.5269
INF	-0.142999	0.351813	-0.406463	0.7012
R-squared	0.831254	Mean dependent var		2.475333
Adjusted R-squared	0.527511	S.D. dependent var		2.398943
S.E. of regression	1.648981	Akaike info criterion		4.072913
Sum squared resid	13.59569	Schwarz criterion		4.544946
F-statistic	2.736705	Durbin-Watson stat		2.705640
Prob (F-statistic)	0.014001			

Table 4.4 above shows the result of the regression analysis. The result shows an r-squared value of 83%, the remaining 17% could be explained by other factors not included in the model. The probability of F-statistic is 0.014 which is less than 0.05 test criteria which implies that the model

is fit and is capable of explaining the relationship between return on profitability and its determinants.

Based on the result as presented above, it indicates that in the absence of all the determinants, the banks make a profit of 3.33%, however it is not significant as indicated by the p-value is 0.47 which is higher than 5%.

However, this statement can only hold true to the tune of 54% as the p-value is 46%, which implies that at 5% the result is not significant. Based on this, capital adequacy ratio is not a major determinant of the profitability of Nigerian banks.

The relationship between the sizes of the banks measured by total asset is significant as indicated by the p-value of 0.0529 which is in with 5% bench mark. A unit increase in the value of bank size increases the profitability of the banks by the tune of 0.002.

The a priori expectation is that liquidity should have a positive relationship with the profitability of the banks; however, the opposite could be the case when banks are illiquid. The finding of this study suggests that the liquidity level of the Nigerian banks is not sufficient enough to enhance her performance in terms of profitability. This result suggests that a unit increase in the level of the otherwise of liquidity will reduce profitability to the tune of -0.02 though this finding is not significant as indicates by its p-value of 0.67 which is greater than 5%.

Non-performing loan have a significant negative relationship with banks' profitability. A unit increase in non-performing loan reduces the profits of the banks by -0.001. While the non-performing loan are capable of generating interest for banks, if the interest is not paid back as at when due it is capable of reducing the profit turnover of the bank.

On the other hand, the ratio of total deposit to total liability is also a negative determinant of the profitability of Nigerian banks. A unit increase in its value does reduce profitability by 0.002942;

this implies that the liabilities of the banks are high to the extent that the total deposits in the banks cannot adequately cover it.

It has also been found that the value of non-interest income has a negative non-significant relationship with the profitability of Nigerian banks as indicates by the p-value of 0.38 which is far greater than 0.05 test decision criteria. In fact, a unit increase in the value of net interest income is capable of increasing the profit of the banks by -1.22.

It is also found that a unit increase in the value of RGDP those increases the profitability by 0.0002, however, the relationship is significant only to the tune of 44%, meaning that at 5% the relationship is not significant, however, at 5% the relationship is significant.

Again, it is found that interest rate also has a positive, non-significant relationship with the profitability of the Nigerian banks at 0.02 with a p-value of 0.52 which is greater than 0.05 test criteria.

Finally, a unit increase in the value of inflation will reduce the profitability of the banks to the tune of 0.14 however; the result is not significant as indicated by its p-value of 70% which is far greater than 5%.

4.2.4 Variance Inflation Factor (VIF)

Table 4.5

VIF
Variance Inflation Factors
Date: 09/04/19 Time: 09:59
Sample: 2004 2018

Variable	Centered VIF	Coefficient Variance
C	NA	19.19898
CAR	5.184030	6.747408
BSZ	247.1319	8.01E-07
LIR	16.36122	0.003578
NPL	124.2939	2.65E-06
DTA	160.8587	1.72E-06
NII	69.16854	1.69E-10
RGDP	64.58282	8.72E-08
INR	5.019752	0.000884
INF	10.37502	0.123773

4.2.5 Diagnostic Tests

In this section the post diagnostic tests to ensure the robustness of the variables are presented.

SERIAL CORRELATION

Table 4.6

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.136831	Prob. F(2,3)	0.1840
Obs*R-squared	10.14755	Prob. Chi-Square(2)	0.0863

The result in table 4.6 above shows an F-statistic value of 2.694 with a corresponding p-value of 0.08. Since the p-value is greater than 5%, it implies that there is no serial correlation using LM test.

Table 4.7

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.272547	Prob. F(9,5)	0.9564
Obs*R-squared	4.936834	Prob. Chi-Square(9)	0.8398
Scaled explained SS	0.280501	Prob. Chi-Square(9)	1.0000

The result in table 4.7 above shows an F-statistic value of 0.27 with a corresponding p-value of 0.95. Since the p-value is greater than 5%, it implies that there is no case of Heteroskedasticity Test: Breusch-Pagan-Godfrey.

The study further carried out normality and stability test. These are presented in the appendix of this study. However, the results of the analyses showed that the variables measured in this study are normal and stable.

4.3 Discussion of Findings

This study has examined the determinants of profitability of banks in Nigeria. The study has found a significant relationship between the profitability of Nigerian banks and its determinants. The relationship is very strong as it accounts for up to 94%. The study found key bank specific variables to have influence profitability but on the other hand none of the selected macroeconomic variables has individual specific effect.

Therefore, the specific findings are discussed below:

4.3.1 Capital Adequacy Ratio (CAR) and Profitability (ROA)

The Ordinary Least Square (OLS) analysis revealed that Capital Adequacy Ratio (CAR) has no significant effect on profitability of Nigerian banks. This finding is in line with the findings of Belayneh (2011) however, the study contradicts the findings of Vong and Chan (2008).

4.3.2 Bank Size (BSZ) and Profitability (ROA)

It was also found that Bank Size (BSZ) has a significant effect on profitability of banks in Nigeria. This implies that a unit increase in the value of the banks increases the profitability of the banks under study. Therefore, this finding is coherent with the finding of Dietrich and Wanzenried (2011), Andrew (2014), Alice (2015) and Mustapha (2017), while it contradicts the finding of Naceur and Goaied (2008) and Shahnaz, Minhajul, Ayesha and Jannatul (n.d).

4.3.3 Liquidity Ratio (LIR) and Profitability (ROA)

It was also found that Liquidity Ratio (LIR) has a significant positive relationship with profitability of Nigerian banks. This finding is tandem with the findings of Shahnaz, Minhajul, Ayesha andJannatul (n.d), Sufian (2012), Alice (2015) and Mustapha (2017). The finding also contradicts the findings of Yi-Kai and Chung-Hua (2018).

4.3.4 Non-Performing Loan (NPL) and Profitability (ROA)

Non-Performing Loan (NPL) has a significant negative relationship with banks' profitability. This implies that a unit increase in non-performing loan reduces the profits of the banks. This finding is in line with Mutuku (2016).

4.3.5 Deposits liability (DTA) and Profitability (ROA)

On the other hand, the ratio of total deposit to total liability is also a negative determinant of the profitability of Nigerian banks. This implies that the liabilities of the banks are high to the extent that the total deposits in the banks cannot adequately cover it. The finding of this study is in tandem with the findings of Sufian (2012) and Aremu, Ekpo and Mustapha (2013).

4.3.6 Non-interest Income (NII) and Profitability (ROA)

It has also been found that the value of non-interest income has a negative non-significant relationship with the profitability of Nigerian banks. In fact, a unit increase in the value of net interest income is capable of increasing the profit of the banks. This finding contradicts the findings of Naceur and Goaied (2008) and Sufian (2012).

4.3.7 Real Gross Domestic Product (RGDP) and Profitability (ROA)

Real Gross Domestic Product (RGDP) has a significant influence on profitability of banks in Nigeria. This indicates that a unit increase in the value of RGDP thus increases the profitability of banks. This result is in line with Paul (2014) and Mustapha (2017).

4.3.8 Interest Rate (INR) and Profitability (ROA)

The interest rate was found to have a positive, non-significant relationship with the profitability of the Nigerian banks. It is in conformity with the findings of Huseyin (2014) and Mohammad, Kowsar and Abdul (2015)

4.3.9 Inflation Rate (INF) and Profitability (ROA)

Inflation rate has an influence on profitability of banks in Nigeria. This indicates that any increase in the value of inflation will reduce the profitability of the banks. The finding of this study is in line with the findings of Tarusa, Yonas and Mutwolc (2012) and Andrew (2014) but not in line with the findings of Mohammad, Kowsar and Abdul (2015).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

In the last few years the banking sector, all around the world have experienced a major transformation in its environment due to improvement in the requirement of financial services and high tech facilities, resulting in significant impacts on its profitability. Both internal and external factors have been affecting the profitability of banks over time. Hence, identification and analysis of the determinants of bank profitability have attracted for many years the interest of academic researchers as well as bank management, supervisors and financial service participants. The study of bank performance becomes even more important in view of the recent financial and economic crises, which continue to have a fundamental impact on the banking industry in many countries around the globe. This study examines the impact of capital adequacy ratio, bank size, non-performing loans, deposits liability, liquidity ratio, and non-interest income, interest rate, real gross domestic product and inflation rate on the profitability of Nigerian banks.

The population of this study is all the banks in Nigeria. The data were collected from the annual reports of the NDIC for the year 2004 to 2018. The tool of data analysis is the ordinary least square regression using eviews software. It was found in this study that banks size, interest rate and real gross domestic product have significant positive relationship with profitability while other variables like non-interest income, non-performing loan and total deposit to total liability show a significant negative effect on the profitability of Nigerian banks. More so, capital adequacy ratio, liquidity and inflation have no significant influence on profitability of Nigerian banks. Based on the findings of this study, the following conclusions are reached.

5.2 Conclusion

In line with the above findings, the study has the following conclusions.

The major positive determinants of profitability of Nigerian banks are the size of the firm and non-interest income. While on the other hand loan and advances and total deposit to total liability have negative relationship and are significant. The variables that indicate significant levels of impact are bank-specific while the non-bank specific variables like gross domestic product, inflation rate, and interest rate could not significantly determine the profitability of the banks. This finding is due to the fact that macroeconomic variables' usually take a longer time period to exert their impact while the bank specific variables usually within the control of the bank management and can easily exert their effect once they are shifted or adjusted.

On the contrary non-performing loan shrunk the profit level of the banks. A possible reason for this scenario is that, the banks are giving too much loans that they hardly have enough to manage their operations very well as also confirmed by the fact that the level of liquidity also impacts negatively though without statistical significance.

On the other hand, bank size and non-interest income are able to impact positively due to the fact that the larger the bank size, the larger the resources at the disposal of the banks to convert them to profit. Also, the net interest income is the rewarding part of the non-performing loan thus the reason why it exerts positive contribution.

5.3 Recommendations

Based on the above findings the following recommendations are made.

The banks should strive to improve their equity capital investment and their size. Since loan and fee based activities are the main sources of revenue, banks should improve the level of those activities. On the other hand, in order to resist the challenges fixed deposit and non-performing loans have on profitability; the banks should improve the quality of loans and effectively utilize funds from fixed deposit.

The management of the banks should strike a balance between non-performing loans and the amount of deposit by customers. As it stands, the amount of deposits is not adequately covering the loans given out to customers therefore, resulting to ratio exerting a negative effect on the profitability of the banks.

5.4 Limitations of the Study

This research work is the limited to commercial banks and the findings of this study cannot be applied to other sectors of the economy.

5.5 Suggestions for Further Studies

This study used only the financial determinants which are tested on the profitability of the banks. It is recommended that other further study should take into consideration non-financial determinants of profitability and could also extend to include other performance variables.

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Appendix: A

Data Presentation

OBS	ROA	CAR	BSZ	LIR	NPL	DTA	NII	RGDP	INR	INF
2004	3.16	0.860	627.3	1.49	237.7	326	45321	2801.9	44.08	10.67
2005	4.04	0.117	760.6	-25.63	269.1	375.8	62315	2708.4	34.150	7.86
2006	3.82	0.124	1108	-12.79	370.2	569.8	69241	3194.01	-35.504	6.62
2007	3.78	0.971	1962.6	25.39	519	838.6	85418	4582.12	2.9	6.94
2008	4.82	0.863	2449.11	55.55	803.04 6	1017.2	111969	4725.08	75.739	18.87
2009	2.63	0.980	2980.49	69.15	938.69	1226.6	121233	6912.38	-43.345	12.89
2010	2	0.113	3365.21	47.4	1205.0 3	1415.8	162044	8487.03	-11.796	14.03
2011	2.58	0.721	4045	50.44	1519.7 6	1814.75	194160	11411.06	-12.558	15.01
2012	0.49	0.138	5463.1	61.11	1832.1 8	2479.07	213330	14572.23	-9.6185	17.85
2013	2.65	0.135	8140.2	62.19	2840.1	3412.3	585090	18564.8	-1.4544	8.24
2014	3.64	0.174	13011.6	64.83	4676.3 4	5357.2	656810	20657.31	-5.6044	5.38
2015	4.29	0.121	19261.02	44.17	7411.4 3	8702	721340	24296.32	55.903	11.6
2016	-4.72	0.270	17522.86	44.45	8045.3 8	9989.7	597280	24794.23	-15.991	12.4
2017	3.91	0.984	18661.27	51.77	7166.7 6	10837.14	462760	33984.75	-4.552	13.7
2018	0.04	0.141	21891.56	65.69	7312.7 2	12330.26	845650	40544.9	2.868	10.9

Source: Annual Financial Report of the NDIC for various years

Appendix: B

Descriptive Statistics

	ROA	CAR	BSZ	LIR	NPL	DTA	NII	RGDP	INR	INF
Mean	2.475333	0.447467	8083.328	40.34733	3009.829	4046.148	328930.7	14815.77	5.014447	11.53067
Median	3.160000	0.174000	4045.000	50.44000	1519.760	1814.750	194160.0	11411.06	-4.552000	11.60000
Maximum	4.820000	0.984000	21891.56	69.15000	8045.380	12330.26	845650.0	40544.90	75.73900	18.87000
Minimum	-4.720000	0.113000	627.3000	-25.63000	237.7000	326.0000	45321.00	2708.400	-43.34500	5.380000
Std. Dev.	2.398943	0.386293	7743.420	29.80206	3020.454	4268.069	281814.5	11993.37	33.21889	4.034909
Skewness	-1.942343	0.454404	0.684303	-1.169068	0.705381	0.889403	0.563683	0.780415	0.736876	0.208197
Kurtosis	6.448675	1.318567	1.814563	3.027754	1.774185	2.169810	1.714651	2.515764	2.726286	2.155196
Jarque-Bera	16.86509	2.283218	2.048965	3.417281	2.183045	2.408353	1.826922	1.669172	1.404290	0.554424
Probability	0.000218	0.319305	0.358982	0.181112	0.335705	0.299939	0.401134	0.434054	0.495521	0.757894
Sum	37.13000	6.712000	121249.9	605.2100	45147.44	60692.22	4933961.	222236.5	75.21670	172.9600
Sum Sq. Dev.	80.56897	2.089112	8.39E+08	12434.28	1.28E+08	2.55E+08	1.11E+12	2.01E+09	15448.92	227.9269
Observations	15	15	15	15	15	15	15	15	15	15

Appendix: C

Correlation Analysis

Covariance Analysis: Ordinary
Date: 09/04/19 Time: 09:52
Sample: 2004 2018
Included observations: 15

Correlation										
Probability	ROA	CAR	BSZ	LIR	NPL	DTA	NII	RGDP	INR	INF
ROA	1.000000									

CAR	0.285164	1.000000								
	0.3029	-----								
BSZ	-0.389304	-0.253708	1.000000							
	0.1515	0.3615	-----							
LIR	-0.259568	0.084558	0.479176	1.000000						
	0.3502	0.7645	0.0707	-----						
NPL	-0.456307	-0.242988	0.987477	0.437819	1.000000					
	0.0873	0.3829	0.0000	0.1026	-----					
DTA	-0.445724	-0.195508	0.986123	0.430432	0.978327	1.000000				
	0.0959	0.4850	0.0000	0.1093	0.0000	-----				
NII	-0.357417	-0.426749	0.929139	0.533093	0.899329	0.876521	1.000000			
	0.1909	0.1127	0.0000	0.0407	0.0000	0.0000	-----			
RGDP	-0.397688	-0.230178	0.961851	0.548413	0.925835	0.965452	0.901401	1.000000		
	0.1421	0.4092	0.0000	0.0343	0.0000	0.0000	0.0000	-----		
INR	0.385540	0.083669	0.004126	0.189728	-0.003894	-0.028527	0.004264	0.097399	1.000000	
	0.1558	0.7669	0.9884	0.4982	0.9890	0.9196	0.9880	0.7299	-----	
INF	-0.177812	0.268882	-0.005304	0.433669	0.011660	0.029803	0.157671	0.046126	0.201593	1.000000
	0.5261	0.3325	0.9850	0.1063	0.9671	0.9160	0.5747	0.8703	0.4712	-----

Appendix: D

Ordinary Least Square

Dependent Variable: ROA
Method: Least Squares
Date: 09/04/19 Time: 09:56
Sample: 2004 2018
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.378458	4.381664	0.771045	0.4755
CAR	2.036235	2.597577	0.783898	0.4686
BSZ	0.002258	0.000895	2.523925	0.0529
LIR	-0.026928	0.059815	-0.450184	0.6714
NPL	-0.001694	0.001627	-1.041467	0.3454
DTA	-0.002942	0.001310	-2.246825	0.0746
NII	-1.22E-05	1.30E-05	-0.941344	0.3897
RGDP	0.000243	0.000295	0.822364	0.4483
INR	0.020205	0.029724	0.679747	0.5269
INF	-0.142999	0.351813	-0.406463	0.7012

R-squared	0.831254	Mean dependent var	2.475333
Adjusted R-squared	0.527511	S.D. dependent var	2.398943
S.E. of regression	1.648981	Akaike info criterion	4.072913
Sum squared resid	13.59569	Schwarz criterion	4.544946
Log likelihood	-20.54685	Hannan-Quinn criter.	4.067885
F-statistic	2.736705	Durbin-Watson stat	2.705640
Prob(F-statistic)	0.140014		

Appendix: E

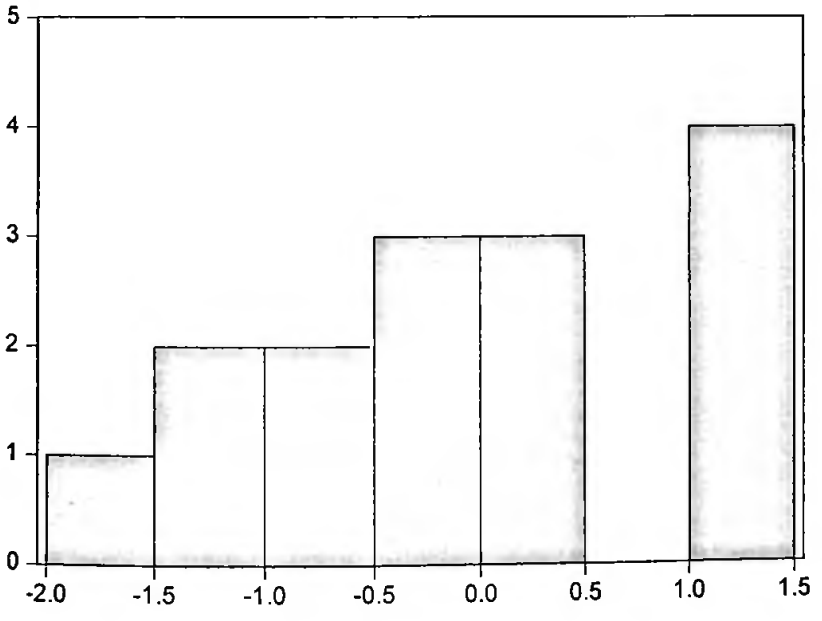
Variance Inflation Factor (VIF)

VIF
Variance Inflation Factors
Date: 09/04/19 Time: 09:59
Sample: 2004 2018
Included observations: 15

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	19.19898	105.9103	NA
CAR	6.747408	12.63681	5.184030
BSZ	8.01E-07	535.6725	247.1319
LIR	0.003578	48.49161	16.36122
NPL	2.65E-06	256.5306	124.2939
DTA	1.72E-06	315.7505	160.8587
NII	1.69E-10	170.1296	69.16854
RGDP	8.72E-08	170.1786	64.58282
INR	0.000884	5.142305	5.019752
INF	0.123773	101.1557	10.37502

Appendix: F

NORMALITY TEST



Series: Residuals	
Sample 2003 2017	
Observations 15	
Mean	-1.21e-15
Median	-0.018613
Maximum	1.394602
Minimum	-1.642161
Std. Dev.	0.985454
Skewness	-0.072496
Kurtosis	2.022722
Jarque-Bera	0.610059
Probability	0.737102

Appendix: G

SERIAL CORRELATION

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.136831	Prob. F(2,3)	0.1840
Obs*R-squared	10.14755	Prob. Chi-Square(2)	0.0863

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 09/04/19 Time: 10:03
Sample: 2004 2018
Included observations: 15
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.093492	3.227551	0.028967	0.9787
CAR	1.223728	2.160003	0.566540	0.6106
BSZ	0.001251	0.000837	1.494834	0.2318
LIR	0.009929	0.046682	0.212694	0.8452
NPL	-0.002690	0.001665	-1.616037	0.2045
DTA	0.000784	0.001012	0.774694	0.4950
NII	1.84E-06	1.03E-05	0.178315	0.8698
RGDP	-0.000457	0.000288	-1.588565	0.2104
INR	-0.037099	0.031312	-1.184837	0.3214
INF	0.016551	0.258585	0.064006	0.9530
RESID(-1)	-1.514266	0.604572	-2.504692	0.0873
RESID(-2)	0.084742	0.683276	0.124023	0.9091

R-squared	0.676503	Mean dependent var	-1.21E-15
Adjusted R-squared	-0.509652	S.D. dependent var	0.985454
S.E. of regression	1.210807	Akaike info criterion	3.211013
Sum squared resid	4.398161	Schwarz criterion	3.777453
Log likelihood	-12.08260	Hannan-Quinn criter.	3.204980
F-statistic	0.570333	Durbin-Watson stat	2.778340
Prob(F-statistic)	0.786010		

Appendix: H

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.272547	Prob. F(9,5)	0.9564
Obs*R-squared	4.936834	Prob. Chi-Square(9)	0.8398
Scaled explained SS	0.280501	Prob. Chi-Square(9)	1.0000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 09/04/19 Time: 10:08
Sample: 2004 2018
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.190672	3.455370	0.344586	0.7444
CAR	-0.225668	2.048444	-0.110166	0.9166
BSZ	-0.000250	0.000706	-0.353765	0.7379
LIR	0.001823	0.047170	0.038641	0.9707
NPL	0.000383	0.001283	0.298903	0.7770
DTA	-0.000102	0.001033	-0.098447	0.9254
NII	-3.70E-06	1.03E-05	-0.360521	0.7332
RGDP	0.000161	0.000233	0.691045	0.5203
INR	0.011189	0.023440	0.477332	0.6533
INF	-0.017865	0.277439	-0.064393	0.9512

R-squared	0.329122	Mean dependent var	0.906379
Adjusted R-squared	-0.878458	S.D. dependent var	0.948791
S.E. of regression	1.300382	Akaike info criterion	3.597915
Sum squared resid	8.454972	Schwarz criterion	4.069948
Log likelihood	-16.98436	Hannan-Quinn criter.	3.592887
F-statistic	0.272547	Durbin-Watson stat	2.401261
Prob(F-statistic)	0.956417		