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CREDIT RISK MANAGEMENT AND PROFITABILITY IN SELECT SAVINGS AND LOANS COMPANIES IN GHANA

Thesis submitted to

BANGALORE UNIVERSITY

In partial fulfillment of the requirements

For the award of the degree of

DOCTOR OF PHILOSOPHY IN MANAGEMENT

BY

KWADWO BOATENG

Under The Guidance of

Dr. Y. Nagaraju
Dean and Director

Canara Bank School of Management Studies
Bangalore University

DECLARATION

I hereby declare that thesis entitled "**Credit Risk Management and Profitability in Select Savings and Loans Companies in Ghana**" submitted to Bangalore University in fulfillment of the requirements for the award of the degree of Doctor of Philosophy (Ph.D.) in Management is a record of original and independent research work done by me under the supervision of **Dr. Y. Nagaraju**, Dean and Director, Canara Bank School of Management Studies, Bangalore University, Bangalore, India. I further declare that the thesis submitted by me has not been submitted previously in part or full to this or any other University for the award of any Degree, Diploma, Associateship, Fellowship or other similar title by any candidate.

……

KWADWO BOATENG

Date:

Place:

Dr. Y. NAGARAJU
M.Com., M.Phil., MBA, Ph.D
Professor & Dean

BANGALORE UNIVERSITY
Canara Bank School of Management Studies
(Post Graduate Dept. of Management)
JnanaBarathi Campus, Bangalore- 560056

CERTIFICATE

This is to certify that this thesis entitled "**Credit Risk Management and Profitability in Select Savings and Loans Companies in Ghana**" submitted by **KWADWO BOATENG** to Bangalore University for the award of the degree of Doctor of Philosophy in the Department of Management is a record of bonafide and independent research work carried out by him under my supervision. This has not been submitted previously in part or in full to this or any other University for the award of any Degree, Diploma, Associateship, Fellowship or other similar title.

DR. Y. NAGARAJU

Research Guide

Place: Bangalore

Date:

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ABREVIATIONS

BoG – Bank of Ghana

B&FT – Business and Financial Times

BSD – Banking Supervision Department

BBWA – British Bank West Africa

CAR – Capital Adequacy Ratio

CRM – Credit Risk Management

DV – Dependent Variable

ERP – Economic Recovery Programme

ERP – Economic Recovery Programme

GBA – Ghana Banking Association

NBFIs – Non-Bank Financial Institutions

NPLs – Non-performing Loans

NPLR – Non-performing Loan Ratio

RCBs – Rural and Community Banks

ROA – Return on Assets

ROE – Return on Equity

GSE – Ghana Stock Exchange

GBP – Great Britain Pound

GAMFIN – Ghana Association of Microfinance

IFC – International Financial Centre

IFRS – International Financial Reporting Standard

IV – Independent Variable

LTDR – Loan to Deposit Ratio

MFIs – Microfinance Institutions

MPR – Monetary Policy Rate

RTGS – Real Time Gross Settlement

SSNIT – Social Security and National Insurance Trust

S&L – Savings and Loans

USD – United States Dollar

AQR – Asset Quality Review

CHAPTER ONE

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INTRODUCTION

CHAPTER ONE

INTRODUCTION

1.1. THE FINANCIAL SYSTEM IN GHANA

The primary role of the financial system is to channel the surpluses arising in the economy through the activities of corporate houses, individual households, and the government into deficit units in the economy again in the form of individual households, corporate houses, and government. The financial system involves the financial markets such as the Ghana stock exchange (GSE), and financial intermediaries, which include specialized deposit taking institutions such as the universal banks, and nonbank financial institutions (NBFIs). The financial markets serve as 'brokers' that bring the surplus and deficit units together for mutual benefit. The financial intermediaries on the other hand create assets out of the surpluses of the economy. The financial intermediaries play three important roles in the Ghanaian economy: they mitigate the default risk of the deficit units when surplus units lend to them, serve liquidity of savings by surplus units, and lower information cost. The Ghana stock exchange was established in July 1989 as a private company limited by guarantee under Ghana's companies' code, 1963. The Exchange however, changed its status to a public company limited by guarantee in April 1994. The primary objective for the establishment of the GSE was to serve as a financial market for the purchase and sale of bonds, shares, and other securities of any company and government to make the financial system complete in the country.

1.2. MEANING AND DEFINITION OF BANKING

The name bank was believed to have originated from the term "banchi" because the table on which the Italian traders in the olden days performed their money changing business was called "Banchi or Bancheri". Other school of thought also attributed the name Bank to have been derived from the Greek word "Banque". Banks play vital roles in the development and economic growth of countries across the globe. Banking generally means engaging the business activity of accepting and safeguarding money by individuals and entities, and subsequently onwards lending

out this money to earn a profit (www.investorwords.com). A bank, therefore, is "an authorised establishment by a government for deposits taking, payment of interest, clearing of cheques, making loans, acting as an intermediary in financial transactions, and providing other financial services to its customers" (www.businessdictionary.com). The following are some prominent definitions of banking.

The section 5(b) of the India banking regulations Act 1949 defines banking as "the accepting for the purpose of lending or investment of deposits of money from the public, repayable on or otherwise and withdraw-able by cheque, draft, order, or otherwise".

"A bank is an organisation whose principal operations are concerned with the accumulation of the temporarily idle money of the general public for the purpose of advancing to others for expenditure."- **R.P. Kent**

"Bank is a financial intermediary institution which deals in loans and advances" - **Cairn Cross.**

"Bank provides service to its clients and in turn receives perquisites in different forms." - **P.A. Samuelson**.

"Bank is such an institution which creates money by money only." - **W. Hock.**

"Bank is such a financial institution which collects money in current, savings or fixed deposit account; collects cheques as deposits and pays money from the depositors‟ account through cheques." - **Sir John Pagette.**

The definitions coined by different authors boil down to the fact that banks deals in money the same manner a businessperson deals in goods and services. Banks are business enterprises, which deal in money, financial instruments and provide financial services for a price called interest, discount, commission and fees.

1.3. THE OVERVIEW AND STRUCTURE OF THE BANKING SYSTEM IN GHANA

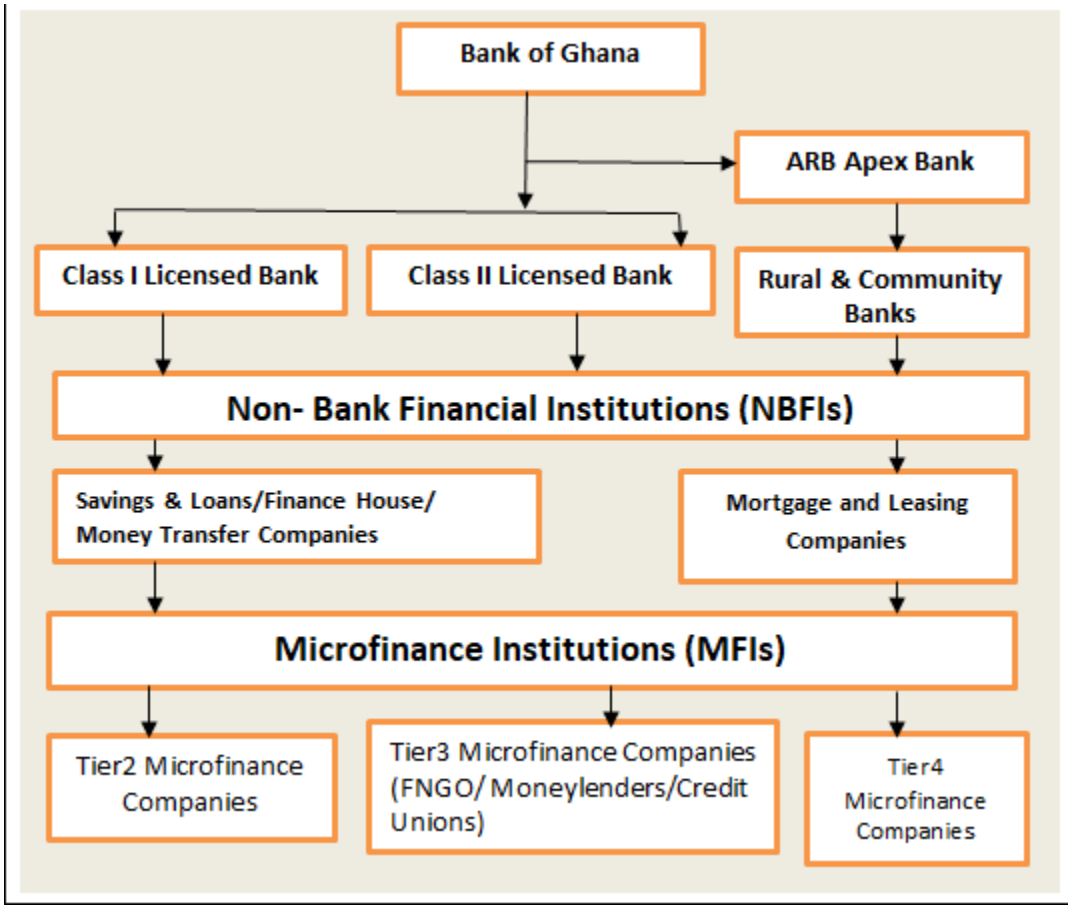
The Bank of Ghana is by law the mandatory body to have overall supervisory and regulatory authority in all matters relating to banks and non-bank financial institutions' business with the purpose to achieve a rigorous and efficient banking system in the interest of depositors and other customers of these institutions, and the economy at large. The Bank of Ghana has the responsibility of safeguarding the financial system and ensuring that it facilitates the creation of wealth, promoting economic growth and development. According to the banking Act 612 and Act 673, the functions and responsibilities of the Central Bank as a Regulator are: (1) supervise, regulate, and direct both the banking system and the credit system for the smooth operation, safety and sound a banking system. (2) The board shall appoint an officer designated as the head of the Banking Supervision Department (BSD). (3) To consider and propose reforms of the laws relating to the banking business

The banking industry in Ghana with the Central Bank of Ghana as the regulating body involves many categories. The categorisation of banking institutions in Ghana is based on capital requirements and permissible activities they were licensed to undertake. The universal banks are of two types namely; the class one, and the class two banks. The class one universal banks are licensed to undertake the following functions Deposits mobilisation; Lending; Investment in financial securities; Money transmission services; providing, and administering means of payment including credit cards, travellers' cheques and bankers' drafts; Guarantees and commitments; Engaging in trading for own account or account of customers in, Money market instruments; and Foreign exchange, or Transferable securities. The rest of the functions are to participate in securities issues and provision of services related to those issues; to provide advice to the undertakings on capital structure, acquisition and merger of an undertaking; The keeping and administration of securities; Credit reference services; Safe custody of valuables; and Electronic banking.

The class two banks are international banks with their representative branches in the country. They are permitted to undertake functions such as International Banking (Maintain accounts in major currencies, namely, USD, GBP, EURO, YEN and currencies that the IFC may deem fit; Accept deposits from Non-residents only). Operate Fixed Deposit Accounts; Interest-bearing Call Accounts and Credit Facilities (ordinary loans, overdraft, guarantees, margin trading accounts, and mortgages). Treasury products; Lending; Investment in financial securities; Money transmission services; Administering and issuing of means of payment including credit cards, travellers' cheques and bankers' drafts; Guarantees and commitments; Trading for customers or the banks' account (Money market instruments, Foreign exchange, or Transferable securities). Engaging in the issue of securities and provision of services related to those issues; Provision of advice to transactions on undertakings on capital structure, acquisition and merger of an undertaking; the keeping and administration of securities; Credit reference services; Safe custody of valuables; Electronic banking; and Any other services as the BoG may determine.

We also have the rural banking system, which operates in rural and community levels. They are localised banks that are restricted to operate within a confined geographical radius. The ARB Apex bank serves as the supervisor and regulates the activities of the rural and community banks (RCBs). It acts as the mini-central bank for the rural and community banks. The next set of banking institutions in Ghana are the non-bank financial institutions (NBFIs). The NBFIs also has subcategories thus – the savings and loans (S&L) companies, mortgage and leasing companies, the finance houses, and microfinance institutions (MFIs). Another banking system is the semiformal institutions that include credit unions, financial non-governmental organisations, individual moneylenders, and Susu collectors. Fig.1.2 below illustrates the structure of the Ghanaian banking system.

Fig.1.1: Structural presentation of the Ghanaian Banking system



Source: Authors's illustration

1.4. REFORMS IN THE GHANAIAN BANKING INDUSTRY

Various reforms have taken place in the Ghanaian banking sector, which has shaped and streamlined the banking industry. The initial reform, which started in the late 1980s, is the reason we have the current modern banking facilities in the country. It is because of the reforms that we have the various subsectors in the industry. The enactment of the Non-Bank Law (1993) Act

(328) was the birth of NBFIs such as the Savings and Loans companies, Finance houses, Hire purchase companies, MFIs etc.

1.4.1. Post-Independence Financial Sector Policies

The operating banks in Ghana between the 1950s and 980s before the reforms were wholly or majority owned by the public sector. The government also owned minority shares in the two foreign banks (Barclays and Standard Chartered banks) which have been operational since the mid-1970s. Most operational directives came from the central bank of Ghana (BoG). The BoG controlled Interest rates as well as asset allocations of the banks such as sectorial credit apportioning. The motive behind these interferences by the government was to streamline the existing market imperfection that existed from the colonial masters' regime. The policies were short-lived as severe financial repression, negative real interest rate, and a majority of credits going to only the public sector. There was, therefore, the need for immediate stabilisation of the banking sector that called for series of reforms initiated in the later part of the 1980s. The series of reforms in the banking sector was to revive the economy, which had experienced economic crises between 1976 and 1983. Table 1.1 below shows the existed pre-independence as well as pre-reform banks in Ghana.

Table 1.1: Pre-reform Banks in Ghana (1896 - 1988)

BANK	YEAR OF ESTABLISHMENT	OWNERSHIP
Standard Bank	1896	Private
Barclays Bank	1917	Private
Ghana Commercial Bank	1953	State-owned
National Investment Bank	1963	State-owned
Agricultural Development Bank	1965	State-owned
Bank for Housing and Construction	1972	State-owned
Merchant Bank	1972	State-owned
Ghana Cooperative Bank	1975	State-owned
Social Security Bank	1977	State-owned
Bank for Credit and Commerce	1978	Private

Sources: BoG Annual reports and IMF reports

The banking industry in Ghana has since 1988 experienced numerous forms of reforms. The motive behind the gradual implementation of these reforms was to improve operational

efficiency, competition and Sustainability. These initiated reforms by the central bank were to foster economic growth and development of the country as a whole. The state-owned banks dominated the banking activities in Ghana during the pre-reform era, and mainly controlled by the government.

The Ghanaian economy in the period between 1976 and 1983 had experienced severe crises, characterized by weak economic growth and severe balance of payments problems. The starting of the economic recovery program in 1983 by the government, sought to restructure the economy and reverse the trend of economic decay. It quickly became apparent to the government that it needed to undertake a restructuring of the then distressed financial sector if the economic reforms were to lead to a sustainable resumption of growth in the economy. This compelled the government of Ghana in collaboration with the World Bank to introduce financial sector reforms with a financial sector adjustment program in 1987.

Regimes upon a regime of governments of Ghana have ever since pursued various policies in the area of economic activity to ensure rapid industrialisation, modernisation of agricultural practices and the general welfare of the citizenry. Certain sectors of the economy enjoyed priority treatment because of its strategic consideration. An allocation of a percentage of the loan portfolio of the state-owned must go to some selected sectors of the economy as directed by the government (World Bank 1988)[1]. Due to some weakness inherent in the policies, certain sectors of the economy and individuals experienced excessive risk, as prominence was not on the viability of the project or better still creditworthiness of the borrower. The excessive borrowing by the government crowded the finances of the private sector (Bank of Ghana, 2004)[2].

There were high inflation rates, negative real interest rates, and low rate of savings since the Bank of Ghana did not set exchange rates on the market base but administratively. The effect of the real adverse interest, for example, resulted in highly non-performing loan portfolios of banks. Banks at the time had no or little motivation to mobilises extra savings or reduce operating costs. The banks, therefore, were unduly inefficient (International Monetary fund, 1999)[3]. The banks in Ghana were in distress at the time, especially the state-owned ones. For instance, in 1987, non-performing loans reached 41% of the total credits (IMF, 1999).

A study by the World Bank in the banking sector in Ghana (1988) concluded that the Ghanaian banking sector was facing high operating costs due to inefficiency, a high rate of non-performing loan portfolios, alarming insolvency in the banking system, reported inflated profits and capital inadequacy. The economy of Ghana was in terrible shape due to the crash in the banking sector because of the general economic decline during the 1970s and the early part of 1980s (World Bank report, 1988). In 1987, the Ghanaian economic situation was in profound crisis and on the verge of collapse. There was, therefore, the urgent need for economic and financial reform since the banks at the time could not mobilise savings and supply credit to even the critical sectors of the economy.

In 1988, Ghana implemented financial sector reforms as part of the economic adjustment program, which aimed at restructuring its financial system. The system at the time was in distortion state due to the interest rate controls and selective credit policies, lack of competition, and weak supervision by the Bank of Ghana (World Bank, 1989)[4]. The same report again indicated the high exposure of many of the banks to foreign exchange risk.

In light of all these happenings, the government initiated financial sector reform with the objective of achieving the following goals:

a. Establishing a sound prudential and regulatory framework for guiding banking operations in Ghana

b. Ensuring a uniform accounting and auditing standards for all bank

C.To establish a more effective banking supervision Department (BSD) equipped with personnel with the requisite skills to enforce rules and regulations, and code of conduct for the banks

d. To create a framework for restructuring distress banks with the intention of transferring their non-performing assets which had chocked their balance sheets and inhibited initiatives in credit operations to the government agency, the non-performing assets recovery trust (NPART)

e. To establish fully liberalised money and capital markets in Ghana (Bank of Ghana Annual report, 1989)

1.4.2. Stages of the Banking Sector Reforms in Ghana (1988 -2018)

The banking industry in Ghana over the last decades has gone through various structural reforms, which has transformed the banking business's mode of operation, ranging from broadening of the scope of their business activities, opening up for foreign bank participation, to capital requirements. Table 1.2 below shows stage-by-stage reforms since the year 1988 up to 2017.

Table 1.2: Tabulated stages of reforms in the Ghanaian banking industry

YEAR OF REFORM	REFORMS MADE
1988	Private banks authorised to operate, Decontrolled the minimum banks' savings rate, Removal of sectorial credit controls except for agriculture. Established foreign exchange bureaus
1989	The enactment of the new banking law to strengthen the regulatory environment and supervisory authority of the Bank of Ghana, in the areas of minimum capital requirement, disclosure, and prudential lending guidelines
1990	Liberalization of commercial banks' interest rates and bank charges. Abolition of credit controls including credit allocation by sector. Bank of Ghana bonds replaces Non-performing loans of state enterprises in three financially distress state-owned banks. Abolition of lending targets for the agriculture sector, replacement of Non-performing loans of the private sector by Bank of Ghana bonds in three financially distress state-owned banks and. Restructuring of six financially distressed banks
1991	Bank of Ghana bonds replaces Non- performing loans of the private sector in four sound banks
1992	New Bank of Ghana law is enacted to offer stronger supervisory and regulatory powers to the Bank of Ghana
1995	Sale of 30% of government shares in Social Security Bank after merging with National Savings and Credit Bank but the subscription rate was only 21%. Placement of 60% of the capital of the Social Security Bank through the Ghana stock exchange
1996	Sale of 30% of government shares in Ghana Commercial Bank (GCB) through the Ghana stock exchange (GSE); after

	oversubscription, the public offer was raised to 42%
1998	Government sold three quarters (3/4) of the remaining 40% share its own in Barclays bank.
2000	Closure of three insolvent banks namely; Cooperative bank, Bank of Credit and Commerce, Bank for Housing and Construction, and transfer of guaranteed deposits
2002	Bank of Ghana Act (2002) passed to give independence to the central bank, with the primary function of making price and financial stability. also, there was an Introduction of Real Time Gross Settlement (RTGS) system also known as the Ghana interbank settlement system in the same year
2003	the introduction of universal banking license which necessitated the Bank of Ghana issuing a directive requiring all banks to increase their minimum capital requirements from GH¢20,000 to GH¢7,000,000 by the end of 2006. Removal of maintenance charges, transaction and transfer fee charged by commercial banks by the government. The payment system act (2003) equipped BoG with the explicit powers to oversee payment system.
2004	Banking act (2004) replaces the banking law (1989). BoG began to strengthen its risk-based prudential supervision policies. Besides, the BoG increased minimum capital adequacy ratio from 6% to 10%. There was an introduction of a paper-based credit clearing system and the elimination of the secondary reserves by Bank of Ghana.
2006	Enactment of Foreign Exchange Act (2006) for the purpose of liberalizing inflow of foreign exchange in Ghana for foreign direct investment purposes. Abolition of 15% secondary reserve deposit requirement by banks
2007	Banking amendment act (2007) to allow offshore banking to enable the establishment of international financial services in Ghana. The credit-reporting act, (Act 726) enacted to enable the establishment of credit reference bureaus, to offer these institutions a legal and regulatory framework backing for credit reporting in Ghana. The introduction of the International Financial Reporting Standard (IFRS) and all banks were to report their financial position and performance following IFRS. Then the implementation of risk-based supervision of banks.
2008	The anti-money laundering Act, 2007 (Act749) enacted to provide structure for criminalising money laundering. The enactment of borrowers and lenders Act (2008) was to provide a framework for creditor and borrower relations disclosure and in particular the role of collateral in the delivery of credit. The operation of a conventional

	electronic platform, the Nation Switch (e-Zwich) and a biometric smartcard came into being.
2009	the introduction of the cheque codeling clearing system (CCC), which reduced the cheque clearing period from between 5 - 8 days to 2 - 3days throughout the country. Minimum capital requirement for banks increased from GH¢7,000,000 to GH¢60,000,000 which aimed to strengthen the capital base of the banks to enable them to assume higher levels of risk. The authorisation and launching of Mobile payment services to enable mobile phone operators to offer financial services
2010	Commencement of electronic direct credit transfer system- a component of the automated clearinghouse project.
2013	Raising of capital requirement for banks from GH¢60,000,000 to GH¢120,000,000 and that of NBFIs was also raised from GH¢7,000,000 to GH¢15,000,00
2017	There was another increase in minimum capital requirement for banks from GH¢120,000,000 to GH¢400,000,000.
2018	End of Year 2018 was the deadline for the compliance of the new capital requirement. The 34 operating banks reduced to 23 partly due to the banks' inability to meet the requirement, which led to mergers, acquisition, takeovers, consolidation and downgrading of some to Savings and Loans Companies.

Sources: Consolidated from BoG reports, IMF reports, World Bank Reports

The implementation of the above reforms has brought about an influx of foreign banks, which has made the banking industry very competitive. It has also strengthened and changed the fortunes of the banking industry in Ghana as banks now operate in a liberal environment. Because of the reforms, banks operating in Ghana have since increased in numbers year after year as can be seen in table 1.3 below. Prior to the year 2003, the banking system in Ghana was operating under the three-pillar model namely development, merchant and commercial. In 2003, the central bank of Ghana replaced this three-pillar system with the universal banking system. Universal banking system according to Mawutor (2015)[5] is a financial system where banks are permitted to provide a variety of services to their clients. A typical universal bank renders variety of products and services including merchant banking, mutual funds, depository services, investment services etc. under one roof.

Table 1.3: List of post reform banks as at 2019

N0.	NAME OF BANK	BANK TYPE
1	Access Bank (Ghana) Ltd.	Class 1 Bank
2	Agricultural Development Bank (ADB)	Class 1 Bank
3	Bank of Africa (Ghana) Ltd.	Class 1 Bank
4	Barclays Bank of (Ghana) Ltd	Class 1 Bank
5	CAL Bank Limited	Class 1 Bank
6	Consolidated Bank Ghana Limited	Class 1 Bank
7	Ecobank (Ghana) Limited	Class 1 Bank
8	Fidelity Bank Limited	Class 1 Bank
9	First Atlantic Bank Ltd	Class 1 Bank
10	FBN Bank Ghana Ltd	Class 1 Bank
11	GCB Bank Limited	Class 1 Bank
12	Guaranty Trust Bank (Ghana) Limited	Class 1 Bank
13	National Investment Bank Ltd	Class 1 Bank
14	Omni BSIC Bank Ghana Ltd	Class 1 Bank
15	Prudential Bank Limited	Class 1 Bank
16	Republic Bank (Ghana) Ltd	Class 1 Bank
17	Societe General Ghana Limited	Class 1 Bank
18	Stanbic Bank (Ghana) Ltd	Class 1 Bank
19	Standard Chartered Bank (Ghana) Limited	Class 1 Bank
20	United Bank for Africa (Ghana) Ltd	Class 1 Bank
21	Universal Merchant Bank (Ghana) Ltd	Class 1 Bank
22	Zenith Bank (Ghana) Limited	Class 1 Bank
23	First National Bank Ghana Ltd	Class 1 Bank
24	GHL Bank Ltd	Class 1 Bank
	OTHER BANKS	
1	ARB Apex Bank Ltd.	
	REPRESENTATION OFFICES IN GHANA	
1	Citibank N.A. Ghana Rep. Office	Class 2 Bank
2	Ghana International Bank plc	Class 2 Bank
3	Exim Bank of Korea (Representative Office)	Class 2 Bank
4	Bank of Beirut (Representative Office)	Class 2 Bank

Source: Bank of Ghana

1.5. THE EMERGENCE OF THE NON-BANK FINANCIAL INSTITUTIONS (NBFIs)

After various reforms in the banking sector, it opened up the private sector and created opportunities in the Small, and Medium Enterprise (SMEs) bracket. The booming SME sub-economic sector needed financial intermediation, but the nature of the products and services of the conventional banks hindered their access to bank services. According to (Adjei, 2010)[6], Micro-entrepreneurs constitute about 66% of the labour force in the country and, thus represent a vital economic force. These categories of entrepreneurs have financial needs such as access to credit facilities, which the universal banks were not offering. It also became evident that these economic players keep large amounts of unbanked funds. In order to address this financial services gap, the government passed a law for the licensing of Non- Bank Financial Institutions (NBFIs) to focus on the SME sector of the economy that has received less attention over the years. The NBFIs, which were previously operating in the informal sector or under the company's code with special permission from the ministry of finance, or were established and governed by specific laws, came under the supervision of BoG through NBFIs unit at the BoG which implements the financial institutions (Non-Bank) Law (1993) Act (328). The NBFIs only had a formal regulatory framework after the financial sector reforms had begun.

Broadly classified, the Non-Bank Financial sector comprises of the following institutions: The Social Security and National Insurance Trust (SSNIT) (now operating under the social security law of 1991); the Insurance Companies (operating under the 1989 insurance Law); Leasing Companies; Mortgage Finance companies; and Discount Houses. The rest are the Ghana Stock Exchange (GSE) (operating under the securities industries Law); Finance Houses; Savings and Loans Companies; Hire Purchasing Companies; Forex Bureau, Financial Non-Governmental Organizations, Microfinance Companies, Remittance companies, Credit Reference Bureau, and Credit Unions. Table 1.4 below shows the list of licensed NBFIs under the Non-Bank (1993) Law in Ghana as at 2017.

Table 1.4: Number of licensed NBFIs as at 2017

SN	NATURE OF BUSINES	NUMBER
1.	Savings & Loans Companies	37
2.	Finance House Companies	23
3.	Financial NGOs	11
4.	Mortgage Companies	1
5.	Credit Reference Bureaux	3
6.	Finance And Leasing	3
7.	Remittances Companies	2
8.	Leasing Companies	2
9.	Money Lending Companies	67
10.	Credit Unions	435
11.	Microfinance Companies	467
12.	Forex Bureau	431
	Total	1,471

Source: Bank of Ghana

1.6. CREDIT RISK MANAGEMENT AND PROFITABILITY

Credit administration is one of the significant activities of banks and non-bank financial institutions (NBFIs) in Ghana and the world at large. The NBFIs comprises of the Savings and Loans Companies, Financial Non-Governmental Organization (FNGOs), Money Lending companies, Finance Houses, Credit Unions, and microfinance companies. The large proportion that loans constitute in the overall operating assets of these lending institutions evidences their level of credit activities. However, managing a business and maintaining a continuous growth has become a challenge for managers of financial institutions in this era of market competition and economic fluctuations especially in developing countries such as Ghana. Considering the impact a healthy loan portfolio has on the lending institutions concerning liquidity, lending capacity, earnings, and profitability, managers of these firms have no other options than to consider and employ prudent credit-risk management practices in order to be profitable and remain sustainable.

A sound banking system is vital for a healthy and vibrant economy. The performance of the Ghanaian economy mostly is dependent on the performance of the banking sector. The banking sector's performance portrays an image of the economic strength of every country. A healthy banking system acts as the foundation for the socio-economic and industrial growth of a country's economy. In 1987 for instance, non-performing assets (NPAs) in the banking history of Ghana, peaked at 62 billion Cedis with non-performing loans (NPLs) alone amounting to 32 billion Cedis representing 51.6% of the total credits that made the banks running into financial distress (Kapur et al., 1991, pp60-61)[7]. According to Baldwin and Mason (1983)[8], "financial distress occurs when a firm's business deteriorates to the point where it cannot meet its financial obligations". The economy of Ghana was appalling at the time due to performance decline in the banking sector as a result of the weakness in the economy as a whole during the early part of the 1980s (World Bank report, 1988). Given the above, Das and Ghosh, (2007)[9], therefore opines that the health of a country's financial system has an essential role in the country since the failure in the financial sector can disrupt economic development of the country.

Microfinance Institutions (MFIs) which includes the Savings and Loans companies, currently provide financial services to an estimated 15 per cent of the country's total population as compared to 10 per cent for the universal banking sector (Arko, Samuel Kofi, 2012)[10]. Credit risk undoubtedly remains the largest source of risk for banking institutions across the globe (Bank Negara Malaysia, 2011)[11]. Effective credit management is therefore vital to ensure that the credit activities of a banking institution occur prudently to reduce failure of the institutions. Credit risk management, therefore, remains a significant predictor of the bank's financial performance. According to Poudel (2012)[12], among the risk management indicators used by banking institutions in the Management of risk, default rate risk is a single most important predictor of bank performance. Management of trade-off between risks and return is of paramount importance to the profitability of non-bank financial institutions and the general banking sector as a whole.

Banks grants loans with the expectation of getting it back through the agreed repayment schedule but usually, a significant part of the loans disbursed by the lending institutions, become non-performing and eventually generates into bad debts with its adverse consequences affecting the overall performance of these financial institutions. The issue of loan default (NPLs) is becoming

an increasing problem that threatens the sustainability of banking institutions in Ghana. For example, the quarterly bank of Ghana stability report indicated that NPLs had increased from GH¢6.14 billion in December 2016 to GH¢8.58 billion in December 2017. The 2017 stock of NPLs represented an NPLR of 22.7%, an increase from December 2016 ratio of 17.3%. After adjusting for fully provisioned loan loss, the net NPLR stood at 10.8%, an increase from 2016 net NPL ratio of 8.4%. It is a clear indication of how alarming the situation had become. It is therefore paramount that, credit risk has a significant effect on income generation of financial institutions. Hence, credit-risk management capability of a bank remains a conscious academic discourse in finance and economics that requires research to ascertain the root cause of the alarming incremental rate on year-on-year basis.

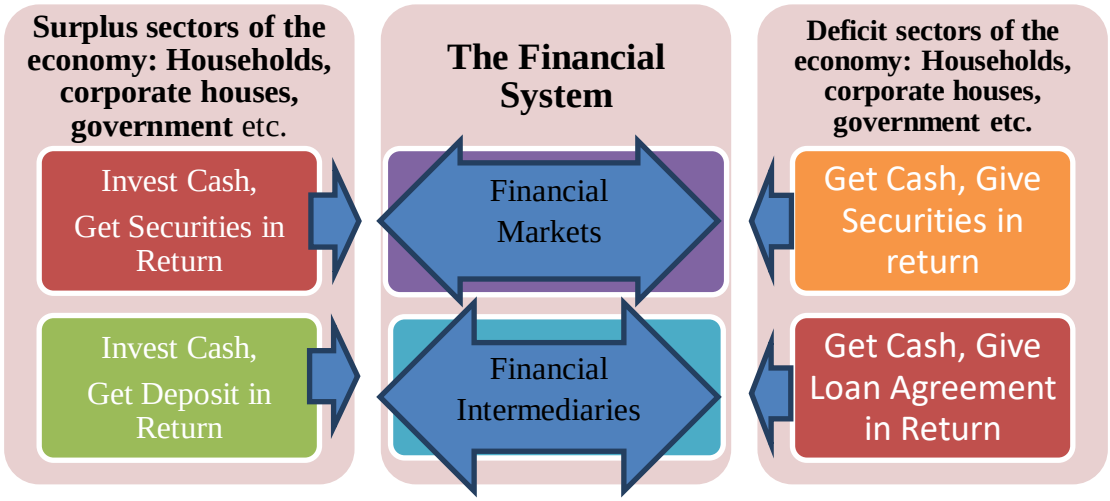
1.7. CREDIT

Banks in any country around the world have a very vital role to play. The primary function of the financial system is to channel the surpluses arising in the economy through the activities of corporate houses, individual households, and the government into deficit units in the economy again in the form of individual households, corporate houses, and government. The financial system includes financial markets and financial intermediaries. The financial markets serve as 'brokers' that bring the surplus and deficit units together for mutual benefit. In the financial markets, largely the surplus units themselves assume the risk of lending to the deficit units. The financial intermediaries, on the other hand, create 'assets' out of the surpluses of the economy where the credit risk arises. By doing so, the risk of lending to the deficit sector is not borne by the surplus units as in the case of the financial markets but rather the intermediaries (Suresh and Paul, 2018, P. 146)[13]. The financial intermediaries also assure liquidity to the surplus units who have entrusted their savings to them and again reduce risk with low information costs. The financial intermediaries, therefore, serve three main purposes:

- They mitigate the default risk of deficit units when surplus units lend to them
- They serve liquidity of savings by surplus units
- They lower information cost

The flow of fund through the financial system is as illustrated in fig.1.3 below.

Fig.1.2: Flow of fund through the financial system



Source: Suresh and Paul, (P.146)

1.7.1. Types of Lending

There are two main classifications of Bank lending namely; fund based lending and non-fund based lending.

1.7.1.1. Fund-based lending:

This form of lending is the most direct form of lending that involves parting with funds to the customer through either the account or payment made directly to the suppliers of materials or assets to be purchased. Fund based facilities include demand loan, term loans, overdraft, cash credit, packing credit and bills purchase/discounted. A grant of any of the fund-based credit facilities to a borrower would result in depletion of actual liquidity of a banker immediately (Agarwal, 2016, P.173)[14]

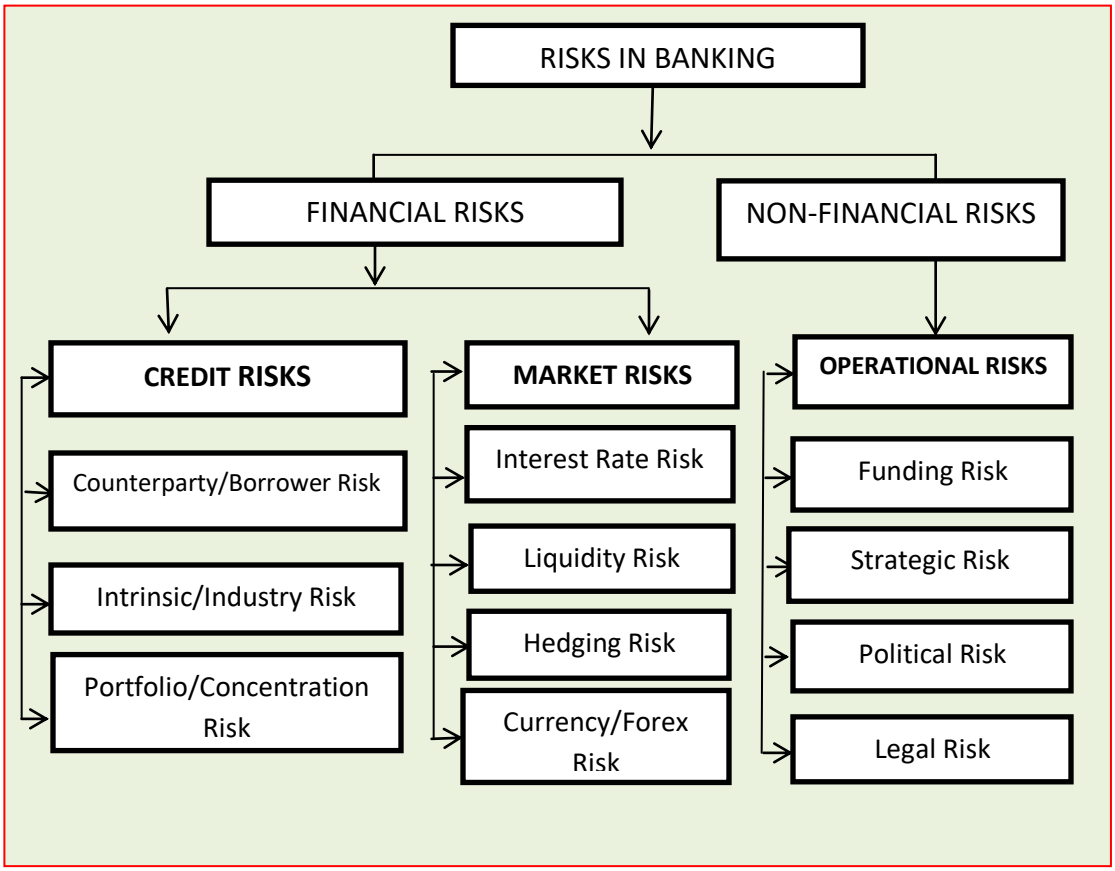
1.7.1.2. Non-fund based Lending Facilities

Non-fund based lending as the name implies is a type of credit facility that does not involve an immediate outlay of cash but rather the bank makes a promise in favour of a third party to provide a monetary compensation on behalf of their customer if certain conditions are fulfilled. The mere fact that there is no immediate cash outflow does not suggest that the fund-based credits are riskier than the non-fund based credits. , in general, have attested to the fact that the non-fund based credits are even riskier than the fund-based credits. Mainly is due to lack of proper appraisal on the part of the banker of an application for non-fund based credit limits since it does not involve an immediate outflow of cash upon sanction of the facility. It is therefore worth noting that whether credit proposal is fund-based or non-fund based deserves an equal standard of security and appraisal scrutiny. There are two significant types of non-fund based facilities, which are Bank guarantees (BG), and letter of credits (LC).

1.8. TYPES OF RISKS IN BANKING

Generally, the term risk is an uncertain event or condition that, if it occurs, affects at least one objective. In other words, the risk is the probability or threat of quantifiable damage, injury, liability, loss, or any other negative occurrence that happens due to external or internal vulnerabilities, which we can avoid through preemptive action. The Reserve Bank of India identified and categorised the risks encountered in banking into three major types namely; Credit risks, Market risks, and Operational risks (Krishn & Sunita (2010)[15]. The risks can fall under either financial risks or non-financial risks. The financial risk comprises of credit risk and market risk whereas operational risk falls under the non-financial risk. The fig.1.4 below illustrates the categorisation of risk under the three main types. Risks such as counterparty or borrower risk, intrinsic or industry risk, portfolio or concentration risk are examples of credit risk. Risks that falls under market risk include interest rate risk, liquidity risk, hedging risk, and Forex or currency risk. Funding risk, strategic risk, legal risk, and political risk are examples of non-financial risk.

Fig. 1.3: Types of risk in banking



Source: Krishn & Sunita (2010)

1.9. CREDIT RISK

Kargi (2011)[16] opines that credit creation is the primary income generating activity for banks. It means bank grant credit to produce profit, but in the process, they assume and accept risks. Because of that, credit-risk management remains critical to the growth and survival of banks otherwise credit activities can lead to financial distress. Greuning and Bratanovic (2009)[17] defined credit risk as the probability that a debtor or issuer of a financial instrument whether an individual, a company or even a country, will default on the repayment of the principal and other investment-related cash flows according to the terms specified in a credit agreement. Another school of thought defines credit risk as the cost of replacing cash flow when the counterparty defaults. In other words, the risk that counterparty fails to perform an obligation owed to its

creditors. Suresh and Paul (2018, P.250) defined Credit risk as the probability that a loan customer of a bank or counterparty will fail to meet its obligation per agreed terms.

The most acceptable definition is "the potential that debtor or a counter-party default in satisfying predetermined obligation according to the agreed terms" (Basel, 1999)[18]. Credit risk, therefore, means that payments may delay or may not be done at all, which lead to cash flow problems and that affects a bank's liquidity. Credit risk broadly includes both the risk that an obligor or counterparty fails to comply with their obligation to service debt and the risk of a decline in the credit standing of the obligor or counterparty. According to (Kargi, 2014)[19], we find credit risk in all activities whose success depends on the performance of counterparty. In banks, credit risk arises when bank funds are extended, committed, invested, or exposed through actual or contractual agreements whether it is on or off balance sheet. It implies that banks encounter credit risk in the issuance of other financial instruments other than loans such as interbank transactions, foreign exchange transactions, and letter of credits, guarantees, acceptances, bonds, equities, swaps and in settlement of transactions.

Although risks such as market, and operational, affects the performance of banks in many ways, Chijoriga (1997)[20] argues that the magnitude of loss caused by credit risk as compared to the other risks will be enough to collapse a bank. Prakash Poudel (2012) also argued that credit risk is an essential predictor of the bank financial performance and further stressed that, among the risk management indicators; default rate management is the single most important predictor of the bank performance.

1.9.1. Counterparty/ Borrower Risk

Counterparty or borrower risk is the risk that arises to each party of a contract that the counterparty will not live up to the contractual agreement. The effect of counterparty risk is a risk to all parties involved and need consideration during the drafting and signing of contract documents. Losses due to counterparty risk may arise under the following circumstances:

- When a consumer fails to make the payment due on say mortgage loan, credit card, a line of credit or other forms of loans

- When a business or consumer does not pay a trade invoice when due
- Whenever an employer fails to pay wages and salaries to employees when is due
- When an insolvent insurance company does not honour policy obligations
- When an insolvent bank or any other financial institution fails to pay depositors

1.9.2. Intrinsic/ Industry Risk

Credit risks in general terms emanate from two main risks; default risk and portfolio risk. The portfolio consists of inherent and concentration risks. In a bank's loan portfolio, credit risk arises from external (extrinsic) and internal (intrinsic) factors. The external factors include the state of the economy, changes in equity prices, foreign exchange and interest rates, restrictions in trade, economic sanctions, and government policies. The intrinsic factors have to do with certain deficiencies in loan policies and administration, lack of credit concentration limits, insufficiently defined lending limits for credit officers and credit committees, deficiencies in appraisal, depending excessively on collateral and low-risk pricing, an absence of loan review mechanism and post disbursement monitoring.

1.9.3. Portfolio/Concentration Risk

Concentration risk denotes the spread of a bank's outstanding loan portfolio over the number debtors. To measure concentration risk, we use a concentration ratio. It explains the percentage of the outstanding accounts each bank loan represents. When there is an economic slowdown in a particular sector where the bank has most of its portfolio concentrated, the rate of default will overwhelm the bank. It is therefore advisable to diversify the portfolio by lending to different sectors of the economy. Concentration risks are of two types, which depend on the source of the risk. Name concentration risk arises due to uneven distribution of the exposures to its borrowers. Sectorial concentration is another type of concentration risk, which arises when there is an uneven distribution of exposures to a particular sector, region, industry or a product.

1.10. MARKET RISK

Market risk is the risk of losses in position arising from movements in market prices. An investment may face market risk due to fluctuations in the market price. The risk here is that the investment's value will decrease. Also known as systematic risk, the term may also refer to a specific currency or commodity. Elmer Funke Kupper (1999)[24] in an article titled risk management in banking defined market risk as "the risk to earnings arising from changes in underlying economic factors such as interest rates or exchange rates, or fluctuations in bond, equity, or commodity prices". Market risk according to Saunders & Cornett (2006)[25] is the uncertainty relating to financial institutions earnings on their business portfolio. Market risk according to Pyle (1997)[26] is the variations in the asset value, due to changes in contributory economic factors such as equity and commodity prices, exchange rates, and interest rate. Every bank is subject to market risk in both the management of their balance sheets and in trading operations. Generally, market risk is the risk value of a portfolio, either a trading portfolio or an instrument portfolio will decrease due to the change in the value of the market risk factors.

1.10.1. Interest-rate Risks

An Interest rate risk is a negative impact on the bank's financial dealings and earnings because of adverse movement in interest rates. Interest rate risk refers to the possible impact on net interest income. In other words, it is the difference between interest paid on deposits and the interest earned on loans. These types of risk arise when a change in the market interest rate results in financial losses related to asset and liability management. It is worthy to note that, the market determines the interest rate and not the central bank or the individual bank that only react appropriately to the changes in order for them to achieve the desired results. The loan portfolio in banking institutions are funded out of a composite portfolio of short-term borrowings and deposits and therefore cause a considerable degree of maturity risk and interest rate risk. Interest rate risk affects lending institutions in many ways. It impacts may be on the earning of the banking institution or the market value of the bank's assets or both. The problem even gets more

and more complicated by the application of fixed rates on some and floating rates on the other assets and liabilities.

We measure it by using the past and present market volatility and profile of the assets and liabilities of the institution and its possible exposure through gap management. We can control Interest rate risk through hedging (in the form of swaps, options, and futures) the assets and liabilities and doing proper research and quantifying pending changes and scenarios.

1.10.2. Liquidity Risk

A financial institution is said to be liquid if it can meet its obligations as it falls due. Liquidity in banking is the ability of a bank to accommodate deposit and other liabilities withdrawals and fund loan portfolio growth and off-balance sheet claims. Liquidity risk is a financial risk due to uncertain liquidity. It arises from funding long-term assets with short-term liabilities thereby making the liabilities subject to refinancing risk or rollover. It also arises when the bank's credit rating falls since it leads to unexpected cash outflow or in some instances it results to counterparties cutting trading ties or lending to the firm. Another way that firms are exposed to liquidity risk is when markets on which it depends are subject to loss of liquidity. Market and funding liquidity risk have a reciprocal effect on each other as it becomes difficult to sell when investors are also facing funding problem. Again if a trading organisation has a position in an illiquid asset, it is limited in its ability to liquidate that position at short notice, which compounds its market risk. Liquidity planning, therefore, remains an essential aspect of risk management framework in banks.

1.10.3. Hedging risk

To understand hedging in a simple term is to take it as insurance cover. When deciding to hedge, it is insurance against a negative occurrence. Hedging does not prevent an adverse event from happening, but if it occurs, the impact will be minimal. Individual investors, portfolio managers and corporations use hedging techniques to minimise their exposure to various kinds of risks. Hedging in the financial markets is far more than just paying a premium to an insurance company every year. Hedging against investment risk means that strategically using another

form of an instrument in the financial market to compensate for the risk of any adverse price fluctuations. For instance, when an investor buys a stock, s/he will gain if the stock market price goes up.

On the other hand, s/he losses when the stock market price come down. However, the investor is uncertain whether the market price will go up or down so, in order to protect him/herself against potential losses, the investor may want to hedge the risk. To Hedge, the investor invests in another financial instrument that will yield a profit if the stocks s/he purchased decreases in value. Hedging the investment reduces the impact of the loss.

1.10.4. Currency/ Forex Risk

These types of risk arise when changes in the foreign exchange rate cause different denomination assets to fall in value or liabilities to increase in expense. We can measure foreign exchange risks by marking-to-market the value of the assets or increase of the liability, by actual movement of the assets and liabilities, and the currency of the booked or pending assets and liabilities or country of earning repatriation. To mitigate these types of risks, we use hedging of the assets and liabilities and researching pending changes and scenarios.

1.11. OPERATIONAL RISK

The Basel accord (2006)[27] defined operational risk as "the risk of direct or indirect loss resulting from the inadequate or failed internal process, people and systems or external events". Bessis (2010)[28] also explained operational risk as malfunctions of the information system, reporting system, internal monitoring rules and internal procedures designed to take timely corrective actions or compliance with the internal risk policy. Operational risk, therefore, appears at different levels such as human errors, process and technology, and information technology. Since operational risk is event risk, ineffective monitoring and reporting of risks will result in ignoring some significant risks which will mean that there will be no trigger for corrective action and this can result in a disaster. Greuning and Bratanovic (2009) have stated that, developments in modern banking operations such as increased reliance on modern technology, expanding retail operations, growing e-commerce, outsourcing of functions and activities, and greater use of

structured finance (derivatives) techniques have claimed to reduce credit and market risks but have contributed to higher levels of operational risk in banks. To achieve a maximum objective of setting up an operational risk management framework requires a change in behaviour and culture of the organisation. Management must not only ensure adherence to operational risk policies in place but also make a regular report to senior management. Again, there will be a need for conducting self-assessment of the controls in place to manage and mitigate operational risk.

1.11.1. Funding Risk

It is the probability of loss from higher funding costs or from a lack of funds to finance a project (http://www.businessdictionary.com/definition/funding-risk.html). When the cost of capital for a project is high, it strains the project's cash flow resulting in inadequate funds to sustain the business.

1.11.2. Strategic Risk

This risk may arise from the pursuit of an unsuccessful business plan. For instance, the strategic risk might arise from poor business decision making, inadequate resource allocations, and poor execution of decisions and failure of management to respond adequately to changes in the business environment.

1.11.3. Political Risk

It is the type of risk investors, companies, and governments encounter due to political decisions, events, or condition in a particular country or region that affect the profitability of a business actor. The risk of a strategic, financial, or personal loss for a firm because of such non-market factors such as macroeconomic and social policies or events related to political instability. Political risk occurs at both macro and micro levels. Macro-level political risks have related impacts on all foreign actors in a specific location. Micro-level risk on the other hand focuses on sector, firm or project specific risk.

1.11.4. Legal and Regulatory Risk

Banking institutions on a daily basis enter into numerous contractual agreements in the cause of their daily operational activities. As a result, banks are most at times, caught in the web of legal disputes with counterparties. Legal risk is the risk that potential lawsuits from a disgruntled employee, customer, negligent conduct, improper documentation, workplace regulations or environmental contamination will massively disrupt the company's operations. The legal department has the responsibility to pursue any legal tussle bought against the bank. The legal department, therefore, must prepare and scrutinise, any contract the bank decides to enter.

1.12. NON-PERFORMING ASSETS (NPA)

An asset becomes non-performing whenever it ceases to generate income for the bank. In respect of term loan, if the interest or instalment of principal or both remains overdue for over 90 days, then it is non-performing. Concerning running accounts like overdraft or cash credit, if the account remains out of order for more than 90 days, it is non-performing. In respect to short duration crop loan, if it remains overdue for two crop seasons or more, then it becomes non-performing. In case of long duration crop loan, if the loan remains overdue for one crop season or more, it is non-performing. In respect of securitisation transactions, if the amount of liquidity facility remains overdue for more than 90 days, it is non-performing. For derivative transactions, if the receivables remain overdue for over 90 days, it is non-performing.

1.12.1. Assets Classification and Provisioning

It is a requirement and responsibility of banks to classify its loan assets and make adequate provision for diminution in value of the loan assets. It is to ensure that the bank knows the quality its assets at any point in time. Bank of Ghana through the banking act 2004 Section 53 (1) has outlined the various categorisations of loans as summarised in Table 1.5 below. The categorisations are Current Assets, Overdue Loans Especially Mentioned (OLEM), Substandard Assets, Doubtful Assets, and Loss Assets.

Table 1.5: Asset Classifications and Provision allocations

Credit Risk Rating	Days Past Due	Provision (%)
current	0 - less than 30	1
OLEM	30 less than90	10
Substandard	90 less than 180	25
Doubtful	180 - less than 360	50
Loss	360 and above	100

Source: Section 53(1) of Banking Act, 2004

Current Assets: these assets comprise of loans freshly disbursed yet to commence repayment and those that have passed due but not more than 30 days.

OLEM: is an acronym for Other Loans Especially Mentioned, the risk may be minimal, but it may involve needless risk, which depicts an inherent weakness in the assessment stages. Such loans contain weakness such as an inadequate loan agreement or poor condition of or control over collateral or deficient loan documentation or evidence of imprudent lending practices. Deterioration in market conditions in future may unfavourably influence the operations or the financials of the borrower, but may not threaten liquidation of assets held as security. The risks carried by the special-mentioned loans are more than usual such that, had they been present during the credit appraisal would have led to the rejection of the credit request.

Sub-standard Assets: these assets have a well-defined weakness that may threaten liquidation of the debt since the borrower's financial condition or the collateral given as security is not enough to protect the facility. The consequence is that without correcting the defects, the bank is likely to incur a loss.

Doubtful Assets: these assets contain all the inherent weakness of sub-standard assets and recovery of the debt in full is entirely inaccessible. At this point, auditors may insist on a write-down of the asset through a charge to loan loss reserves or a write-off of a portion of the asset or they may call for additional capital allocation. Any portion of the balance outstanding in the

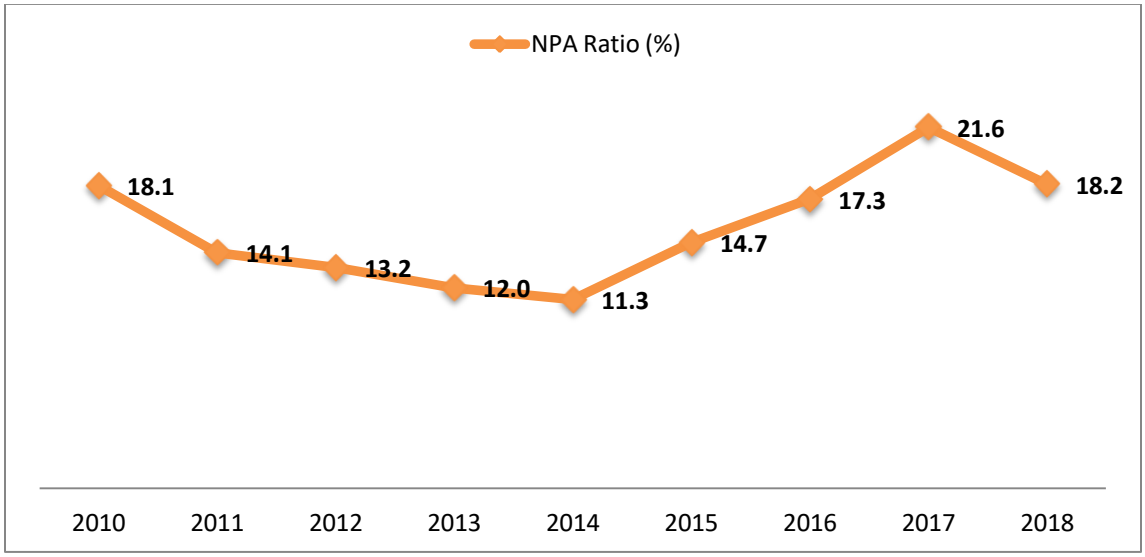
loan, which is are not covered by the market values of the collateral, may be identified as uncollectible and written off.

Loss Assets: all identified losses have to be charged-off. Uncollectible loans with such little value that, their maintenance as bankable assets is unwarranted and are generally charged-off. Losses occur in the same period in which they are written-off.

1.12.2. The NPA Trend in the Ghanaian Banking Industry (2010 – 2018)

The NPA ratio, which is the ratio of the gross non-performing assets to total advances, is a measure of the quality of assets in the industry. The higher the ratio, the more alarming is the situation. Higher net NPA means the bank's profit will be under pressure in the near future. The trend of the average NPA ratio of the entire banking industry from 2010 to 2018 is as show in fig.1.6 below. The industry acceptable NPA ratio is 5% but the ratios from 2010 to 2018 are all way above the benchmark ratio. In 2010, the NPA ratio stood at 18.1%, which kept on declining in the subsequent year until 2014 and then worsened from 2015 and peaked at 21.6% in 2017 and declined to 18.2% in 2018.

Fig.1.4: NPA trend in the Ghanaian banking sector



Source: The World Bank

1.13. MITIGATING CREDIT RISK

Lenders (banks) can reduce the effect of credit risk on their institutions in many ways. The most commonly practised mitigating measures employed by lenders are as discussed below:

- **Covenants** – Lenders may outline the terms and conditions of a loan (covenants) into agreements, which stipulates specific demands on the borrower such as:
    - Furnishing the lender with periodic financial statements,
    - The borrower desisting from making further borrowings, paying out a dividend to shareholders or repurchasing shares as well as any other actions that may undermine the borrower's financial position
- **Diversification** – When lenders end up lending to a small section of borrowers, they subject the financial institution to an extrinsic risk called concentration risk. The surest way to mitigate this risk is through diversification of the pool of borrowers.
- **Risk-based pricing** – when lenders identify a risky borrower they tend to charge a higher interest rate on the borrower's loan since they are more likely to default. The estimation of the interest rate is determined using the purpose of the loan, credit rating of the borrower and loan to value ratio of the loan facility.
- **Tightening** – lenders can also reduce credit risk by limiting the amount of loan extended to particular individual borrowers or in some cases all
- **Deposit insurance** – in order to protect depositors, government establish deposit insurance to guarantee bank deposits in the event of insolvency which boosts depositors confidence to hold their savings in banks instead of in cash.

- **Credit insurance /derivatives** – lenders and bondholders in order to minimise the loss that may arise from credit risk, hedge their credit risk by purchasing credit insurance. It allows the lenders to transfer the risk to the insurance company in exchange for payment of premium. The most available credit derivative is the credit default swap (CDS).

1.14. CREDIT RISK MEASUREMENT

In evaluating risk, banks should assess the likely downside scenarios and their possible impact on the borrower and their debt servicing capacity (Suresh and Paul, 2018). Bank's ability to achieve a significant milestone in managing credit risk depends on its ability to clearly, measure credit risk. According to Suresh and Paul (2018, P.254), the simple means of estimating credit risk is to assess the impact of non-performing assets (NPA) write-offs on the bank's profit. The estimation is made by dividing the profit before tax (PBT) by the NPAs. The PBT is critical here because losses written-off typically enjoy tax shields. The authors added that another method of presenting this concept is to work from the net income and NPAs as a proportion of average total assets of the bank. The below are the formula for measuring credit risk.

i. $\frac{PBT/TA}{NPA/TA}$

ii. $\frac{PAT/[1-t]_{/TA}}{NPA_{/TA}}$ or simply as

iii. $\frac{PBT}{NPA}$

The resultant proportion is often referred to as margin of safety because it is an indication of eroded assets after write-off.

Financial institutions have traditionally attempted to minimise the occurrence of credit risk primarily through a loan-by-loan analysis. The basis for a credit model is to determine the risk and earnings on each credit exposure. However, bank professionals realised that it is not sufficient to estimate earnings and risk based on qualitative groupings. A more analytical framework evolved, which began in the early 1960s when the first credit scoring models were

built to assist credit decisions for consumer loans. The models enabled lending institutions' classified debtors/counterparties on default potential only on an ordinal ranking basis. By the mid-1980s mainly, with the introduction of Risk-Adjusted Return on Capital (RAROC) as a performance measure, many banking institutions started calibrating each credit to a particular past due (PD) to estimate expected loss (EL) and ultimately economic capital.

There are many advanced credit measurement tools, but for this study, the discussion will base on only commercial credit risk measurement tools. According to Baixauli and Alvarez (2009)[21], the main variables that affect the credit risk of financial assets are the probability of default (PD), the loss given default (LGD), and the Exposure at default (EAD).

1.14.1. Expected Loss (EL)

Two types of loses will probably affect any borrower namely expected loss (EL), and unexpected loss (UL). Since expected loss is something we envisage, we can make a budget allocation for it and hold provisions to offset its adverse effects on the bank's balance sheet. EL could arise from the risks in the industry in which the borrower operates, the business risk associated with the borrower firm, its payments history, and future perspective to generate cash flows. Unexpected losses are usually unpredictable. Because of that, the surest way out is for the banks to cushion themselves by holding adequate capital. Banks can make use of the structure of the borrowers' transactions, collateral and guarantees to mitigate identified and inherent risks, but none of these measures can substitute for the comprehensive assessment of borrowers' repayment capacity or compensate for inadequate information or monitoring. Any action of credit enforcement such as recalling the loan made or institution foreclosure proceedings, including legal actions may only serve to erode the already small profit margins on the transaction. Although credit losses are usually dependent on time and economic conditions, it is theoretically possible to arrive at a statistically measured long-run average loss level. EL is therefore perceived to base on three parameters:

- The likelihood that will take place over a specified time horizon (probability of default or PD)

- The amount owed by the counterparty at the moment of default (exposure at default or EAD)

- The portion of the exposure and net of any recoveries, which the bank will lose following a default event (loss given default or LGD)

Since the general specification of PD is on a one-year basis, the product of the above three factors is the one year EL

$$EL = PD \times LGD \times EAD$$

We can aggregate EL at the level of individual loans or the entire credit portfolio. It is also both customer and facility-specific since two different loans to the same customer can have different ELs due to differences in EAD or LGD. It is important to note that EL by itself does not constitute risk if losses turn out as expected; they represent the anticipated cost of being in business. In any case, the bank factors their impact in loan pricing and provision. Credit risk emerging from adverse variations in the actual loss levels, give rise to the UL. Statistically, UL is merely the standard deviation of EL.

1.14.2. The probability of Default (PD) models

The probability of default is the estimation of the likelihood of the borrower defaulting on its obligation within a given horizon (Baixauli and Alvarez, 2009). We apply the PD model to a group of borrowers with similar characteristics, and it can predict the number of borrowers that are likely to default over a specific period (Duffie and Singleton, 2003)[22]. The calculation of PD is for each customer who has a loan in case of wholesale banking or for a portfolio of customers with similar characteristics in the case of retail banking. The techniques for calculating PD are in two categories: the empirical model and market-based model.

Empirical model: these models use historical default rates associated with each score to identify the characteristics of defaulting counterparties. Usually, such models use discriminant analysis

like Z-Scores, but recently logit or probit regressions have gained prominence to define the score 'S.'

Market-based models: these models, which are also known as structural or reduced-form models use counterparty market data such as bond or credit default swap (CDS) spread, and volatility of equity market value to infer the likelihood of default. Below are the commonly used steps to arrive at the probability of default.

- Analyse the credit risk aspects of the counterparty portfolio
- Map the counterparty to an internal risk grade which has an associated probability of default
- Determine the facility-specific probability of Default.

After the estimation of the PD, the related credit spread and valuation of the loan is the next step. Sophisticated banks use these models for active portfolio-level credit management particularly, for large corporate loans by identifying risk concentrations and opportunities for diversification through debt instruments and credit derivatives.

PD is computed using the formula:

$$\text{PD} = \frac{EL}{LGD \times EAD}$$

Where: EL = Expected Loss

LGD = Loss Given Default

EAD = Exposure at Default

1.14.3. Loss Given Default (LGD) Models

These models attempt to predict the amount of loss in credit in the event of default. The prediction depends on the characteristics of the facility e.g. collateral covenants (Duffie & Singleton, 2003). LGD in the view of Baixauli and Alvarez (2009) defined LGD, as the loss incurred in the event of default and it is equal to one minus the recovery rate at default. The difference between the value received at default resolution from bankruptcy, distressed exchange, outright cure, principal outstanding, and accrued interest due at resolution is the expected Loss Given Default. Loss given assessments are assigned to an individual loan, bond and preferred stock issues. According to Baixauli and Alvarez (2009),

$$\mathbf{LGD} = \mathbf{1} - \boldsymbol{R_i}$$

Where R_i = the value received at default resolution or the recovery rate of default instrument.

Consequently, the expected LGD rate is estimated as follows:

$$\frac{\text{Expected LGD}}{\textit{Expected Amount of Principal and interest due at resolution}}$$

1.14.4. Exposure at Default (EAD) Model

According to Duffie and Singleton (2003), the model is based on the characteristics and purpose of the facility and behaviour of the borrower. EAD, as explained by Baixauli and Alvarez (2009), is the total value that a bank is exposed to at the time of default or the nominal value of the borrower's debt. Every underlying exposure that a bank has is an EAD value, which is inherent within the bank's internal system. Lending institutions will often use their risk management defaults models to calculate their EAD

Mathematically, $\boldsymbol{EAD} = \frac{\boldsymbol{EL}}{\boldsymbol{PD} \times \boldsymbol{LGD}}$

In actual sense, EL is not part of the risk but is perceived as a cost. The actual risk is the unexpected loss (UL). Unexpected loss thus expresses the scale of the loss in more extreme

circumstances that is in situations where the development is not as expected (Lawer F. Tetteh, 2012)[23].

1.15. CREDIT RISK MANAGEMENT

The primary motive of granting loans by banks is to make a profit. In the process, they assume and accept risks. In evaluating credit risk, banks should assess the likely downside scenarios and their possible effect on the borrowers and their capacity to service debt. There are possibly two types of losses associated with any borrower type: expected and unexpected losses (Suresh and Paul, 2018 P.249). Expected loss can be budgeted for, and provisions held to offset their adverse effect on the bank's profitability. It could arise from the risks in the industry in which the borrower operates, the business risk associated with the borrower firm, its record of accomplishment of repayments and potential to generate cash flows. Unexpected loss is unpredictable, and therefore must be a form of a cushion by holding adequate capital.

The business dictionary defines risk management as the identification, analysis, assessment, control, and avoidance, minimisation, or elimination of unacceptable risks. In an attempt to manage risk, an organisation may use risk assumption, risk avoidance, risk retention, risk transfer or any other strategy or combination of strategies in proper management of future events. Kalapodas, and Thompson (2006)[29] defined credit risk management as reducing, or eradicating and managing risks to avoid inevitable catastrophes such as financial losses in organisations.

Risk management according to the economic times of India is the practice of identifying potential risks in advance, analysing them and taking precautionary steps to reduce the risk (www.economictimes.indiatimes.com). What this implies is that when an entity makes an investment decision, it exposes itself to some financial risks. The value of these risks depends on the types of financial instrument. This financial risk might be in the form of high inflation, volatility in the capital market, recession, and bankruptcy. So in order to minimise and control the exposure of investment to such risks, fund managers and investors must practice risk management. Not giving the needed importance to risk management while making investment

decisions, might cause disaster on investment in times of financial havoc in an economy. Different levels of risk come attached to different categories of assets classes.

The cost of holding risk matters to every organisation especially, the banking sector because in taking a financial decision, be it on capital structure, dividends, investment, revolves around the cost of holding risk. Banks, therefore, place a significant emphasis on this since risk management constitutes part of its core business. Banks primarily provide liquidity on demand to depositors through the current account and extend credit as well as liquidity to borrowers through the lines of credit (Kashyap, Rajan and Stein, 1999)[30]. Due to this fundamental responsibility, the concern of banks has always been with both solvency and liquidity.

Usually, banks hold capital as a mitigation measure against insolvency, and they hold liquid assets to guard against unexpected withdrawals by depositors (Saidenberg and Straham, 1999)[31]. It has made banks to dynamically evaluate and take risks on a daily basis as part of their core business processes. In order to measure, and manage risks, banks must have effective ways to determine the appropriate amount of capital that can absorb unexpected losses arising from their market, credit and operational risks exposures.

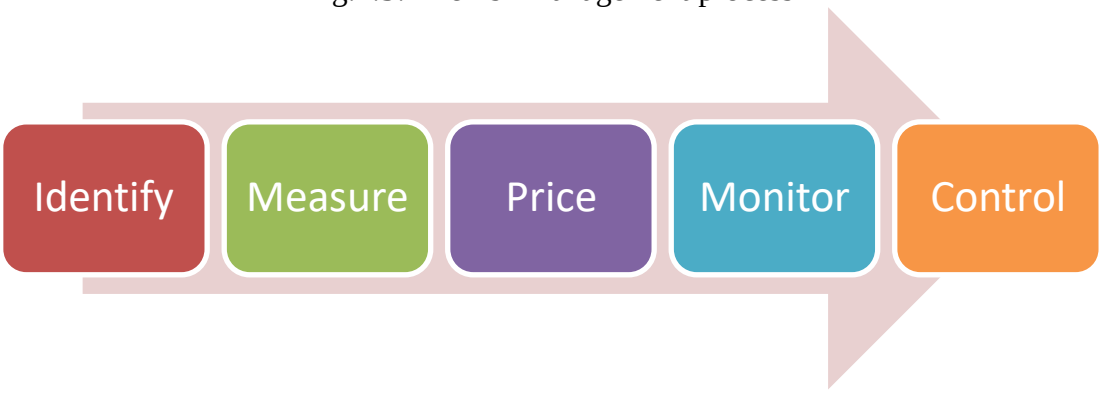
Even though banks face various forms of risk, market and credit risks are always at the centre of their core business. Managers are therefore required to identify, assess, monitor and manage these risks in a comprehensive and sophisticated way. Banks, therefore, are becoming much more aware of the need to measure and manage the credit risk of the loans they have initiated not only on a portfolio basis. That is because only the aggregate credit exposure is a relevant factor for the future solvency of banks. Banks risk management in recent times has come under increasing scrutiny in both academia and practice due to its increasing importance to the sustainability of the banking industry.

1.15.1. The Credit Risk Management Process

An essential requirement for effective credit management is the ability to cleverly, and efficiently manage customer credit lines. In order for banks to minimise exposure to bad debt, over-reserving and bankruptcies, they must have greater insight into customer's financial

strength, credit score history and changing payment patterns. We must critically examine the customer's ability to penetrate new markets and the ability to quickly and easily make well-informed credit decisions, and set appropriate lines of credit. It merely means Credit management starts with the sale and does not stop until the full and final payment is received (Haron et al., 2012)[32]. The process of credit risk management according to Sinkey (2002)[33] involves the usage of these five verbs; identity, measure, price, monitor and control. The process involved in risk management is as illustrated in fig.1.7 below:

Fig.1.5: The risk management process



Source: Researchers illustration

The first step in risk management is the identification stage. Every activity including lending is fraught with one or more risks. Identifying those risks, its probability of occurrence and the consequences is risk identification. The identification and definition of potential risk usually begin right from the initiation of the credit facility. In essence, risk identification consists of identifying various risks associated with the transaction and examining the impact on the portfolio and capital requirements. The credit/loan and risk officers play a crucial role at this stage of the risk management process. The second stage has to do with measurement of the identified risk to ascertain the severity of loss that will arise should the loan goes bad. It is the act of determining the extent of loss regarding financial and non-financial yardstick. Though it is not an easy task, it can still be done based on probability analysis and experience. It may be an approximation but is still a valuable tool for risk management. It is therefore essential that the assumptions made in measuring the risk are consistent and practical. Then the third stage where the pricing of the measured risk takes place to know the extent of loss that may arise. That is the extent of the risk, the scope of loss regarding material and money. During pricing of risk, the banks have to maintain capital based on risk weight as per regulatory requirements. This required

capital will cost the bank. The next to factor into the pricing of risk is the probability of loss associated with risks. It means that the pricing of risk should take into consideration operating expenses, loss probabilities and capital cost. The fourth stage of the risk management process is to monitor to know its state and direction. If the direction is moving undesirably, then the implementation of the control measures is put in place which according to Afriyie & Akotey, (2012 p.3)[34], Gestel & Baesens, (2008, p.43)[35], involves four control alternatives: risk avoidance, risk reduction, risk acceptance and risk transfer. Risk avoidance is a simple way of risk treatment where we avoid risky investments and instead invest funds in less risky transactions. Avoidance does not necessarily mean avoiding the risk completely but rather minimising the impact by investing in products that are not too risky. Here the cost of control measures should not be more than the potential loss that can occur from the risk. Risk reduction comes to mind when prevention of the risk is impossible. It includes strategies to reduce the possibility of risk as well as lowering the potential loss (S. Arunajatesan 2015, p.5)[36]. In order to reduce the impact of risk of financial loss many finance managers hedge the risk through appropriate derivative instruments. Management of credit lending institutions reduces potential loss by accepting collateral as a cushion for the shock. Risk acceptance or retention involves retaining the risk with oneself and dealing with it. Taken into consideration the level of risk, its probability and severity, a conscious effort is made to create a fund and bear the losses. It again refers to a situation where the lender decides fully to accept the risk when it is clear that, the transaction is of low risk and is accommodative. Risk transfer refers to a situation where the lender finds the risk to be too much of a burden to shoulder and decides to transfer the risk to other institutions such as insurance and banks. Another vital risk transfer method is outsourcing the risky job. After deciding on which of the above risk control options to adopt, the next stage is the implementation of the risk management strategy. The implementation strategy should involve all the available resources thus - human resource, statistical models, and IT infrastructure judicious in order to measure the underlying risk of current and future investments. The statistical models and the IT infrastructure should be able to benchmark for the limit of exposure to risk products, whether acceptance of collateral for a particular loan facility should be mandatory or not, or whether to buy financial protection to secure the investment (Gestel and Baesens, 2008, p.4). The implementation of a risk management strategy should have the backing of a well-documented credit policy and supervised by senior management. This cycle must be a continuous cycle for every lending decision.

1.15.2. Warning Signals of Loan Default

When a customer is servicing a loan account, and any of the following situations arise, it must serve as a warning sign to the banker to probe further and put the account on a watch.

- Cheques deposited through clearing and withdrawal of round and large amounts by some few firms without any tangible reason. What it means is that the company may be fictitious or consist of same partners and the customer may be resorting to "ballooning" tactics.

- Bills tendered in bills purchase account- if such bills are for round amounts and drawn almost regularly on same parties, then the indication would be that the customer is resorting to "Kite Flying" to supplement his cash requirement, which he is unable to obtain in the ordinary course.

- Frequent stop payment of cheques issued- the indication would be that the customer is cash-strapped and struggling with a liquidity problem.

- Constant enquiring with the ledger department to know whether account balance is sufficient to meet the cheques drawn in cash as against the amount deposited at the last moment, which may indicate that the cheques have been issued to accommodators who allow the borrower to draw accommodation bills on them

- Minimal fluctuations in debit balances of the primary account which lack credible and genuine turnover.

- Delay in the retirement of bills even for materials

- Asking for frequent accommodation from the bank by way of excess in limits, which is not regularised in time

- Default in payment of monthly interests and loan installments

1.15.3. Best Practices and Techniques of Credit Risk Management

Credit risk management has a primary goal to maximise a bank's risk-adjusted rate of return by maintaining credit risk and exposure within acceptable parameters. The part of a complete approach to risk management is essential to the long-term success of any banking institution. Banks across the globe increasingly face with credit risk in different financial instruments other than loans, which include trade financing, foreign exchange transaction, interbank transactions, financial futures, and in the extension of commitments and guarantees. Let us look at credit risk management in a two-stage approach: Pre-disbursement and post-disbursement practices.

1.15.4. Pre-disbursement Credit Risk Management Practices

Bankers undertake these practices during the initial stage of the loan application. The first of the practice is the KYC (know your customer) modalities. This practice is essential because it serves as the foundation for all the succeeding steps in the credit-risk management process. To be successful at knowing the customer very well, one must function on relevant, accurate and judicious information. The information put together and the relationship built with the customer is significant in positioning oneself as a cherished financial consultant and provider of financial product and services. Establishing a good rapport with the potential loan customer can bring a long stream of equity to the banking institution. When the initial call is poorly planned and executed, it could limit the future business opportunity. One of the very best ways to knowing the customer's needs as well as establishing yourself as a valued financial consultant is by meeting face-to-face to discuss the customers' past and future. As a financial consultant, before meeting the customer, find out as much information as possible about the individual/company and its industry. Eliciting the needed information is necessary while keeping in mind that the ability to listen effectively and responding to a customer's needs are the most important technique to exhibit. There is the need to listen from verbal cues and watch the non-verbal cues in order to establish customer's needs. The first impression counts so during the first interaction, establishing credibility as a professional, the person must be a very knowledgeable and friendly businessperson. The line of questions should base on the individual's/company's product and services, customer base, suppliers, facilities, ownership, management, and history. Professional interaction will let the customer to develop an initial opinion about the behaviour of management

and the ability to carry out the company' business strategy. The next thing to investigate should include competition, market share, and the probable impact of economic conditions on the business.

The next risk management practice before granting of the credit facility is the analysis of non-financial risk. The risk is not inherent in only the financials of a loan application but also the non-financials. Information gathered in understanding the customer's business through the analysis of non-financial risk is critical in order to have a reputation as a financial consultant to the customer. The concept of risk management applies to either a single loan as well as to an entire loan portfolio. A loan is a risk at the micro level, and at the macro level, a portfolio of loans is level is a risk. Risk management is not static but a continuous process of identifying risks that are at times subject to quick and volatile changes. Risk identification may result in opportunities for portfolio growth or may aid in avoiding unacceptable exposures for the institution. Each item of the balance sheet and income statement is full of risk and officers must learn how to evaluate it. The risks are inherent in three broad areas: industry, business, and management. The overall credit underwriting process is a combined analysis of risks associated with the industry, business and management of a company. In the analysis, it is a must indicate to the senior credit policy management committee whether:

- There is enough capital available on the institution's balance sheet to support the risk the bank is yet to take

- The compensation is adequate for the institution

- There are adequate controls in place at the institution to assure the proper tracking of the risk and to minimise the element of surprise. Evaluating industry, business, and management risks enable the loan officer to ask questions of customers and prospects to be able to identify fully, quantify and if possible mitigate critical risks. If the loan meets underwriting and credit approval criteria, the risk analysis will provide the needed pieces of information, which will help structure the loan in a way that will ensure smooth repayment of the loan.

The industry, business and management analysis of risks precede or sometimes done concurrently with financial analysis of a company. When the bank wants to obtain an essential exposure to a particular industry, its industry experts from both the lending and credit analyst teams provides it with an intimate understanding of the industry in order to:

- Understand, identify, evaluate, and mitigate the risk in of all forms.
- Provide expert advice in the event of a loan workout situation with a customer
- Provide marketing efficiency strategies for acquiring creditworthy and profitable clients within a particular industry.

Since one cannot analyse a company in an abstract, it is a requirement that, the analysis must be within the broader context of its industry and the world economy, and also, an also understanding the economic and industry factors that influence a company's financial stability and financing requirements before evaluating the numbers. Business, industry, and management risks are inherently a vital part of the overall credit underwriting process. Every company's financial statements reflect the company's management decisions ass that company interacts with the outside world. Non-financial risks (industry, business, and management risks describe the world outside the company. The next management practice that we should not overlook is, understanding the numbers. There are a lot of benefits and risks associated with building a banking relationship with any entity or individual. Every lending institution should always know:

- The use of the loan request and how the repayment is going to be
- How to identify, categorise, and prioritise all the inherent risks in the customer's business at the time of the analysis, and the anticipated risk that may arise in the course of the relationship

To understand the numbers, the financial capability of the company as deduced from the information as well as the quality and sustainability of the financial performance should be the focus. Before commencing the financial analysis, the banker should also know why the

individual or company is borrowing. Knowledge of the changes in the customer's asset structure as it goes through its business cycle is critical to forecasting risk. The reason for borrowing again provides insight into the company's ability to repay. A total understanding of the historical and projected financial performance of the customers is vital to the analysis and mostly the credit risk management. Usually, the loan request is the most scrutinised part of a credit write-up when the credit officer is convinced with the loan request then the process of understanding the numbers can start. The process to understand the numbers involves:

- Analysing the reputation and competency of the company (or the auditor preparing the financial reports of your customer
- Reviewing the auditor's appointment letter, financing statements, management letter, and accounting fundamentals and generally accepted auditing principle (GAAP)
- Analyse the balance sheet together with relevant liquidity and leverage ratios
- Analysing the revenues and cost together with income statement ratio analysis
- Analysing the operating, investing and financing cash flows, and cash flow ratios
- Analysing financial efficiency cash flow drivers by calculating profitability ratios and turnover ratios
- Determining the practicality of the assumptions behind business fundamentals and swing factors
- Analysing the personal financial statements and tax returns in case of directly extending the credit facility to or requesting additional credit support from an individual
- Analysing the company's financial statements provides an overview of the company.

Structuring the deal is the next after understanding the numbers. The characteristics that influence a business's success include the nature of the industry, the impact of economic

conditions, the business strategy, the nature of the business, and the competencies of deficiencies of the management. As a credit officer, try to understand what the company does and how it operates and also examine how it fits into its industry and how the economic conditions affect it. Being equipped with such information provides the business strategy of the company and how easy or difficult to carry it out. The last is to evaluate the competency of the company's management to undertake the various activities identified as being critical to the company's success. After the business analysis, the next is to analyse the financial reports (historical and forecasted). Knowing profitability, cash flow, liquidity and leverage ratios are critical to the structuring of the loan facility. After completing all the above steps, then the application of the right structure becomes an easy procedure. Understanding the personal, financial, and business strategies of the borrowers will help reach the risk profile that is within the risk appetite of the banking institution.

The loan structure is essential because the customer needs to have a clear understanding of the limits within which it can operate in order to continue to enjoy the financial services of the bank. The structure of the deal accurately establishes the expectations of the customer concerning how the bank will behave during the loan term. The customer needs this assurance in order to run the affairs of the business efficiently. When the deal is appropriately structured which is agreeable to all parties, then it provides a mechanism for monitoring individual transactions within the relationship. The achievement of the monitoring process is in two ways:

- Having a loan covenant checklist that routinely tracks the customer's adherence to the covenant

- Ensure that an officer of the company on a regular basis report on the company's compliance with all of its outstanding agreements.

When the customer defaults on the covenant, the bank must quickly send a notice to the customer as failure to notify will render the bank's future enforcement of the covenant very difficult. Pricing the deal clearly by appropriately pricing the loan is a critical risk management technique. Pricing ensures that the bank achieves adequate compensation for the risk of the deal. The bank of Ghana usually releases a base rate, which enables the banks to price their loans by

adding their margins. However, this resulted in disparities in the interest rates from bank to bank due to the different overhead costs. The interest rate in the country has been the subject of debate among industry experts as some even opine that the high rates are a contributing factor to the high NPL rates in the country.

1.15.5. Post Disbursement Risk Management Practices

In today's competitive environment, in order to have a competitive advantage in the market, it is a must to monitor the risk profile of customers continuously and also looks for opportunities to develop and expand customer relationship. There are situations where loan repayments may be on time, but collateral deterioration, idle equipment, or unpaid taxes can lead to grave risk. It is therefore imperative for periodic audits and ratings to ensure that the client is one that will create long-term profitability for the bank. Asset quality is a significant success factor of a financial institution. Every bank is subject to scrutiny from BoG, banks supplement these functions with internal monitoring in the form of supervision and follow-up on loan clients. After the loan disbursement, it should not be forgotten and filed away till the loan falls due — the conditions upon which the loan was granted keeps on changing with time thereby affecting the borrower's financial position and the ability to repay. Fluctuations in the economy weaken some businesses and increase the credit needs of others too. It is therefore eminent for the credit officer to be sensitive to these changes and periodically review all the loans until they reach maturity.

There are several reasons for making follow-ups, but the most important are:

- To ensure proper utilisation of the funds
- To ensure that the customer complies with the terms and conditions of the sanctioned facility
- To monitor the project implementation to avoid time-lag and cost over-runs

- To assess the performance regarding production, sales, and profiles on an ongoing basis to ensure that the borrower is sticking to the original plan and has enough income surplus to service the outstanding debt

- To determine the possible impact of changes in the external environment on the performance of the company

- To be able to identify in advance the early warning signals and symptoms of sickness in the business for timely intervention for either recovery or rehabilitation

- To be able to track the financial position of the borrower

Supervision and follow-up of advances should focus on three broad areas: legal control, physical control, and financial control. Legal control involves proper execution of documents, keeping the documents in force, complying with various legal formalities such as registration of charges, the creation of a mortgage, and complying with BoG regulations and the bank's internal guidelines on a regular basis. Physical control also involves an inspection of the physical securities charged to the bank. That is inspection of books of accounts, and crosschecking with the physical securities, inspection of factory and warehouse sites to ascertain the activity levels and stock levels and verifying the nameplate of the bank near the hypothecated stocks. Financial control, on the other hand, involves assessing the performance of the company with the help of financial statements like balance sheets, and profit and loss accounts. Follow up to undertake a comprehensive review of account for not less than once a year, monitoring the utilisation of limits through quarterly information system (QIS) and monthly select operational data. The credit inspection and supervisions of the account could be onsite or offsite. The offsite supervision takes place at the officers' desk level whiles onsite inspection takes place at the borrower's premise.

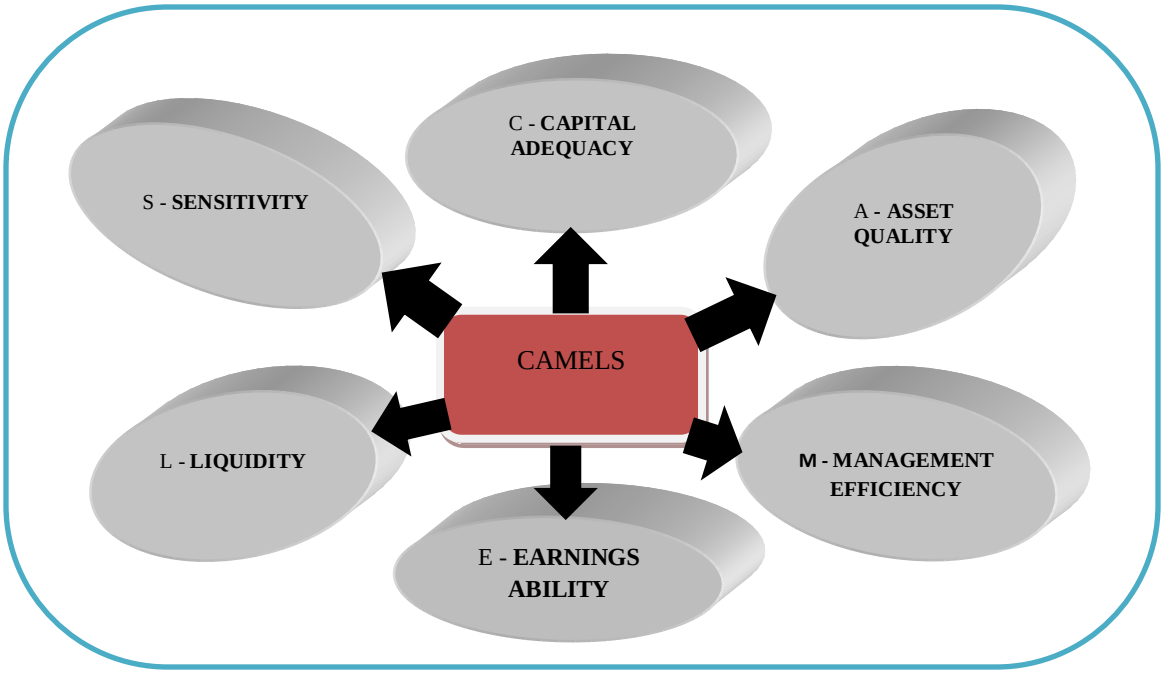
1.15.6. The CAMELS Model Approch of Risk Management

Regulators, investors and bank analysts periodically have to assess the financial condition of banks. The rating parameters depend on both financial and non-financial performance. One of

the popularly used assessments is the CAMELS rating model (Suresh and Paul, 2018, P.89). CAMELS' model as a risk management tool is a beneficial and efficient performance evaluation measure for an anticipated future and relative risk. The Federal Financial Institutions Examinations Council (FFIEC) of the United States of America initially adopted this Uniform Financial Institutions Rating System (UFIRS) CAMEL on November 13, 1979. The Federal Deposit Insurance Corporation (FDIC) revised the model to include a sixth measure (sensitivity) to the UFIRS in 1997 to classify a bank's overall condition (soundness). The Acronym CAMEL then became CAMELS. This new component (sensitivity) looks into how a bank responds to changes in interest rates, equity prices, commodity prices, and international rates. The CAMELS rating framework was subsequently adopted, and implemented outside the United States by various banking supervisory regulators.

The ratings are assigned based on ratio analysis of the financial statements together with an on-site examination by the supervisory regulator. The term CAMELS is an acronym, which is made up of the following components: Capital adequacy, Assets quality, Management Efficiency, Earnings ability, Liquidity (Asset –liability management), Sensitivity (sensitivity to market risk especially interest rate risk). The constituents of the CAMELS rating model is as illustrated in fig.1.8 below.

Fig.1.6: the Components of the CAMELS rating Model



Source: Researcher's illustration

1.15.6.1. Capital Adequacy

This component of the CAMELS model is a measurement that determines the solvency of a bank. Adequate capital reserve helps banks to expand, and increase the confidence of depositors and regulators. The measure also provides a cushion for potential loan losses and other unanticipated problems. Suresh and Paul (2018) illustrated the following subjective and objective components of Capital adequacy: Size of the bank, the volume of inferior quality assets, Bank's growth experience, plans and prospects, Quality of capital, Retained earnings, Access to capital markets, Non-ledger assets and values not shown on books (charge-offs with firm recovery values, real property at nominal values, and tax adjustment).

1.15.6.2. Asset Quality

This measure shows the magnitude of credit risk prevailing in the bank due to its composition and quality of loans, advances, investments and off-balance sheet activities. The subjective and objective component of this measure includes Volume of classification, Special-mention loans – ratios and trends, Levels, trend and comparison of non-accrual and renegotiation loans, Volume of concentrations, the volume of the character of insider transactions.

1.15.6.3. Management Quality

Another critical measure as it guarantees the growth and survival of a bank as it shows the ability of senior managers, the board of directors, to identify, measure, monitor and control risks associated with banking. This qualitative measure uses risk management policies and processes as indicators of sound management. The subjective and objective components of this parameter include technical competency, the leadership of middle and senior management, compliance with banking laws and regulations, adequacy and compliance with internal policies. The rest are tendencies towards self-dealing, the ability to plan and respond to changing circumstances, demonstrate the readiness to serve the legitimate credit needs of the community, adequacy of directors, existence and adequacy of qualified staff and programmes

1.15.6.4. Earnings

This measure indicates the bank's ability to create appropriate returns in order to be able to expand, retain competitiveness, and add to capital through retained earnings. This indicator does not only show the amount of and the trend in earnings, but it also analyses the robustness of expected earnings growth in future. High earnings quality reflects the firm's current operating performance and an indicator of future operating performance. The objectives and subjective components of this parameter include the return on Assets compared to peer group averages and bank's trends, material components and income and expenses compared to peers and bank's trends, adequacy of provisions for loan losses, quality of earnings, and the dividend payout ratio concerning the bank capital adequacy.

1.15.6.5. Liquidity

The measure of liquidity takes into account the adequacy of the bank's current and potential sources of liquidity including the strength of its funds' management practices. Liquidity also means a bank's available fund to meet its credit demands and cash flow requirements. Banks that have a larger volume of liquid assets are perceived safe since these banks can live up to the call of unexpected withdrawals. However, the adverse effect of keeping a larger volume of liquidity is that it reduces management's ability to commit credibly to an investment strategy that protects investors' interest. The objective and subjective components of this parameter includes the adequacy of liquidity sources compared to present and future needs, and the availability of assets that are readily convertible to cash without undue loss. The rest are access to money markets, level of diversification of funding sources (on and off-balance sheet), the degree of reliance on short-term volatile sources of funds, trend and stability of deposit, ability to securitise and sell specific pools of assets, the competence of Management to identify, measure, monitor and control liquidity position

1.15.6.6. Sensitivity

This recent sixth addition to the model parameters reflects the degree to which changes in commodity prices, exchange rates, interest rates, and equity prices can affect earnings and hence

the bank's capital (Suresh and Paul, 2018 p.89). The objective and subjective parameters of this component include:

- The sensitivity of the financial institution's economic value of its capital to changes in interest rates under various scenarios and stress environments or its net earnings
- The composition, volatility of any foreign exchange, or other trading positions, and volume taken by the financial institution
- Actual or potential volatility of capital or earnings because of any changes in market valuation of trading portfolios or financial instruments
- the ability of management to identify, measure, monitor and control interest rate risk as well as price the foreign exchange risk wherever applicable and material to an institution.

Globally, regulators who determine the supervision policies for individual banks use these ratings. In addition to the overall rating of the bank's financial condition, ratings are assigned on a scale of 1 to 5 for every component in addition to the overall rating of a bank's financial condition. The rating analysis and its interpretation are as explained in Table 1.6 below.

Table 1.6: ratings of the components of CAMELS model

RATING	RANGE	DESCRIPTION
1	1.0 – 1.4	**Strong:** Sound in every respect, no supervisory responses required.
2	1.6 – 2.4	**Satisfactory:** Fundamentally sound with modest correctable weakness
3	2.6 – 3.4	**Fair (watch category):** Combination of weakness if not redressed will become severe. Watch category- requires more than normal supervision

4	3.6 – 4.4	**Marginal (some risk of failure):** Immoderate weakness unless properly addressed could impair future viability of the bank. Needs close supervision
5	4.6– 5.0	**Unsatisfactory (high degree of failure evident):** High risk of failure in the near term which is put under constant supervision/cease and desist order

Source: Suresh and Paul (2018, P.90)

1.16. PROFITABILITY

According to Bessis (2005)[37], Profit refers to the surplus left from revenue after covering expenses. It means that the ability of any company to generate more revenue than its expenses makes it profitable. Profit is usually a measure in monetary terms whereas; profitability is the measure of the generated profit on an ongoing basis. Profitability, which is in ratios, shows a firm's overall efficiency and performance. There are two types of profitability ratios; a ratio that shows returns, and ratio that shows margins. The ratios that show returns measure the firm's ability to generate returns for shareholders efficiently. Ratios that show margins, on the other hand, represent the firm's ability to convert sales into profit at all stages of measurement. For any stakeholder to access the performance of the firm, the first measure will be the profitability. Management of companies and for that matter banks are critically interested in its profits. Profitable companies can increase the share value and can pay dividends to shareholders. Profitable banks attract the attention of investors especially the listed companies. In the case of banks, even the depositors look for profitable banks before deciding on lodging their deposits with them.

Performance evaluation involves the analysis of the level of financial and economic performance using both qualitative and quantitative data from the firm. The information from the financial statements namely balance sheet, income statements, and the cash flow statements are the source of data for the computation of the financial ratios. In order to ascertain whether the performance

is within industry standards, to comparing the ratios with other firms in the same industry is appropriate. It is also important to compare current and previous performances of the same organisation for better evaluation and monitoring of the trends in the firm's financial position.

1.15.1. Profitability Indicators

The ultimate measure of the standard of performance in any market-oriented economy is how much net income remains for the owner of the business organisation after all expenses (except shareholders dividend) are charged against the generated revenue. In appraising any new loan application, most loan officers will look at both pretax net income and after-tax net income to determine the financial success or failure of the prospective borrower relative to other firms within the same industry. Profitability reflects the financial result of business operations. There are many profitability indicators of measuring financial success of a firm, but generally, there are two types of profitability ratios namely: the rate of return ratios, and profit margin ratios.

1.15.2. Rate of Return Ratios

These ratios reflect the relationship between profit and investment. The most critical measures of rate of return include return on assets, earning power, return on capital employed, and return on equity.

Return on Assets (ROA)

The mathematical definition of return on assets is

$$ROA = \frac{Profit\ after\ tax}{Average\ total\ assets}$$

Although used widely, ROA is an odd measure because its numerator measures the return to shareholders (both equity and preference) whereas its denominator represents the contribution of all investors (shareholders as well as lenders).

Earning Power

Mathematically; $\text{Earning power} = \frac{Profit\ Before\ Interest\ and\ Tax}{Average\ total\ Assets}$

It is a measure of business performance, which is not affected by interest charges and tax burden. It excludes the effect of capital structure and tax factor and centres on operating performance. It makes earning power suited for inter-firm comparison. Again, the measure is internally consistent. The numerator represents a measure of pre-tax earnings from all sources of finance and the denominator-representing total financing.

Return on Capital Employed (ROCE)

It is defined mathematically as:

$$ROCE = \frac{Profit\ before\ interest\ and\ tax(1 - tax\ rate)}{Average\ total\ assets}$$

The term 'PBIT (1-tax rate)' is the net operating profit after tax (NOPAT). ROCE is the post-tax version of earning power. Also referred to as return on invested capital (ROIC), ROCE ratio takes into consideration the effect of taxation and not the capital structure and that makes it internally consistent. The advantage of ROCE is that it is defined such that it is comparable to the post-tax weighted-average cost of capital of the firm.

Return on Equity (ROE)

Mathematically:

$$ROE = \frac{Equity\ Earnings}{Average\ Equity}$$

It is a measure, which is of great interest to equity shareholders. The numerator of this measure is equal to profit after tax minus preference dividends. The denominator, on the other hand, is made up of all contributions made by equity shareholders (i.e. Paid-up capital + reserves and surplus).

The ROE, or return on net worth, measures the profitability of equity funds invested in the firm. Because shareholders' wealth maximisation is the primary objective of every firm, ROE is the essential measure of performance in an accounting sense (Prasanna Chandra, 2011 P.82)[38]. Several factors influence ROE: earning power, debt-equity ratio, the average cost of debt funds, and tax rate. Generally, ROE and ROA are the most used measures of profitability. Since they are accounting rates of return, the proper names for these measures may be; return on book equity and return on book assets respectively.

1.15.3. Profit Margin Ratios

These ratios indicate the relationship between profit and sales. Since the measurement of profit can be at different stages, there are several measures of profit margins. The most popular profit margin ratios include gross profit margin ratio, operating profit margin ratio, and net profit margin ratio.

Gross Profit Margin Ratio

Mathematically, the gross profit margin ratio is:

$$\frac{Gross\ profit}{Net\ sales}$$

Gross profit of any business entity is the difference between net sales and cost of goods sold. Gross profit margin ratio indicates the profit after meeting manufacturing costs. The ratio measures the efficiency of production as well as pricing. In order to analyse the factors underlying the variation in gross profit margin effectively, detailed studies of the proportion of various elements of cost (i.e. labour, materials and manufacturing overheads) to sales are necessary.

Operating Profit Margin Ratio

The operating profit margin ratio is defined as:

$$\frac{Operating\ profit}{Net\ sales}$$

These ratios indicate the margin left after meeting manufacturing expenses, selling, general and administration expenses and depreciation charges. It shows the operating efficiency of the firm.

Net Profit Margin Ratio

The mathematical definition of net profit margin ratio is:

$$\frac{Net\ profit}{Net\ sales}$$

This ratio shows the earning left for both equity and preference shareholders as a percentage of net sales. Net profit margin ratio measures the overall efficiency of production, pricing, administration, selling, financing, and management of tax. Jointly the gross and net profit margin ratios provide a meaningful understanding of the cost, and profit structure of the firm, which enables the analyst to identify the sources of business efficiency and inefficiency.

1.15.4. Profitability Management

Profitability management is more of a total management process rather than just an accounting or analysis procedure. In contrast to asset and liability management, it places primary emphasis on the profit and loss account and secondary emphasis on the balance sheet. With profitability management, we do not just report profitability, but it is planned, measured, and interpreted. The planning stage ensures that efforts are directed toward the accomplishment of corporate goals. Measurement on the other hand checks and adjusts progress against the plan by matching revenue received with related expenses whiles interpretation develop an accurate picture of people and businesses thereby serving as a basis for the next planning cycle. Profitability management involves the monitoring of three different types of profitability statistics namely; organisation, product, and account making it a three-dimensional as well as a three-phase process.

Organisation profitability is the most familiar type since all banks have some system for reporting the performance of their major organisational units. However, an effective profitability measurement system will capture the performance of services and accounts. Measures of organisational profitability are needed because they help top management allocate resources, identify a problem, exercise cost control, and track the performance of the senior management. Measures of product and account profitability are also required because they provide the basis for identifying problems, collecting fees, and pricing. They again help evaluate the performance of service managers and account managers.

Meaningful computation of organisational profitability requires extensive transfer charging, particularly processing costs and corporate overheads. The assembly of accurate product and account profitability requires cutting across organisational units to collect all the appropriate revenue and expense for a particular product or account. Many banks are now realising the need to the full integration process of profitability management and are beginning to accord top priority to the refinement of the profitability management process by devoting substantial managerial and financial resources to this task. Industry experts still regard profitability reporting as a tool for analysis rather than a force that drives the entire bank. That makes the banks have a weak or missing link in the process, which can lead to severe consequences.

The natural tendency of banks is to devote most of their efforts to the measurement of profitability at the expense of the planning and interpretation phases. The decision that influences profitability are made before events occur and careful planning is the only way to have a better than even chance of being right. Intelligent interpretation is equally important because total profit figures do not differentiate between businesses requiring a different degree of risk or asset intensity (D. Muraleedharan, 2013 p.184)[39]. Most banks do not have quantitative targets for organisations, products, and accounts built into their profitability management process. In case the targets exist, they usually do not support the underlying financial objectives of the bank. In many banks, the summative target returns on earnings assets for instance for the whole organisation units does not equal the corporate objective. It may lead to waste or duplication of efforts, and operating costs tend to spring without any accompanying benefits. In a situation where reporting principles are not established and communicated by top management, or when

the application of the principles are not consistent, profitability reporting system will most likely confuse than help.

Most banks rely more on organisation profitability as a basis for decision-making and rely slightly on the other profitability measurements. Such neglect can result in a severe market and operational consequences. For instance, the bank's market share may drop due to inadequate attention is given to marketing and pricing of profitable product lines or because of not retaining profitable customer groups. There can also be a situation where inappropriate decisions lead to adding or dropping a product line or customer group just because organisational profitability does not cover the relevant income and expense. There is always a danger of misrepresenting the reported results if banks do not have a clearly defined profitability management process with the objectives of each component not thought through clearly. To prevent problems from arising, and to maintain overall financial health in these difficult economic times, banks must put in place a sound and firmly controlled the profitability management process. It worthy to note that no single system is suitable for all banks, therefore, each bank must match its own in line with its objectives and economic environment it operates in.

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CHAPTER TWO

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RESEARCH DESIGN AND METHODOLOGY

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2.1. RESEARCH DESIGN AND METHODOLOGY

A research design forms the blueprint for fulfilling research and answering questions. It includes an outline of what the researcher will do from writing research questions and their operational implication to the final data analysis. According to Green et al. (2008)[1] as cited in Deepak Chawla and Neena Sondhi (2016, Pp. 52)[2], "research design is the specification of methods and procedures for acquiring the information needed". A research design is the overall operational framework of the project that stipulates the information we need to collect, the procedure and source of information. If the design is good, it will ensure that the information obtained is relevant to the research questions and the collection procedure was objective and economical.

The design used by the researcher employed both descriptive and explanatory or causal research designs. The primary purpose of descriptive research is to describe the characteristics of objects, people, groups, organisations or environment. In order words, descriptive research tries to "paint" a picture of a given situation by addressing questions such as what, who, where when, and how. Causal or explanatory research, on the other hand, seeks to identify cause-effect relationships that are testable (Zikmund et al. 2013, P. 59)[3].

The primary data collected through a survey was analysed using descriptive research approach whereas the analysis of the secondary obtained from the financial statements of the sampled savings and Loans companies utilised the explanatory or causal research approach. The researcher used Descriptive because according to Trochin (1999)[4], a survey method is useful for non-experimental and descriptive research methods. Trochin further indicated that the survey method becomes useful when we cannot observe the data on a phenomenon we are about to collect directly. Robson (2005)[5] on the other hand explained that survey research comprises of a cross-sectional design with which data collected are predominantly through a questionnaire, or by structured interview. Data collection through survey can be more than a single case and at a particular point in time to collect a body of quantitative or quantifiable data in connection with

two or more variables, for examination and detection of the patterns of association among the variables. This research work will follow the survey pattern described above.

2.2. REVIEW OF LITERATURE

Savings and Loans companies as per the categorisation of financial institutions in Ghana are Non-Bank Financial institutions, which play a critical role in the banking industry of the Ghanaian economy. Since both the commercial banks and the savings and loans companies are all banking institutions that indulge in credit activities, the literature review will cover both commercial banks and all other non-bank financial institutions.

Many researchers in trying to unearth the reasons behind bank problems have carried out investigations, and several risk factors have since been identified (eg.Chijoriga, 1997[6], Brown Bridge, and Harvey, 1998[7]). Ineffectiveness in credit risk management emerged to be predominantly part of the principal reasons behind the difficulties banks are facing. The loans constitute a significant proportion of credit as they contribute between 10 and 15 times the total equity of a bank (Kitwa, 1996)[8]. It makes the banking business face with potential difficulties, especially where there is a slight deterioration in the loan quality. Chijoriga, 1997 opines that the magnitude of loss caused by credit risk as compared to another risk will be enough to collapse a bank.

The relationship between credit-risk and profitability in the banking sector has been an emerging concern in both developed and developing countries. Among some of the recent studies on credit-risk, management and profitability are as reviewed below:

Makkar and Hardeep (2018)[9] studied the factors influencing the profitability of Indian commercial banks. ROA was the profitability measure. The internal determinant variables included in the study were liquid assets to total asset, current ratio, capital adequacy ratio, non-performing assets to total assets, profit per employee, business per employee, and bank size. The findings showed that liquidity, solvency, efficiency and size were the key factors significantly influencing the profitability of Indian commercial banks.

Adwaita Maiti and Sebak Kumar Jana (2017)[12] in their research on determinants of profitability of banks in India used both ROA and ROE as profitability measures. Business per employee (BPE), profit per employee (PPE), net interest margin (NIM), or spread ratio, capital to risk-weighted assets ratio (CRAR), non-performing assets (NPA), advance to deposit ratio (ADR), operating expenses ratio (OER) and non-interest income ratio (NIIR) were the independent variables. They found out from their regression analysis that four most commonly profitability influenced factors were PPE, NIM, NPA and NIIR.

Michael Owusu A. et al., (2017)[13] used a multivariate regression analysis to predict the relationship between credit risk management and Ghanaian commercial banks' profitability. ROE was the dependent variable whereas NPLR and CAR were the proxies of the independent variables. CAR contributed positively to banks profitability while NPLR showed negative effects. In comparison, NPLR had more significant effect whiles CAR has a small and insignificant effect on ROE.

Mendoza & Rivera (2017)[14] investigated the effect of credit risk and capital adequacy on the profitability of rural banks in the Philippines. The measures for Profitability were ROA and ROE. Credit risk measures were loan loss provision to total loans (LLP/TL) and CAR. The regression analysis indicated that credit risk has a negative and statistically insignificant relationship with both the profitability indicators (ROA, ROE). Even though banks with higher CAR are supposed to be financially stable and resilient, the relationship between CAR and profitability of rural banks in the Philippines were statistically insignificant. It makes their finding strange to other research findings, but they attributed it to systemic risk that probably not captured in the study. They also attributed it to the financial crisis, which made profitability influenced more by economic factors rather than bank-specific factors.

Ahmet Karakuza (2017)[15] examined bank-specific determinants of profitability in Turkish banks. ROA was the measure used as a proxy for profitability. The bank-specific variables that served as the independent variables include equity to asset ratio, total deposit to total assets, total loans and receivables to total assets, net interest income total assets, provision for loan loss to total assets, liquidity assets to total assets and consumer loans to total assets. The results indicated that the ratio of net interest income to operating income influenced ROA positively.

Non-interest income to total assets affected the profitability of Turkish banks positively and significant. Consumer loans to total loans negatively and significantly affect the profitability of banks in Turkey.

Yusheng Kong et al. (2017)[16] conducted a study to ascertain the bearing of credit risk management on commercial banks financial performance in Ghana. ROE was an indicator for performance whiles NPLR and CAR were proxies for credit risk management. Data from four commercial banks were analysed using regression analysis. NPLR showed a negative and significant relationship effect on ROE whereas CAR showed a positive and insignificant relationship with ROE.

Juliana Stanley Isanzu (2017)[17] empirically examined the impact of credit risk on the financial performance of Chinese banks for 7 Years. She employed non-performing loans, capital adequacy ratio, impaired loan reserve and loan impairment charges as a measure of credit risk. For financial performance, ROA was the proxy. The results of the regression analysis conducted showed that NPL related negatively and significant to ROA. Capital adequacy ratio (CAR) had a positive and significant effect on ROA. The effect of impaired loan reserve to gross loan on return on assets was negative. The ratio of impairment charges also affected ROA positively.

Pritpal Singh, B. and Pradeep Gupta, K. (2017)[18] conducted an empirical analysis of the determinants of profitability of public sector banks in India. Net profit to total fund was the profitability measure. The independent variables employed were; profit before provision over total funds, investment to deposit ratio, credit to deposit ratio, cash to deposit ratio, other income to total income, interest income to total fund, and interest expended over interest earned. They found a significant effect of other income to total income, profit before provision to total fund, credit to deposit ratio, interest income to total fund and cash to deposit ratio on Indian public sector banks' profitability. Investments to deposit ratio and interest expended to interest earned have no significant effect on the profitability of Indian banks.

Yong Tan et al. (2017)[19] examined the impact of risk, competition and efficiency on profitability measured by ROA, ROE and NIM of Chinese banks. They found out from their analysis that the relationship between credit risk and profitability was negative and insignificant.

Liquidity risk however affected Chinese banks profitability positively and significantly. Capital risk related negative and significant to profitability. Bank size was found to relate to profitability positively and significant. Cost efficiency negatively and significantly influenced Chinese banks ROA but positively affected ROE and NIM. They again found out that Chinese banks with lower levels of competition have lower profitability compared to those with high levels of competition.

Subham and Subhas (2017)[20] investigated the determinants of profitability of private sector banks in India. To study the effect of bank-specific factors they grouped the private sector banks into new and old. The profitability ratios used were net interest income to total income, return on assets and return on equity. Bank specific characteristics used include liquidity, asset quality, financial soundness and management efficiency. The external factors also included inflation, interest rate, and political instability. The results indicated that all the four bank-specific variables related positively to profitability. Also, both GDP and Inflation were positive but insignificant on the profitability of new private sector banks. Inflation influenced old private sector banks' profitability negatively but significant. Post-crisis is positive though not significant on the profitability of new private sector banks. Concerning old private sector banks, all the variables related to bank-specific except soundness, were positive and significantly related to profitability. GDP had a significant positive impact on profitability whereas inflation had an insignificant impact. Financial crisis affected the profitability of old private sector banks negatively

Naresh Kedia (2016)[21] examined the determinants of profitability of Indian public sector banks. The study used the bank-specific variable that includes operating expenses, NPA, net interest income and credit to deposit ratio as the independent variables. Net profit was the measure for profitability. Multiple-regression was the analytical tool used in the study. The result of the analysis indicated that interest income and credit to deposit ratio related positive and significant to net profit. NPA also related to net profit positively but was insignificant. Operating expenses, however, had a negative and insignificant relationship with net profit.

Gathigia Muriithi J. et al. (2016)[22] examined the effect of credit risk on the financial performance of commercial banks in Kenya. ROE was the measure for performance whiles the measure for credit risk were; risk-weighted asset, asset quality, loan loss provision, and loans and

advances ratio. They used panel data techniques of fixed effects estimation and general method of moments (GMM) for their analysis. Their findings indicated that credit risk had a significant and negative impact on the financial performance of commercial banks in Kenya. The implication is that, poor asset quality or high non-performing loans to total assets lead to poor bank performance.

Anarfi et al. (2016)[23] in a study on the determinants of bank profitability in Ghana used ROA as a variable for profitability. The bank-specific determinants employed in the study were Asset size, Bank loan, Deposit, Capital, and Overhead whereas the macroeconomic determinants included GDP, Exchange rate, and Interest rate. They concluded that bank loan and capital had a positive impact on the profitability of Ghanaian banks. The overhead cost had a negative and highly significant impact on the profitability of Ghanaian banks. They found no effect of Bank size and deposit on the profitability of Banks in Ghana. Concerning the macroeconomic determinants, only exchange rate influenced profitability negatively.

Mohammad Muhiuddin (2016)[24] studied the determinants of profitability of private banks in Bangladesh. ROA was the measure for profitability whiles the independent variables included spread ratio, non-interest income ratio, credit to deposit ratio, operating expense ratio, profit per employee, business per employee, investment deposit ratio, capital adequacy ratio and type of bank. The finding indicated that spread ratio, profit per employee, business per employee, investment to deposit ratio, capital adequacy and operating expenses ratio had a significant negative association with profitability. Credit-deposit ratio and business per employee have a negative association with profitability.

John Bosco et al. (2016)[25] investigated the co-integration and causal relationship between the credit risk indicators, macroeconomic variables and profitability of Rwandan commercial banks measured by Return on Assets (ROA), Return on Equity (ROE) and Net Profit Margin (NPM). Non-performing Loan (NPL), Loan Loss Provision (LLP), and Capital adequacy ratio (CAR) were the credit risk variables, whereas Inflation (CPI), Gross Domestic Product (GDP) and interest Rate were the macroeconomic variables. It emerged from their analysis that the relationship between non-performing loan ratio, return on assets and return on equity was negative and significant; indicating that high NPL reduces the commercial bank profitability and

a sound credit-risk management is a precondition for safeguarding the assets and equity of the banking sector. NPM related positively to LLPR, NPLR and GDP. LLPR positively related to ROA but negatively to ROE. CAR influenced both ROA and ROE positively. All the external factors employed, thus Interest rate, Inflation, and GDP related positively with ROA and ROE.

Ali Sulieman Alshatti (2016)[26] investigated the critical determinants that affected the profitability of commercial banks in Jordan. ROA and ROE were the proxies of profitability whereas; asset size, asset structure, assets quality, capital adequacy, capitalisation, financial structure, liquidity, and Leverage were the independent variables. A panel data of 13 banks for ten years analysed indicated that capital adequacy, capitalisation, and leverage positively impact on ROA. Asset size, asset structure, financial structure and liquidity do not have a significant effect on ROA. Capitalisation and Leverage positively affected ROE whereas asset quality affects both ROE and ROA negatively. Asset size, asset structure, financial structure and liquidity do no influence ROE.

Bhattarai (2016)[27] conducted a study on four commercial banks on the determinants of lending behaviour of Nepalese commercial banks for seven years. Loans and Advances were the dependent variable whiles the independent variables were; bank size, liquidity, investment portfolio, cash reserve ratio, and deposit to capital ratio. The correlation analysis revealed that only Bank Size and Cash reserve ratio had a positive effect on Loans and Advances. The results of the regression analysis also showed that there is a positive and statistically significant relationship between commercial bank lending and its size. Liquidity, cash reserve ratio, and the investment portfolio had a negative and statistically significant relationship with loans and advances. Deposit, on the other hand, had a statistically insignificant relationship with loans and advances.

Ofosu-Hene & Amoh (2016)[28] in their study on risk management and performance of listed banks in Ghana adopted ROA and ROE as performance measures. The explanatory variables used were Risk Index (RI), Bank size, Solvency (CAP), Liquidity (LQT), Non-performing loan (NPL, Inflation (INFL) and Exchange rate. They adopted a linear multiple regression model using the least square estimator in their analysis. The results revealed that risk Index (RI) had no significant relationship with ROA and had a significant positive relationship with ROE but with

little impact. Bank size had no significant relationship with both of the performance measures, ROA and ROE. It means that whether shareholders increase their equity or not it does not affect either ROA or ROE. Capital adequacy had no significant relationship with ROA but had a significant negative effect on ROE. NPL had a significant negative relationship with both ROA and ROE. Since banks service NPLs with their generated profit, it means that an increase in NPLs leads to a decline in performance. The cost to income ratio also had a significant negative relationship with ROA and ROE. Concentration (CON) measured by market share had a significant positive relationship with ROA and ROE. The macroeconomic variables, Inflation and exchange rate, had a significant positive relationship with ROA and ROE.

Takyi Opoku et al. (2016)[29] analysed the relationship between credit risk and profitability of banks on the Ghana stock exchange. A panel data analysis of seven listed was conducted using linear multiple regression model. ROE, which represents a measure for profitability, was the dependent variable. The independent variables, on the other hand, were non-performing loans to Loans and Advances ratio (NPLR), Loans and Advances to Total Deposits (LATD), Bank Size, Leverage and Growth. The regression results revealed that the independent variables accounted for 39% of the variations in the dependent variable. NPLR related negatively with the profitability of banks listed on GSE. They again found that there was a significant negative relationship between Loans and Advances ratio and profitability of listed banks. Size of the bank also affected performance measured by ROE negatively. Leverage was found to be positive and significantly related to ROE. Growth was positive and significantly related to ROE.

Perera & Morawakage (2016)[30] embarked on a research to assess the effect of credit risk management on shareholders' value creation of listed banks in Sri Lanka. The researchers' employed return on shares (ROS) to measure shareholders value whereas credit-risk management indicators included non-performing loan ratio (NPLR), capital adequacy ratio (CAR), and Loan to deposit ratio (LDR). Regression analysis through SPSS was the statistical tool used to ascertain the relationship between credit risk management and creation of shareholders value. The findings suggested that the credit risk management measured by NPLR, CAR and LTDR explains 33.3% of the variation in ROS value. NPLR negatively related to the ROS whiles CAR negatively and insignificantly related to ROS. LTDR, however, had a positive but significant relationship with ROS.

Ibrahim Nandom Yakubu (2016)[31] investigated the bank-specific and macroeconomic determinants of commercial banks profitability in Ghana. The bank-specific variables used in the study included; bank size, liquidity, capital adequacy, assets management and expense management. Macroeconomic variables employed were; real interest rate, GDP growth and Inflation rate. The researcher employed the ordinary least square regression in his analysis in order to ascertain the relationship between the variables. Asset management (ROA) was the dependent variable whiles; the remaining bank-specific and macroeconomic variables represented independent variables. The results indicated that bank size was positive and statistically significant to profitability. Liquidity had a positive and statistically significant relationship with profitability. CAR and Expense management related positively with profitability. GDP and Inflation both negatively and insignificantly related to banks profitability. Finally, real interest rate related positively but insignificant to profitability.

Fredrick Kalui, M. & Susan Kahuthu, W. (2016)[32] researched the effect of credit-risk management practices on the growth of Savings and Credit Cooperatives Societies (SACCOS) in Nakuru, Kenya. The analysis of the primary data collection was through correlation and regression. The dependent variable was the growth of SACCOS wealth whiles the independent variables included, credit risk identification, credit risk analysis and credit risk monitoring. They found out that all the credit-risk management practices related to the growth of SACCOS' wealth positively and statistically insignificant. They, therefore, concluded on a note that collectively credit risk monitoring, credit risk identification and credit risk analysis do not have a significant effect on the growth of SACCOS' wealth hence, investing in such credit risk management practices in order to enhance growth in wealth of SACCOS is needless.

Kofi Boadi et al. (2016)[33] conducted a study on the profitability determinants of rural and community banks in Ghana and used ROA as a measure of profitability. The bank-specific variables comprised of Capital adequacy, asset quality, management efficiency, liquidity management, investments, bank size, bank resilience and funding. The macroeconomic determinants used for the study were GDP growth rate and CPI Inflation. They found that capital adequacy, asset quality, investment, GDP growth, and bank resilience had a positive predictive impact on the profitability of RCBs in Ghana. Inflation had a statistically negative effect on the profitability of Rural and Community Banks. They also found no effect of Management

efficiency and bank size on the profitability of RCBs. Funding risk, however, had a negative impact on the profitability of RCBs.

Ketan M. & Totala N.K. (2016)[34] studied the impact of macroeconomic determinants of profitability on Indian commercial banks. ROA and ROE were the profitability measures used whiles GDP, Interest rate and inflation were the macroeconomic variables used. The results of their analysis indicated that all the macroeconomic variables (interest rate, GDP growth rate, and inflation) impacted positively and insignificant on both ROE and ROA.

Anita Makkar (2016)[35] presented a paper titled "key determinants affecting the credit risk of Indian commercial banks" at an international conference on recent innovations in science, management, education and technology. The researcher used the least square model, to analyse data from 47 commercial banks. The non-performing assets to total advances ratio were the proxy for credit risk. The credit-risk determinant factors that served as the independent variables were; bank size, return on assets, advances to deposit ratio, credit to deposit ratio, operating profit to asset ratio, and priority sector lending to total assets ratio. The results indicated that the bank size, return on assets, credit creation, and operating activities have a significant impact on the credit risk of Indian banks. Priority sector lending had no impact on the credit risk of Indian commercial banks.

Mohammed Bayyoud and Nermeen Sayyad (2015)[36] assessed the relationship between credit risk management and profitability of investment and commercial banks in Palestine. ROE was an indicator of profitability in the regression analysis whereas NPLR was the independent variable. Their findings indicated that there was no relationship between credit risk management and profitability of commercial and investment banks in Palestine. Credit risk management explained only 16.3% of the variations in profitability. Commercial banks had quite an easy process of credit risk management as compared to the investment banks.

Johannes Peyavali S. Sheefeni (2015a) [37] conducted research to assess the bank-specific determinants of non-performing loans in commercial banks in Namibia. Time series econometric technique of unit-root co-integration impulse, response functions, and forecast error variance decomposition was the analytical tool used in the study. ROA and ROE the profitability

measures among the variables that explained NPLs. The results revealed that ROA, ROE, loan to total assets ratio, the log of total assets were the main determinants of NPLs. There was a negative relationship between NPLs and ROA as well as ROE. A positive relationship existed between NPLs and loan to total assets as well as the log of total assets.

Mawutor & Awah (2015)[38] in their study assessed the efficiency and profitability of banks operating in Ghana by using banks listed on the Ghana Stock Exchange (GSE) between the years 2006 and 2011. The dependent variable is profitability measured by ROA. The independent variables were the Leverage ratio, liquidity ratio, credit ratio and size of the firm. The results revealed that liquidity, Leverage, productivity, credit risk and size accounted for 60.74% of the variation in the profitability of the banks. Liquidity and profitability were positively but insignificantly related. There was a negative statistically significant relationship between firm profitability and its credit risk. Also, productivity related negatively with the profitability of the firms. Leverage was also negative and significantly related to profitability. The relationship between banks size measured by total assets was not statistically significant with their profitability.

Susan Jebet, B. et al. (2015)[39] conducted a study with the primary objective of finding out how credit-monitoring practices influence the financial performance of Kari Savings and Credit Cooperative Society (SACCO) Ltd in Kenya. To be able to explain the relationship the researcher used a regression analysis for the study. Credit risk identification and scoring, credit monitoring, loan portfolio, and loan default follow-ups were the credit monitoring practices considered in the study. It emerged from the analysis that the majority of the respondents agreed that credit monitoring practices improve the financial performance of the cooperative society.

Viswanadhan & Nahid (2015)[40] conducted a study to ascertain the determinants of non-performing loans (NPLs) in National Bank of Commerce (NBC) Dodona, Tanzania. They used descriptive statistics to identify the determinants of NPLs in NBC. The determinant factors considered in the study were the concentration of lending activities, bank's loan supervision capacity, the prevailing economic condition, Interest rate and GDP. They conducted a nonparametric test to find out the significance of the relationship between NPLs and the determinant factors. The researchers found a positive association between interest rate and NPL.

A negative relationship existed between GDP, Economic condition, the concentration of lending activities and NPL. Loan supervision capacity of banks related positively with NPL.

Abu Hanifa et al. (2015)[41]**,** Studied the effect of credit risk on the profitability of the banking sectors of Bangladesh using an unbalanced panel data from 18 private commercial banks from 2003 to 2013. The study used non-performing loan to gross loan (NPLGL), loan loss ratio to non-performing loan (LLRNPL), and capital adequacy ratio (CAR) as indicators of credit risk and return on average assets (ROAA), return on average equity (ROAE), and net interest income as profitability indicators. They used OLS, GLS GMM in their analysis and found a negative and significant relationship between NPLRGL and LLRGL, and profitability in all the models. The effect of LLRNPL on profitability related positive with ROAA and ROAE but negative to NIM. CAR also affected ROAA and NIM positively but affected ROAE negatively.

Bizuayehu (2015)[42]**,** conducted a study on the impact of credit risk on the financial performance of banks in Ethiopia, a masters' thesis submitted to the department of accounting university of Addis Ababa Ethiopia. ROE was used to represent profitability (dependent variable) whereas NPLR, CAR, LTDR, Interest rate spread, GDP, and inflation as independent variables. The correlation Matrix results among dependent and independent variables showed that NPLR, CAR, LTDR and interest spread negatively correlated to ROE whiles Bank size, GDP, and inflation were positively correlated. The regression analysis indicated that the explanatory variables, which are Bank-specific, industry-specific, and macroeconomic factors explained 60.18% of variations in profitability. NPLR and CAR affect profitability negatively which means that an increase in NPLR and CAR will result in a decrease in profitability. LTDR and Bank size, on the other hand, affected profitability positively. GDP, Inflation, and Interest spread had no significant impact on the level of ROE of Ethiopian commercial banks.

Gizaw et al. (2015)[43] in 12 years research on the topic "the impact of credit risk on profitability performance of commercial banks in Ethiopian" employed ROA and ROE as profitability indicators whiles NPLR, LLPR, CAR, and LTDR were the credit risk indicators. The regression analysis showed that the independent variables explained 46% of the variations of Profitability measured by ROE. Besides, NPLR that measures the extent of credit default risk sustained by the banks has a statistically significant sizeable negative effect on profitability measured by ROA.

There was also a negative effect of NPLR on ROE. They again found LLPR to have a significant positive effect on both ROA and ROE (profitability). CAR however related negatively with both ROE but not ROA.

Sabeza et al. (2015)[44] researched on a topic: assessing credit-risk management practices and performance of commercial banks in Rwanda. The findings from the qualitative analysis of their empirical data showed that profitability correlates negatively to proper credit risk management. It means an increase in NPLs results in a reduction in the profitability of banks. Thus, the higher the NPL, the higher the provision for bad debt and a subsequent reduction in profit margin. A whopping 90% of the respondents of the study confirmed this assertion.

Johannes Peyavali (2015b)[45] in evaluating the impact of bank-specific determinants of nonperforming loans in Namibia used Vector Autoregression (VAR) where ROA and ROE were proxies for profitability whereas, loan to the total asset (LTA), non-performing loans (NPL), and log of total asset (LNT) were the bank-specific determinants. The results indicated a negative relationship between NPL and ROA, which tend to suggest that banks with higher profitability are less constrained to engage in risky activities such as granting risky loans. LTA had a positive relationship with NPL. It implies that the quality of assets plays a significant role in the case of Namibia banks since lower assets quality of a bank, means higher NPL of the bank. LNT and NPL had a positive relationship that suggests that bank size plays a role in determining NPL. That is, the bigger the bank size, the higher the probability of default.

Kipngetich, S. & Muturi, W. (2015)[46] in a study using 18 Savings and Credit Co-operative Society (SACCOs) were with the objective of finding the effect of credit risk management on the financial performance of SACCOs in Kenya. The dependent variable was financial performance measured by ROE whiles the independent variables were capital adequacy (CAR) measured by capital to asset ratio, and management efficiency (ME) measured by the number of active borrowers per management staff. The regression analysis results indicated that CAR has a positive relationship with the financial performance of SACCOs in Kenya. It explains 42.3% of SACCO's performance. Management efficiency also explains 42.6% but relates negatively and insignificant with the financial performance of SACCOs. The insignificant relationship was an indication that management efficiency is not a very important indicator of bank performance.

Isaac Boadi (2015)[47] researched on the profitability determinants of the Ghanaian banking sector and took into consideration ROA as a proxy for profitability. The bank-specific factors employed were liquidity ratio, capital structure, deposit structure, expenditure structure, efficiency, asset quality and bank size. The macroeconomic (external) determinants included in the study were GDP growth, Inflation and real interest rate. The results indicated that management efficiency positively influenced the profitability of Ghanaian banks. The capital structure also had a statistically significant relationship with profitability. Economic growth (GDP) had a positive effect on profitability whereas the rest of the factors deposit structure, overhead; non-performing loans, inflation, and real interest rate had no significant effect on Ghanaian banks' profitability.

Opoku-Agyeman (2015)[48] as part of his masters' thesis researched on the factors influencing the profitability of domestic and foreign banks in Ghana. The bank-specific variables used in the study were; operating efficiency, credit risk, liquidity, bank size, bank growth, funding cost, years of experience and bank ownership. The external variables were bank concentration, real GDP, Inflation and Money supply. The profitability variables were ROAA and ROAE. The results indicated that bank-specific variables are more significant in explaining variations in profitability than external variables. The two most significant variables that affect the profitability of both domestic and foreign banks were operational efficiency and credit risk. Funding cost was significant and positive to profitability. Bank capitalisation also had a significant influence on banks in Ghana. The external variables such as GDP, money supply and inflation did not have a significant influence on profitability in the banking industry as a whole.

Mawutor J.K.M (2015)[49] analysed the relationship between credit risk management and profitability of banks on the Ghana Stock Exchange. A linear multiple-regression was the analytical tool employed in the analysis of data from seven banks for six years. ROA and ROE were the performance measures whiles the credit risk variables included; NPLR and Loan and Advance to Total Deposit (LATD). Bank Size, Leverage and growth were internal variables, which served as control variables. The results indicated that the relationship between NPLR and ROA were negative and insignificant but LATD was negative and significantly related to ROA. They also found Growth relating with ROA positively and significant. Bank Size and Leverage both related negatively to profitability measured by ROA. NPLR and LATD both negatively related to ROE. NPLR was insignificant whiles LATD was significant to ROE. Bank Size had a

negative and insignificant relationship with ROE. Both LEV and Growth related positively and significantly to ROE.

Antwi and Apau (2015)[50] undertook a study on the determinants of financial performance of rural and community banks (RCBs) in Ghana. They concluded that credit risk management affects RCBs performance measured by ROA. Operational efficiency affected negatively on profitability. CAR was a crucial significant driver in explaining the performance of Rural and Community Banks in Ghana. Portfolio composition and bank size were found to have no impact on RCBs profitability. GDP growth rate, a variable for macroeconomic determinant was found to be less significance on the profitability of RCBs. The other macroeconomic determinant inflation affected positively on the profitability of RCB's.

Rahman et al., (2015)[51] conducted a study on the determinants of profitability of banks in Bangladesh. Three profitability measures employed were ROA, ROE and NIM. The bank-specific variables included in the study were; capital strength, credit risk, ownership structure, bank size, non-interest income, cost efficiency, off-balance sheet activities and liquidity. Inflation and GDP growth were the macroeconomic variables employed. Their findings suggest that capital strength (regulatory and equity capital) and loan intensity had a positive and significant impact on profitability. Besides, cost efficiency and off-balance sheet activities had a negative and significant impact on bank profitability. The other variables were not uniform for all three measures of profitability. Non-interest income, credit risk and GDP were essential determinants of NIM. The size of the bank, however, had a positive and significant impact on ROA whiles inflation had a negative and significant affected ROE and ROA.

Pankaj Sinha and Saksha Sharma (2015)[52] in their study examined the determinants of profitability using bank-specific, industry-specific and macroeconomic factors. The researchers used the Generalized Method of Moments (GMM) to account for the profit and endogeneity factors. They concluded from their analysis that, the bank-specific variables - capital to assets ratio, operating efficiency and diversification significantly and positively affected the bank profits. Credit risk measured by provisions for bad debts negatively affects Indian bank profitability. The result of the structure conduct hypothesis (SCP) using the Herfindahl-

Hirschman Index (HHI) indicated that bank profits are cyclical to the growth of economy whiles increase in inflation rate affects bank profits negatively.

Nkegbe and Ustarz (2015)[53] examined the trends and determinants of bank performance in Ghana. Three measures ROE, ROA and NIM were the performance measures. Bank specific variables employed were; liquidity, operational efficiency, Non-performing loans and markets share loan. The industry-specific determinant was concentration whiles GDP, broad money supply and CPI were the microeconomic variables. Their findings indicated that liquidity affected all performance measures positive and significant. NPL negatively and significantly related to ROE and ROA but positively related to NIM. Bank size and operational efficiency also affected performance positively and significant. Market concentration related negatively with ROE but positively with ROA. GDP had a negative influence on performance whereas inflation related to ROA and NIM positively. It, however, affected ROE negatively and significant.

Rajveer Rawlin et al. (2014)[54] conducted a comparative study of the determinants of profitability of India's largest public and private sector banks. They grouped the determinant variables into; bank metrics, risk factors and productivity measures. Net profit was the dependent variable. They found that there exists a strong positive correlation between the critical bank metrics deposit, advances, total assets and bank size, and net profit for both banks. They also found another positive relation between the risk factors capital adequacy ratio, gross and net NPAs, and net profit. A strong positive relationship existed between productivity measures; business per employee, profit per employee and the net profit of the public sector bank but not the private sector bank. They further found a significant positive relationship between asset usage, efficiency measures, return on assets, and interest income over the average working fund, non-interest income over the average working fund and operating profit over average working funds with net profit for the private sector bank but negatively related to the public sector bank.

Akong'a Cynthia Jenifer (2014)[55] in her master's research project analysed the effect of financial risk-management on the performance of commercial banks in Kenya. The researcher used multiple-regression for the analysis. Financial performance measured by ROA was the dependent variable whereas, capital risk measured by total capital to risk-weighted assets, liquidity risk measured by liquidity ratio (current ratio and cash to deposit ratio), and non-

performing loan ratio (NPL/TA). The regression results indicated 57% of the variation in the dependent variable (ROA) was due to the independent variables. Again, the results indicated that there was a negative relationship between ROA and NPLR, capital to the risk-weighted asset, current ratio and cash to deposit ratio. Bank size correlated strongly with ROA,

Asad Abbas et al. (2014)[56] collected data for 21 banks in Pakistan and examined the effect of credit risk on the performance of the Pakistani banking sector. The independent variables employed were non-performance loans to total loans (NPL/TL), total loan and advances to total deposit (TL/TD) and loan loss provision to total classified loans (LLP/NPL). ROE and ROA were performance measures employed in the study. Regression results indicated that NPL/TL, LA/TD, LLP/NPL all negatively and significantly related to ROA. LA/TD and LLP/NPL related negatively and significant to ROE. NPL/TL had a positive relationship with ROE.

Iwedi, M. and Onuegbu, O. (2014)[57] conducted a study on credit risk and performance of selected deposit money banks in Nigeria over 15 years. They employed ROA as a measure of profitability while the ratio of non-performing loan to loans and assets (NPL/LA), and loan and asset to total deposit (LA/TD) were proxies for credit risk. The regression analysis indicated that the NPL/LA and LA/TD were and positively related to ROA. The credit risk (NPL/LA, LA/TD) explained 29.8% of variations in ROA.

Junaidu, M. K., and Sanusi G. (2014)[58] evaluated the effect of credit risk management on the profitability of Nigerian Banks. Default rate (DR), Cost per loan asset (CLA), and capital adequacy ratio (CAR) were the credit risk measures whiles ROA was the measure for profitability. The regression results showed that, as the ROA (profitability) increases all the independent variables thus, DR, CLA, and CAR also increases. These independent variables collectively explain 43.9% of variations in profitability. It implies that the credit risk management variables have individually and uniting effect on the profitability of Nigerian Banks.

Idowu, A and Awoyemi S. O. (2014)[59] researched the impact of credit risk management on the commercial banks' performance in Nigeria for seven years. They adopted the panel regression model where ROA and ROE were the performance indicators and NPL as well as CAR as credit-

risk management indicators. They found from their analysis that, NPL was positive and statistically significant to profitability. They said the relationship was unusual and attributed it to banks shifting the cost of loan default to other customers in the form of high interest on loans. CAR influenced positive and insignificant on the profitability of commercial banks, which they again linked to the recapitalisation directives issued by the central bank of Nigeria during the period of the study.

Maryam Mustaq et al. (2014)[60] studied the determinants of Pakistani commercial banks' profitability. Two measures EVA (value-based measure) and ROE (accounting-based measure) were the proxies for profitability. Bank specific factors used in the model were capital adequacy, asset quality, efficiency, and operating efficiency. Inflation and GDP were the macroeconomic variables added to the model. The results of their analysis indicated that CAR, efficiency, and asset quality were significant and positively related to EVA the remaining bank-specific variables were insignificant. GDP was significant, but inflation was not. CAR and operating efficiency were the only bank specific variables related to ROE significantly. CAR was positively related to ROE whiles operating efficiency was negatively related. Both the macroeconomic variables (GDP and inflation) were positively related to ROE but insignificant.

Addo Boye (2014)[61] conducted a study on the topic: credit risk management in financial institutions: A case of Ghana Commercial Bank Ltd. ROE was profitability indicator whiles NPL/TLA was the credit risk indicator. From the simple regression analysis, his findings indicated that there exists a significant positive relationship between ROE and loan loss ratio (NPA/TLA). He also found an inverse relationship between interest income and loan loss, as a unit decrease in loan loss accounts for an increase in the net interest income. It means banks with higher profitability have lower loan losses. He added that loan loss account for a part and not the only cause of variations in the profitability of banks as factors such as inefficiencies on the part of employees, bad management and other factors also account for the variation in profitability.

Abata Adeolu, M. (2014)[62] in a research on the relationship between the asset quality and performance of Nigerian commercial banks used ROA as a proxy for performance whiles loan-loss ratio (LLR) and total investment to total asset ratio (TTR) were the proxies for asset quality. Regression and correlation matrix was the tool for their analysis to establish the relationship

between asset quality and performance. The independent variables explained 75.6% of the variations in ROA. Both TTR and LLR positively related to ROA, but TTR's relationship was very weak with R2 value of 0.009 indicating that TTR can hardly explain the variations in ROA.

Asantey & Tengey (2014)[63] conducted a study to assess the effect of bad loans on the lending potential and financial performance of banks in Ghana. Pearson's correlation test and ordinary least squares regression were the analytical tools used in their analysis. The results indicated that there was a significant and highly negative relationship between bad loans and annual loan size. Thus as the banks encounter a high amount of bad loans, their annual financial allocation for SME lending reduces largely. It implies that bad loans limit the lending potential of banks. The analysis further revealed that bad loans account for 67.9% of the variation in annual loan size. The relationship between bad loans and net profit was a strong negative relationship. That means as bad loans increases, net profit decreases. Thus, bad loans hinder the financial performance of banks. Bad loans accounted for 84.1% of the variation in net profit. It implies that the degree to which bad loans limit financial performance among banks in Ghana is very high.

Yeboah, M. & Yeboah, B. (2014)[64] studied the effect of working capital management on banks profitability in four listed banks in Ghana. The dependent variable was (Profitability) measured by ROI (Earnings per share). The independent variables included cash conversion cycle (CCC), Creditors payment period CPP), debtors collection period (DCP), bank size, risk, debt maturity structure (LDEBT), Leverage (TDA), growth and credit risk. Their results from the correlation analysis indicated that TDA has a positive relationship with banks profitability in Ghana. The size of the bank had a negative relationship with profitability marginally. They also found a statistically insignificant negative relationship between risk, growth, and credit risk and bank profitability. The independent variables jointly accounted for 39.4% of the variation of the profitability (dependent variable).

Owusu-Antwi et al. (2014)[65] who conducted a study on the performance of rural banks in Ghana concluded from their analysis that, investment to total assets, total overhead cost to total asset, loan to total assets and inflation were the primary drivers to rural banks profitability in Ghana. Liquidity had an insignificantly relationship with profitability.

Alkhazaleh and Almsafir (2014)[66] in their study on the bank-specific determinants of profitability of banks in Jordan used fixed effect regression to analyse data of 14 banks for 11 years. ROA was the proxy for profitability whereas capital structure, liquidity, and bank size were the bank-specific variables that served as the independent variables. They found that liquidity was negative and insignificantly related to the profitability of Jordanian banks. Capital structure and bank size were, however, negative but significantly related to the profitability of banks in Jordan.

Mukaila A.A. et al. (2013)[67] studied banks' profitability in a developing economy regarding the Nigerian banking industry. The study employed econometric analysis of co-integration and error correction technique. The results revealed that bank size and cost efficiency did not significantly determine bank profitability in Nigeria. Credit and Capital adequacy were significant drivers found to affect bank profitability in both the short and long run. Liquidity affects profitability in the short run whiles labour efficiency affected profitability in the end.

Atta Mills and Amowine (2013)[68] in their research on the determinants of the profitability of rural banks in Ghana used ROA as the measure for profitability. The bank-specific variables included in their study were loan loss provision to total loan ratio (LLPTL), non-interest income to total assets (NIITA), bank size (log of Assets), and total overhead expenses (NIETA). The GDP growth rate, Inflation rate and money supply growth (MSG) were the macroeconomic variables. From the findings, bank size was not relevant in explaining rural bank's profitability, as it was found to be positive and insignificant. LLPTL also influenced profitability negatively but significant. The ratio of non-interest income to the total asset (NIITA) emerged as a vital driver of bank performance. Total overhead expenses to the total asset (TOETA) were negative and significant to profitability. GDP growth and money supply growth both related to profitability positively and significant whereas, Inflation was negative and significantly related to rural bank performance.

Fredrick Lagat et al., (2013)[69] studied the effect of credit management practices on lending portfolio among savings and credit cooperatives in Kenya. Among their objectives was to examine risk management mitigation measures on lending portfolio among savings and credit cooperatives. Their findings from the study after using regression analysis revealed that risk

management practices (risk identification, risk monitoring, risk evaluation, risk mitigation and risk analysis), except risk evaluation, all the other variables had a statistically significant relationship on the performance of Kenyan savings and credit cooperatives. The risk management activities together explained 48.8% of the performance of the loan portfolio of the savings and credit cooperatives in Kenya.

Ruziqa (2013)[70] in a study of the effects of both credit risk and liquidity risk on the profitability of conventional banks in Indonesia came up with the findings that credit risk has a negative effect on ROA and ROE (Profitability). The effect of bank capital (Liquidity) however has a significant positive relationship with ROA and ROE, and NIM (Net Interest Margin). Meanwhile, bank size influenced NIM negatively and significant.

Magali (2013)[71] conducted a study on 37 Rural Saving and Credits Cooperative Societies (SACCOS) in Tanzania on the topic "the impacts of credit risk management on profitability on rural Savings and Credits Cooperative Societies". The researcher used Univariate regression analysis where ROA and ROE were proxies for profitability and NPL was the proxy for credit risk management. It emerged that NPL has a negative relationship with ROA and ROE. It implies that as NPL increases, the profitability measured by ROA and ROE decreases.

Okoth V. Ongore and Gemechu B. Kusa (2013)[72] on a study of determinants of financial performance of commercial banks in Kenya, used ROA, ROE, and NIM as the performance variables (dependents) and independent variables were capital adequacy, Asset quality, management efficiency, liquidity (bank specific) as well as GDP, and Inflation which are Macroeconomic factors. They found out that there was a positive relationship between capital ratio and ROA, as well as NIM but negatively related to ROE. Asset quality (NPL/TLA) had a negative relationship with ROE, ROA and NIM. The other independent variables: Management efficiency and liquidity management had a positive relationship with ROA, ROE and NIM though liquidity weakly related. GDP was positively related to ROE and ROA though not significant. GDP however significantly and negatively related to NIM. Inflation on the other hand significantly and negatively related to the performance measures.

Lillian Kisivuli (2013)[73] conducted a study on the effect of credit-risk management on loans portfolio of SACCOS in Kenya. The dependent variable was the loan portfolio while the independent variables were the components of CAMEL (i.e. Capital adequacy, Asset quality, Management efficiency, Earnings and Liquidity). From the regression analysis, it emerged that CAMEL explains 56.3% of the variations in the loan portfolio of SACCOS in Kenya. The finding also indicated that capital adequacy, earnings, and liquidity, positively correlated with the loan portfolio. Asset quality, on the other hand, negatively related to the loan portfolio.

Kaaya and Pastory (2013)[74] researched the relationship between credit risk and performance of commercial banks in Tanzania using 11 banks. A panel data approach and regression analysis was the method used to establish the relationship between the variables. The dependent variable used was ROA, which measure how banks are profitable relatively to their asset and how efficiently management utilises the company assets to generate profit. The independent variables employed were; Loan loss to gross loan, Non- performing loan, loan loss to net loan, impaired loan to gross loan. The control variables in the model were deposit and bank size. They found out from their analysis that the independent variables combined have 70% ability to influence the performance of the banks. The control variables also can increase performance by 5.79%. All the independent variables thus, Loan loss to gross loan, loan loss to net income and non-performing loan had a significant negative relationship with performance.

Mohamed Dore (2013)[75] investigated the profitability of bank in Ghana with a focus on bank-specific and macroeconomic indicators. The bank-specific variables were; capital adequacy, assets quality, liquidity, and efficiency whiles the macroeconomic variables were inflation and GDP growth. The study made use of panel regression to analyse the data. The findings indicated that capital adequacy and liquidity related to Ghanaian banks positively and significantly, whiles, the macroeconomic variables (Inflation and GDP) negatively and insignificantly affected the profitability of the Ghanaian banks.

Aparna et al. (2012)[76] also examined the determinants of bank profitability of private sector banks in India. They used ROA as a measure of profitability whereas; Credit/deposit ratio, Provisions and contingencies, Non-interest income, Spread ratio, Operating expense ratio, Profit per employee, Business per employee, Investment/deposit ratio, Capital adequacy ratio, Non-

performing assets and Type of bank outcome were the independent variables. The results of their studies indicated that there was a positive relationship between bank profitability measured by ROA and spread ratio, credit-deposit ratio, and profit per employee, business per employee, capital adequacy ratio, and non-interest income. Investment to deposit ratio, non-performing assets, operating expenses, and provisions and contingencies negatively influenced the profitability of Indian private sector banks.

Haron et al., (2012)[77] studied the effectiveness of credit-risk management system on loan performance of the microfinance sector in Kenya and came out with the following findings: there was no relationship between involvement of top management in formulating credit terms, cash flow statements, the condition of business and loan performance. They further found out that there was a significant relationship between high involvement of credit officers in formulating credit terms, customers involvement, loan duration, borrowers character, collateral, customers repayment history, size of business, the signing of covenants, diversification, credit rating, financial condition all had a significant relationship with loan performance. Interest charged inversely related to loan performance.

Farhan et al. (2012)[78] conducted empirical research on the determinants of non-performing loans in the Pakistani banking sector where Interest rate, Energy crisis, Unemployment, Inflation, GDP growth and Exchange rate were the independent variables. NPL was the dependent variable. Correlation and regression was the analytical tool for the study. The results from the analysis indicated that except GDP that has a significant negative relationship with NPL, all other variables related positive and significant with NPL.

Boahene et al. (2012)[79] researched six commercial banks in Ghana for over five years. After a panel data analysis model used in the study, it emerged that credit risk indicators: non-performing loan rate, net charge-off rate, and pre-provision profit as a percentage of net total loans and advances positively related with profitability which was measured by return on equity (ROE). An indication that as a bank's risk of customer loan default increases, profitability also increases. However, they added that it might be so due to an extremely high-interest rate charged by Ghanaian banks. **Buchs and Mathisen (2005)**[80] findings buttressed this assertion with an

argument that notwithstanding high overhead costs and sizable provisioning due to high NPLs, Ghanaian banks pretax returns on assets and equity are among the highest in Sub-Sahara Africa.

Afriyie and Akotey (2012)[81] also had a study on credit risk management and profitability of selected rural banks in Ghana. ROE was the profitability indicator whiles NPL and CAR represent credit risk. They found out that, the NPL is positive and statistically significantly related to ROE. They said the result was unusual since the normal relationship of NPL with banks profitability was expected to be negative. It means that even though there is a presence of massive loan defaults, NPLs increases proportionally to profitability. They attributed this relationship to inadequate and ineffective institutional measures by Rural Banks to deal with credit risk management but instead shift the cost of loan default to other customers in good standing in the form of a higher interest rate on loans. CAR also related positive and insignificant with ROE. They attributed the positive relationship to the recapitalisation directive issued by the central bank of Ghana (BoG) at the period of their study.

Prakash R. Poudel (2012)[82] in his study on the impact of credit risk management on the financial performance of commercial banks in Nepal found out that, there is a significant negative relationship between return on assets (Profitability) and default rate, and capital adequacy ratio (credit risk). He, however, stressed that credit risk management is an essential predictor of bank financial performance. Among the risk management indicators, default rate management is the most critical predictor of bank performance.

Kolapo et al. (2012)[83] also researched five Nigerian commercial banks for 11 years on the topic credit risk and banks performance in Nigeria. They used ROA as a measure of profitability and NPL/LA, LA/TD and LLP/CL as credit risk measures. In their panel model approach, they found out that, the effect of credit risk on bank performance measured by ROA of banks is cross-sectional invariant. It means that it is similar across banks in Nigeria. Thus, nature, and managerial pattern of individual firms do not determine the impact. Loan and advances ratio (LA) coefficient exerted the most significant positive effect on the profitability across the banking firms.

Ogilo Fredrick (2012)[84] analysed the impact of credit risk management on the financial performance of commercial banks in Kenya and also attempted to establish if there exists any relationship between the credit risk management determinants by using CAMEL indicators and financial performance of commercial banks in Kenya. A multiple regression analysis was the analytical tool used in the study with ROE been proxy for profitability and the CAMEL components: Capital adequacy, Asset quality, Management efficiency, Earnings and Liquidity. Capital adequacy, Asset quality, and Liquidity had a weak relationship with the financial performance of commercial banks in Kenya. Earnings quality, on the other hand, strongly related to the performance of commercial banks in Kenya. The researcher concluded that the CAMEL model is fit to be a proxy for credit risk management since the variables have proven to have a significant relationship with performance.

Mabvure et al. (2012)[85] study the topic; nonperforming loans in commercial banks in Zimbabwe with the aimed to find out how NPLs have affected the bank regarding liquidity and profitability. Their findings indicated that external and internal factors cause NPLs. The internal factors included poor credit policy, weak credit analysis, and poor credit monitoring, inadequate risk management and insider loans. The external factors were natural disasters, government policies and the integrity of the borrower. They further found that NPLs have negatively affected the performance of the bank regarding liquidity and profitability. They concluded from the study that an increase in NPLs resulted in a reduction in profitability as well as the liquidity of the bank.

Xuezhi Qin and Dickson Pastory (2012)[86] had a study on commercial banks profitability position in Tanzania. They used three ratios as measures for profitability ROA, ROE, NIM. The independent variables used were capital adequacy, liquidity and asset quality. Findings from the results of the regression model indicated that the independent variables explained 81.8% of the variations in the dependent variables. It implies that the capital adequacy, liquidity, and asset quality are more crucial in the profitability of commercial banks as the absence of quality assets and liquidity, commercial banks will always incur losses. Capital structure and NPLs had negative determinant on profitability. The asset quality and liquidity ratios, on the other hand, had positive coefficients, implying that as these ratios increase profit increases.

Tobias, O. and Themba, M. (2011)[87] studied the effect of banking sectorial factors on the profitability of commercial banks in Kenya. The factors were in two groups: bank-specific and market structure factors. The bank-specific factors employed in the study included capital adequacy, assets quality, liquidity management, operational cost efficiency, and income diversification. The market structure factors were foreign ownership structure and market concentration. The profitability measure used was ROA. They used multiple linear regression method to analyse the data. Their findings indicated that all the bank-specific factors had a statistically significant impact on profitability whereas none of the market structure factors had a significant impact on the profitability of Kenyan banks.

Saira Javaid et al. (2011)[88] used the pooled ordinary least square (POLS) method to analyse the effect of internal factors on bank profitability in Pakistan. ROA was the profitability measure used whereas the internal factors included in the study were assets, loans, equity and deposit. The results indicated that there was the existence of a significant negative effect of bank size on profitability. Capital ratio and deposit to asset ratio also showed a significant positive relationship with ROA. Total loan to asset ratio had a positive but insignificant impact on the profitability of banks in Pakistan.

Aduda and Gitonga (2011)[89] also conducted a study on the relationship between credit risk management and profitability among commercial banks in Kenya. The researchers used ROE as a predictor of profitability and NPLR as a credit risk indicator. They found that NPLR affects the profitability of commercial banks in Kenya by 72.19%. It is an indication that a unit change in NPLR will result in 72.19% change in ROE. They concluded that there is a relationship between credit management and profitability such that credit management affects profitability.

Shipho (2011)[90] conducted a study on 38 commercial banks in Kenya that aimed to determine and evaluate the effects of bank-specific factors namely capital adequacy, asset quality, liquidity, operational cost efficiency, and income diversification on the profitability. The next objective was to determine and evaluate the effects of market structure factors, which comprise foreign ownership and market concentration on profitability. The researcher used a multiple linear regression model and t-statistics in the determination of the relative importance of each independent variable in affecting profitability. The result indicated that there exist a strong

negative relationship between poor asset quality and profitability. It means banks that fail in monitoring their credit loans are less profitable than those that pay particular attention to asset quality.

Kargi (2011)[91] conducted a study on a topic: Credit risk and the performance of Nigerian banks on six commercial banks. ROA was a proxy for profitability whiles NPL/LA, and LA/TD were the proxies of credit risk. The correlation output results indicated that there was a negative relationship between credit risk indicators and profitability. The regression results of the model used also suggested that all the independent variables have a negative impact on profitability. The parameters showed that a unit increase in NPL decreases profitability by 51.6% however, a unit increase in the ratio of LA/TD significantly decrease profitability by 251.98%. It further found that the credit risk indicators (NPL/LA, LA/TD) explained 16.18% of variations in ROA.

Ramadan et al. (2011)[92] investigated the nature of the relationship between profitability and its determinant factors of Jordanian banks. ROA was a proxy for profitability. The independent variables were: asset composition, capital adequacy, credit risk, overhead cost, and bank size as bank specific measures, market concentration, and banking sector size as industry-specific measures whereas Inflation and economic growth were the measures of macroeconomic determinants. From the results of the analysis, bank-specific determinants were able to explain a significant part of the banks' profitability in Jordan. The result indicates that banks with high capital ratio tend to earn more profit by translating the safety advantage into profit. Again, it emerged that, the lending activities of the Jordanian banking sector are associated with profit so, in order to maximise profit, Banks in Jordan should maintain sizable activities of lending. Credit risk was found to have an inverse relationship with profitability. Bank size influenced the profitability of Jordanian banks negatively and insignificantly.

Danson, M. and Adano, S.M. (2011)[93] conducted a study on the impact of credit risk management on the financial performance of banks in Kenya for seven years. ROA was the proxy for performance, and default rate (NPL/TL), Bad debt cost per loan (BDC/TL), cost per loan asset (CLA/TL) were the proxies for credit risk management. The results of their analysis showed a correlation between the dependent variables and the independent variable. There was a significant relationship between ROA and all the credit-risk management indicators. The default

rate was however found to have the most significant and negative effect on the performance of banks in Kenya.

Jackson Oludhe (2011)[94] in an MBA thesis submitted to the University of Nairobi researched on the impact of credit risk management on the financial performance of commercial banks in Kenya by using the CAMEL model components as indicators of credit risk and ROE as performance indicators. The components of the acronym CAMEL are Capital adequacy, Asset quality, Management efficiency, earnings quality and liquidity. Correlation and regression were analytical tools for the data analysis. The result indicated that there was a weak relationship between capital adequacy, asset quality, liquidity and performance of Kenyan banks measured by ROE. Management efficiency had an average relationship with performance whiles Earnings quality had a strong relationship with the performance of banks in Kenya. The CAMEL components were able to explain the variations in performance up to 94.3%. The researcher concluded that the CAMEL model could be suitable as a proxy for credit risk management.

Evelyn Richard (2011)[95] in a study wanted to ascertain the factors that cause non-performing loans in commercial banks in Tanzania and the strategies to resolve them. The analysis revealed that internal factors controllable by the commercial banks were the major contributors to NPL particularly weak credit analysis, and diversification of funds. Uncontrollable factors such as court injunction when banks wanted to dispose-off collateral, low price fetched when disposing of mortgage assets and change in policies. Establishing a good relationship with borrowers was the most favourable strategy employed by banks in the effort of reducing NPLs. Commercial banks in Tanzania need to strengthen their loan management process especially in monitoring their borrowers and probably come up with new ways of monitoring them.

Akhtar et al. (2011)[96] conducted a study on factors influencing the profitability of Islamic banks of Pakistan for five years and employed bank-specific determinants only as the independent variables. ROA was the proxy used for profitability whereas gearing ratio, NPL ratio, Asset management, Operating efficiency, and CAR formed the independent variables for the study. Their findings indicated that Asset management had a positive and significant relationship with the profitability of Islamic banks in Pakistan. Bank size affected profitability negatively and insignificant whiles, Non-performing loan ratio related negatively to profitability. The capital

ratio had a significant impact on ROA. TD/TA and TL/TA all had a positive and significant effect on the profitability of Islamic banks in Pakistan.

Kithinji (2010)[97] studied the impact of credit risk on profitability in Kenyan commercial banks for five years. The regression results indicated that the amount of credit extended contributes positively to profit but marginally. Again as the level of NPLs, increases profit increases. There was, therefore, a positive relationship between the amounts of credit extended and profit whiles; there was a negative relationship between the level of NPLs and profit. The t-test conducted indicated that there is no association between profits, amount of credit and the level of non-performing loans. The implication is that other variables other than NPLs and Credit influence profitability of Kenyan Banks. The researcher, therefore, opined that the commercial banks should focus on other factors instead of non-performing loans if their objective is to predict profit.

Hosna et al. (2009)[98] in their masters' thesis conducted a study on four Swedish commercial banks for eight years on a topic credit risk management and profitability in commercial banks in Sweden. ROA was the proxy for profitability measure whiles, NPLR and CAR were the credit risk indicators. After their analysis using regression, they found out that there was an effect of credit risk management on profitability on a reasonable level of 25.1% possibility of NPL and CAR predicting the variance in ROE. NPLR, however, was found to have the most negative and significant effect on ROE.

A study conducted by **Fadzlan Sufian (2009)**[99] on factors influencing bank profitability in Malaysia employed ROA as the proxy for profitability whereas the bank-specific determinants included LLP/TL, NII/TA, NIE/TA, LOANS/TA, LOGTA, and EQUITY/TA. They also employed LNGDP and INFL as the macroeconomic determinants in the model. The findings indicated that Banks with higher loan concentration shows a lower profitability level. Banks with higher-level capitalisation, a higher percentage of income from non-interest sources, as well as high operational expenses show higher profitability. The researcher again found economic growth has a negative effect on the Malaysian bank's profitability. Meanwhile, a high inflation rate has a positive effect on the profitability of Malaysian banks.

Constantine, A. and Voyazas, S. (2009)[100] conducted a study on the determinants of bank profitability of Greek banking sector. Bank specific and macroeconomic variables were the independent variables whereas ROA and ROE were the proxies for profitability. Using pool ordinary least square method of analysis, they concluded that macroeconomic factors such as inflation and private consumption play a significant role in shaping the performance of banking institutions in Greek. Besides, bank-specific variables such as capital or measure of cost-efficiency play an essential role in determining bank profitability in Greek.

Kosmidou (2008)[101] in a research conducted on the determinant of banks' profit in Greece during the period of EU financial integration employed linear regression model on 23 commercial banks for twelve years. While using ROA to represent profitability and the ratio of the loan loss reserve to gross loan for asset quality, the result showed a significant negative impact of asset quality to bank profitability.

Kosmidou et al. (2008)[102] presented a paper at the 37th annual conference of the Money, Macro and Finance research group, Coventry University on the determinants of profitability of domestic UK commercial banks. The researchers investigated the impact of bank-specific characteristics, macroeconomic conditions and financial structure on the UK owned commercial banks' profits for seven years. The return on average assets and equity, and net interest margin (NIM) were the dependent variables used in the study. The independent variables were in two groups: bank-specific and macroeconomic variables. The bank-specific measures were; cost to income ratio (COST) representing efficiency, the ratio of liquid assets to customer plus short-term funding (LIQUID), the ratio of loan loss reserves to gross loan (LORES) as asset quality indicator, ratio of equity to total assets (EQAS) was a measure for capital strength, whereas, the total assets of a bank representing its size (SIZE). After the Fixed-effect regression model, the results indicated that COST was a robust determinant of UK banks profitability as it was negative and significantly associated with profitability. LIQUID had a positive effect on ROAA and a negative effect on NIM. The impact of LORES had a positive and significant effect on NIM but insignificant on ROAA. Capital strength affected profitability positively and significant. Bank size had a negative effect on both ROAA and NIM. The macroeconomic factors, which are FDPGR and Inflation, related positively and were significant in explaining UK banks profitability.

Fadzlan, S. and Royfaizal R.C. (2008)[103] conducted a study on the determinants of bank profitability in the Philippines for 15 years. ROA was the proxy for profitability. The independent variables were internal and external determinants. The internal determinants included bank size (LNTA), Loan loss provisions divided by total assets (LLP/TA), Total overhead expenses divided by total assets (NIE/TA) and book value of stockholders' equity as a fraction of total assets (EQASS). Non-Interest Income over total assets (NII/TA) which consists of commissions, service charges, and fees guarantee fees, net profit from the sale of investment securities, and foreign exchange profit were the proxies for non- traditional activities. External determinants included in the analysis were the natural log of GDP (LNGDP), Money Supply growth (MSG), annual Inflation rate (INFL), and Market Capitalization (MKTCAP). The findings from the regression analysis indicated that LNTA related negatively to profitability indicating that larger banks in the Philippines tend to earn a lower profit. LLP/TL related negative and statistically significant to profitability. It suggests that Philippines banks with higher credit risk tend to exhibit lower profitability levels. NIIT/TA was also found to be positive and statistically significant which indicates that banks that get a more substantial proportion of their income from non-interest sources such as fee-based services to report a higher level of profitability. NIE/TA had a negative and significant impact on profitability implying that an increase in expenses reduces profitability. EQASS is positively and statistically significant to profitability. All macroeconomic conditions and financial industry variables on ROA is positive except for INFL.

Nor Hayati Ahmad and Mohammed Ariff (2007)[104] conducted a study of the determinants of the credit risk of commercial banks in the banking system of emerging economies banking systems and developed economies. Australia, France, Japan, and the US represented developed countries whiles the emerging economies were India, Korea, Malaysia, Mexico and Thailand. The dependent variable employed was changed in impaired loans (or Non-performing loans) to total gross loans as a measure for credit risk. The independent variables were management efficiency, loan loss provision, loan to deposit ratio, leverage, regulatory capital, funding cost, liquidity, spread and total assets. Their analysis revealed that management efficiency, which is denoted by earning assets to total assets ratio is significantly positively related to credit risk in three countries; Malaysia, India and France. The indication is that the higher the proportion of earning assets, the greater the tendency for banks in these countries to incur potentially high

credit risk. Management in Indian banks negatively related to credit risk. Loan Loss Provision (LLP) significantly positively related to the credit risk of banks in Australia, Japan, Mexico and Thailand. Loan to Deposit ratio was a significant positive determinant of credit risk in Malaysia, the US, and France. Leverage was also found to be an insignificant factor for credit risk in all countries except for Mexico. Liquidity (LIQ) was significant and positively related to credit risk in Australia, India, Korea and the US, which suggest that the banks with more liquid assets tend to have higher credit. In the case of Mexico Banks, Liquidity was significant with a negative coefficient. Spread related negatively to banks in India and Thailand but positive for banks in France. The regulatory capital was positive and significantly related to credit risk for banks in Japan, Malaysia and Mexico. There was a negative but significant relationship between credit risk and regulatory capital of both India and Australia banks. An indication, which suggests that, undercapitalised banks take more risks than the well-capitalised ones.

Amidu and Hinson (2006)[105] examined how credit risk affects a bank's capital structure, profitability and lending decisions in Ghanaian banks. They employed a panel regression analysis in their study. Credit risk exposure was the dependent variable whereas capital (CAP), liquidity (LQT), lending (LDG), profitability (PRE), risk (RSK), and size (SZE) were the independent variables. The results showed that there exists a positive relationship between credit risk and equity capital. Banks turn to hold a large amount of capital in order to avoid failure. They also found a negative relationship between credit risk and banks liquidity. Thus, banks with low credit risk keep liquid funds. Credit risk had a positive and statistically insignificant relation with loans and advances. Thus, the advancement of loans does not necessarily depend on the level of credit risk exposure. There was also a positive and statistically relationship between bank size and credit risk. The bigger the size of a bank, the more their credit risk exposure.

Anna Vong and Hoi Si Chan (2006)[106] in fifteen years of study on the determinants of bank profitability in Macau opined that a well-capitalised bank is of paramount importance in affecting profitability. ROA as a measure of profitability was the dependent variable. The internal determinant variables considered included; the capital ratio EQTA), Asset composition (LOTA), the effect of fund source (DETA), the effect of asset quality (PRTO), the expense management variable (NETA), the importance of fee-based services of banks and their product diversification (NIGI), tax variable (TOPB), and the market share (INDE). The external factors

also included economic growth (RGDP), real interest rate and inflation. The size of the banking sector and Lerner Monopoly Index (LMM) considered in the study were financial structure variables. Panel regression techniques used in analysis revealed that both the internal and external variables affected profitability significantly. Among the internal determinants, the EQTA, LOTA, PRTO, and INDE showed a significant impact on bank profitability. They also found an inverse relationship between LOTA, PRTO and profitability. Larger banks achieved lower ROA than smaller banks. Among the external determinants, the inflation rate was the only variable having a stronger impact on banks ROA. The remaining variables namely economic growth (RGDP), real interest rate, the sector size and market power showed no impact on bank profitability.

Fofack (2005)[107] researched the causes of non-performing loans in sub-Sahara Africa and their macroeconomic implications. The determinants of NPL were analysed using correlation and causality analysis. The analysis made use of data from 16 African countries, which comprised of seven CFA, and nine non-CFA countries. The correlation causality analysis was in two parts. First, was finding the association between NPLs and the macroeconomic factors, which included GDP, Inflation, and interest rate, Changes in the real exchange rate, Interest rate spread and broad money supply. At the microeconomic level, the analysis centred on the relationship between NPLs and banking sector variables that include return on assets and equity, net interest margins and net income, and interbank loans. The results indicated a negative association between GDP and NPLs. The relationship between inflation and NPL was also negative signifying that hyperinflation may erode banks assets and equity. A positive association existed between NPLs and real exchange rate appreciation. A negative association again existed between NPLs and monetary expansion. The results further indicated a negative association between NPLs and most banking specific variables including return on assets and equity, total deposit, net interest margin and net income.

Nor Hayati Ahmad and Shahrul Nizam Ahmad (2004)[108] analysed key factors influencing credit risk of Islamic banks in Malaysia. A comparison of these factors between Islamic and conventional banking systems in their study was from 1996 to 2002. NPL to total loans was a proxy for credit risk, which served as the dependent variable. The independent variables were Management Efficiency (MGT), Leverage (LEV), Risky sector loan exposure (RSEC),

Regulatory capital (REGCAP), Loan Loss Provision (LLP), Funding Cost (FCOST), Risk Weighted Assets (RWA), Natural log of Loan to Deposit (LD). The regression analysis indicated that for Islamic Banking, three variables; MGT, RWA, and LNTA related significantly to its credit risk. In the case of conventional banking, four variables; RSEC, REGCAP, LLP, and RWA were found to be significantly influencing its credit risk. They found an R-square value of 75.6% in conventional banking compared to 34% in Islamic banking which suggested that these variables collectively have a stronger influence on the credit risk of conventional banking than the credit risk of Islamic Banking. Both Islamic and conventional banking systems experienced similar effects of Leverage, funding cost, and risk-weighted assets on credit risk but Islamic banking experienced a different impact of management efficiency, regulatory capital and loan loss provisions on their credit risk. Three factors MGT, REGCAP and LLP, were statistically different as credit risk predictors of Islamic and conventional banking. MGT was positive and significant for Islamic banks but related negatively to the credit risk of conventional banks. REGCAP was negative and significantly related to credit risk of conventional banks but positive and not significantly related to credit risk in Islamic banks. LLP was positive and significant predictor of credit risk in conventional banks and negative but not significantly related to credit risk in Islamic banking.

2.3. RESEARCH GAP

From over a hundred literature reviewed by the researcher relating to the credit risk and profitability of banking institutions across the globe, it was evident that there is lack of conclusiveness on the findings of the relationship between credit risk management and profitability. There is a mix of result from the existing literature, which makes the study on the relationship between credit risk and profitability in banking institutions inconclusive. Besides, there are much research works on commercial banks, but only a hand full are on the savings and loans companies and other NBFIs especially in Ghana. The literature gaps stated above makes this study in the savings and loans (S&L) subsector a vital exercise. The S&L companies in Ghana whose core business is deposit taking and granting of loans to the MSMEs continue to face the threat of non-performing loan on a daily basis that needs attention. There is, therefore, the need to fill this gap by conducting a study in the savings and loans subsector of the banking industry in Ghana hence, the chosen topic for the research.

2.4. RATIONALE OF THE STUDY

For the past couple of years after the enactment of the non-bank financial institutions (NBFIs) law, 1993 [PNDCL.328], Many microfinance companies emerged across the country but, most of them are no more in operation due to a massive accumulation of Non-performing Loans in their books. A report by Ghana Association of Microfinance Institutions Network (GAMFIN) indicates that approximately, thirty microfinance institutions (MFIs) collapsed in Ghana during the first quarter of 2013 alone. About twenty (20) more collapsed by the close of that year due to an alleged inability to "sustain their operations" (GAMFIN, 2014 annual report). Because of the collapse, customers of these institutions, never got a refund of their deposits reportedly because the owners were either untraceable, or the companies did not have the funds to pay them. Not only did this bring about economic hardship on the affected customers, but also the Ghanaian economy as a whole. Most of these collapsed microfinance institutions maintained their corporate accounts with the commercial banks, which made the ripple effect of the liquidity risk experienced by the collapsed companies transferring a pass through shock to the entire banking sector.

The Savings and Loans companies by default have the small and medium enterprises (SMEs) as their target market. These SMEs are considered the riskiest sector but at the same time, the most significant market opportunity for any financial institution to tap. This SMEs contribute 52% to the economic output, and 44% of all investments go into this sector of the economy (Graphic Business, Dec. 2011). Even though there are various causes, one of the main contributing factors is inadequate knowledge of the industry by the owners and operators of these affected companies, and that led to the accumulation of non-performing loans. This study is, therefore aiming to throw more light on the need for rigorous credit-risk management practices and serve as a reference manual for both existing and incoming operators in the industry.

2.5. SIGNIFICANCE OF THE STUDY

The study on credit risk management and profitability of Savings and Loans companies is significant for several reasons. The loan portfolios of the savings and loans institutions just like any other banking institutions are their major assets that contribute a significant proportion to

their overall profits in the form of interest income. It means that loans play a critical role in determining the financial performance of the institution. We can, therefore, conclude that the healthier the loan portfolio of a company, the better its financial performance. Considering the importance of a healthy loan portfolio to the sustainability of the financial institutions, a study to identify the management practice that affects the profitability performance of these financial institutions is therefore very essential. The findings of this study would go a long way to enable the sampled companies as well as all the S&L companies to adopt workable strategies to control the problem of growing non-performing loan portfolios through better credit-risk management practices, which will also improve their financial performance in order to remain sustainable.

Generally, the study is expected to contribute to the existing credit risk management practices in the savings and loans companies and the banking industry in general. It will also serve as a guiding document for experts, professionals, Bank of Ghana, academia and the public. The outcome of this study is going to contribute to knowledge and literature in the subject under investigation. It will be useful as a source of reference for researchers, students, policymakers, bankers, economists and other stakeholders interested in the relationship between credit risk management and the profitability of the savings and loans companies and the banking industry as a whole.

2.6. STATEMENT OF THE PROBLEM

The past decade has witnessed dramatic losses in the banking industry across the world. Financial companies (e.g. Lehman Brothers) that used to perform very well all of a sudden announced massive losses due to credit exposures that went bad or taken of the wrong position of interest rate, or derivative exposures that may or may not have been assumed to hedge balance sheet risk.

Credit risk in banking is the probability of a borrower defaulting on his or her loan commitments. The very natures of the banking business make it sensitive because, more than 85% of their liabilities are from depositors (Saunders, Cornett, 2005)[109]. Banks use these deposits to generate credit for their borrowers, which is a revenue-generating avenue for most banks. This credit creation process exposes the banks to high default risk that can lead to financial distress,

including bankruptcy. Nevertheless, in order to remain in the competitive market, financial institutions must still create credit for their clients to get some returns in order to be profitable and sustainable. The banking industry in Ghana after the enactment of the Banking Law (1993) Act (328), witnessed a surge in the number of banks, and nonbank financial institutions in the country. It indirectly created a keen competition among the banking industry due to the liberalised nature of the sector that led to free operations in the banking industry with the aim of outsmarting competitors, which instead brought about low margins and many other challenges facing the sector.

The world has experienced remarkable instances of banking and financial crises during the last thirty years. Caprio and Klingebiel (1997)[110] identified 112 systemic banking crises in 93 countries since the late 1970s. Demirguc-Kunt and Detragiache (1998)[111] have also identified 30 major banking crises encountered from the early 1980s and onwards. According to the above researchers, most of these banking crises occurred in developing countries such as Ghana. Surprisingly, most of the crises came about because of unsecured loans. Continuous loan defaults have become an order of the day in developing countries such as Ghana. It is, therefore; very uncommon for any banking institution in Ghana to say it has never experienced this persistent loan default phenomenon. For instance, the stock of NPLs stood at GH¢6.2billion as at the end of December 2016, expanding at a compound annual growth rate (CAGR) of 41.89% from GH¢0.26 billion by the end of December 2007. By June 2017, the stock of NPLs in the Ghanaian banking industry had risen to GH¢7.96billion from GH¢6.09 billion in June 2016. The NPL ratio experienced an increasing trend between 2007 and 2010 from 6.37% to 18.08%, declined to 11.27% in 2014, and after that increased to 17.7% in 2016 and 12.2% in June 2017. The asset quality review (AQR) exercise carried out in 2016 also revealed weaknesses in the banks' loan classification practices, which led to the downgrading of some already-existing credit facilities.

The importance of Healthy loan portfolios remains a vital asset for banks due to their positive impact on bank performance. However, the unfortunate reality is that some of these loans usually do not perform and eventually result in bad debts which affect banks earnings on such loans. These bad loans become a cost to the institutions regarding their implications for the quality of their assets portfolio and profitability. Because, per banking regulations, all loan-granting institutions must make provision for non-performing loans and charge for bad loans, which

reduce their loan portfolios and the bottom line. It is clear from the above assertions that prudent risk management is eminent for every lending institution as it can generate into bankruptcy. Failure of individual banks adversely affects the economy and the entire society (Kolapo et al., 2012). Because of that, it is the concern of this research work to assess what causes these non-performing assets and the impact it has on the profitability of the Savings and Loans companies in Ghana.

2.7. RESEARCH OBJECTIVES

The broad objective of the study was to identify the type of risk that mostly affects the day-to-day operational activities of the S&L companies and to examine the relationship between credit risk management, and the profitability of the savings and loans companies in Ghana.

Specifically, the study seeks:

1. To study and analyse the effect of credit risk management indicators on profitability of S&L Companies

2. To identify the factors causing Non-performing Loans in the S&L companies

3. To find out the impact of Non-performing Loans on the operational activities of the S&L Companies

4. To study and analyse the existence and effectiveness of the credit risk management measures practiced by the S&L Companies

5. To study the difficulties faced by the S&L companies at the time of loan recovery

2.8. RESEARCH QUESTIONS

The research work seeks to find answers to the following questions:

1. What effect does the credit risk management indicators have on profitability of the S&L Companies?

2. What are the causes of Non-performing Loans in the S&L Companies?

3. To what extent do Non-performing Loans affect the performance of S&L Companies?

4. How effective are the existing credit risk management measures practiced by the S&L Companies?

5. What difficulties does the S&L Companies face at the time of loan recovery?

2.9. HYPOTHESIS

Non-performing Loans or assets with its associated cost have become a burden on non-bank financial institutions in Ghana. This menace has aided the collapse of many banks and non-bank financial institutions that faced liquidity problems because of inadequate credit-risk management practices. Given the above objectives, the researcher proposed the following positive hypotheses:

$\boldsymbol{Ho_1}$: There exist a statistically significant relationship between Non-Performing Loan Ratio (NPLR) and Return on Assets (ROA) of S&L companies in Ghana

$\boldsymbol{Ho_2}$**:** There exist a statistically significant relationship between Capital Adequacy Ratio (CAR) and Return on Assets (ROA) of S&L companies in Ghana

$\boldsymbol{Ho_3}$**:** There exist a statistically significant relationship between Loans and advances to Deposit Ratio (LTDR) and Return on Assets (ROA) of S&L companies in Ghana

$\boldsymbol{Ho_4}$**:** There exist a statistically significant relationship between Non-Performing Loans Ratio (NPLR) and Return on Equity (ROE) of S&L companies in Ghana

$\boldsymbol{Ho_5}$: There exist a statistically significant relationship between Capital Adequacy Ratio (CAR) and Return on Equity (ROE) of S&L companies in Ghana

Ho_6: There exist a statistically significant relationship between Loans and advances to Deposit Ratio (LTDR) and Return on Equity (ROE) of S&L companies in Ghana

2.10. RESEARCH METHODOLOGY

"Research methodology is the models, procedures and techniques used to find the results of a research problem" (R. Panneerselvam, 2016, P.2)[112]. Research methodology has the aim to finalise the activities of research design and data collection procedure which includes: selection of research approach, the design of sampling plan, the design of the experiment, the design of the questionnaire, determination of sample size, the design of sample frame and execution of survey (R. Panneerselvam, 2016, P.592).

2.11. ETHICAL CONSIDERATIONS

According to Saunders et al. (2009)[113], the term ethical refers to the appropriateness of your behaviour concerning the rights of those who become the subject of your work, or are affected by it. Research ethics relates to the way one formulates and clarifies one's research topic, design one's research and gain access, collects data, processes and stores the data, analyses data and discloses the research findings morally and responsibly (Saunders et al., 2007:178)[114].

Different codes and considerations apply to different stages of the research, for example:

- **Negotiating access:** there is the need to establish credibility and respect participants' rights to privacy. A written letter sent to the companies informs them of the option to stay anonymous to ensure that the information will be confidential and for this study purpose only.

- **Ethical consideration during data collection, analysis and reporting:** according to Diener & Crandall (1978)[115], there are four main areas of ethical principles. Whether there is the harm in participants, whether there is an invasion of privacy and deception, since the research involves taking responses, we did the due diligence to maintain the privacy and confidentiality of the respondents. Respondents were under no obligation to

provide sensitive data or trade secrets. Personal data was kept secured and only used for the intended purposes.

2.12. SAMPLING FRAME

The sampling frame, which is, also called the working population, is a list of elements from which we draw a sample for a study (Zikmund et al., 2013 Pp.420). This study aims at drawing statistical inferences from the collected data, which makes probability sampling chosen as opposed to non-probability sampling (Saunders et al., 2007). In order to draw meaningful sampled companies, it was necessary to compile a list of all Savings and Loans Companies in Ghana. This comprehensive list of S&L companies will be used to generate a sample using rules of probability sampling where all population elements have a known and non-zero chance of being selected to form a study sample (Hair et al. 2007[116]; Saunders et al., 2007). This sampling approach minimises selection bias. In order to generate such a database, we took information from the Central Bank of Ghana, which is the regulatory body of all financial institutions in Ghana.

2.13. SAMPLING TECHNIQUE

In order to ensure bias minimisation and fair representation of the population, the researcher employed the probability-sampling technique. The sampling of the Savings and Loans Companies for this study was through the systematic random sampling method. Systematic sampling involves a random start and then continue with the selection of every Kth element from then onwards (where K = population size/sample size). The selection of respondents on the other hand was through the stratified random sampling technique. Under this sampling design, we divide the entire population into strata (groups) which are mutually exclusive and collectively exhaustive. By mutually exclusive, it means that if an element belongs to one stratum, it cannot belong to any other stratum. Strata are collectively exhaustive if all the elements of various strata put together wholly cover all the elements of the population. The elements, however, are selected using a simple random sampling independently from each stratum. The stratified random sampling is more efficient as compared to a simple random sampling because, dividing the population into various strata increases the representativeness of the sampling, as the elements of

each stratum are homogeneous to each other (Deepak Chawla & Neena Sondhi, 2016 p.257). The purpose of stratified sampling procedure is to ensure that the various subgroups (strata) in a population have representation on relevant sample characteristics to the exact extent that the investigator desire (Zikmund et al. 2013, Pp. 426). Another reason for selecting a stratified sample method is to ensure that the sample will accurately reflect the population based on the criteria used for stratification. The above reason is a vital concern because simple random sampling sometimes produces an out of proportion number of one group, or another and the sample ends up being less representative than it could be (Zikmund et al. 2013, P. 430).

The stratification was based on the roles and duties of the respondents. All respondents are in one way or the other involved in credit administration or decision-making of their respective companies, either at the branch level or at management level. In other words, the respondents have knowledge of credits and access to the company's financial reports.

2.14. POPULATION OF THE STUDY

Table 2.1 below shows the selected S&L companies with the population grouped into strata with the distribution of the population under each stratum. The 695 target population for the study was grouped into five strata. The strata were credit/ recovery officers (460), risk/compliance officers (27), credit managers (7), branch managers (154), and senior executives (47).

Table 2.1: Distribution of population by type of respondents (strata)

Strata	Pan Africa	First Allied	First African	First Ghana	WWBG	UniCredit	Beige	TOTAL
Credit/recovery	85	90	10	15	42	68	150	**460**
Risk /compliance	4	5	3	2	4	3	6	**27**
Credit manager	1	1	1	1	1	1	1	**7**
Branch manager	16	23	3	11	14	17	70	**154**
Senior executives	8	7	6	4	5	11	6	**47**
TOTAL	**114**	**126**	**23**	**33**	**66**	**100**	**233**	**695**

Source: research data

2.15. SAMPLE SIZE

There are several methods of determining the size of a sample. The various methods of determining sample size are as explained below:

Using or conducting a census survey

Census is desirable for small populations (usually less than 200) just because it eliminates sampling error, and providing data on all the individuals in the population.

Using a similar study sample size

One can replicate the sample size of similar studies in the planned research work but, without reviewing the procedures used in those studies, there will be the chance of replicating errors that were committed during the determination of the sample size for those studies.

Using Published tables

Another means of determining sample size is to rely on published tables that provide the sample size for a given set of criteria.

Using formulae in sample size determination

Tables can provide a useful guide for sample size determination, but it may at times be necessary to calculate the sample size for a different combination of levels of precision, confidence level, and variability. This study used the formula method in determining the sample size of both the S&L Companies and the respondents. The sampling involved two levels. The first level was determining the sample size of S&L Companies whereas the second level of the sampling has to do with determining the sample size of the respondents. The determination of the sample size of S&L companies was through a systematic sampling method. Systematic sampling involves a random start and then continue with the selection of every Kth element from then onwards

(where K = population size/sample size). Even though the calculation method was the sampling method used, the selection of the S&L companies took into consideration other criteria. The geographical coverage (covering at least three regions) regarding regional distribution, five or more years in business operation, Size of the company regarding assets, and the size of the loan portfolio were the other criteria considered for the selection. Out of the companies that met the criteria, only seven (7) savings and loans companies made available their financial statements to the researcher. The refusal of some companies to avail their data for the research probably may be due to policy issue or reasons best known only to the management of those companies. Table 2.2 below shows the criteria used for selecting the S&L companies for the study. Ghana has ten regional demarcations and any of the S&L companies having branches in the two largest business cities (Accra and Kumasi), qualified as a sample.

The seven (7) companies, which represent about 21% of the population of S&L companies included Pan African Savings and Loans (PASL), First Allied Savings and Loans (FASL), First African Savings and Loans, First Ghana Savings and Loans, Women's World Banking Ghana (WWBG), UniCredit Savings and Loans, and Beige Capital Savings and Loans companies limited.

Table 2.2: Criteria for the selection of the S&L companies

S&L Company	Regional coverage	Years in operation	Loan portfolio (GH¢)	Total assets (GH¢)
Beige	9	9	579,853,817	1,121,361,602
First Allied	8	21	172,321,981	491,449,971
UniCredit	7	10	94,388,930	488,182,009
WWBG	4	19	24,164,174	102,759,607
Pan African	5	9	32,837,569	41,378,379
First Ghana	7	11	7,934,223	17,895,812
First African	3	8	2,495,359	17,895,812

Source: field data

The researcher used a simplified formula for proportions provided by Yamane (1967:886)[117] in the calculation of the sample sizes for the various strata. The study made use of 95% confidence level and a margin of error of ±0.05. The formula for the calculation is as shown below:

$$\boldsymbol{n = \frac{N}{1 + N(e^2)}}$$

Where n = the sample size

N = the population

$\boldsymbol{e}$ = the margin of error

But, N = 695, $\boldsymbol{e}$ = 0.05

Therefore, $\boldsymbol{n = \frac{695}{1+695(0.05^2)} = \frac{695}{1+695(0.05^2)} \quad \frac{695}{2.7375} = 254}$

It implies that the sample size (n) for the study is 254. That is 254 out of the 695 staff of the seven (7) selected S&L Companies would have to respond to the questionnaire.

Proportionate Allocation Scheme

In this scheme, the size of the sample in each stratum is proportional to the size of the population of the strata. The allocation of the 254 respondents to each stratum was by using the proportionate allocation scheme formula below:

$$\boldsymbol{n_1 = n\left(\frac{N1}{N}\right)}$$

Where: n_1 = the sample size for the first stratum

n = the population of the stratum

N_1 = the sample size for the strata

N = the population of the study

For example; to calculate for the sample size for credit/recovery officers for Pan African Savings and Loans (PASL) company;

The population of the stratum, n = 85

The sample size of the strata, N_1 = 254

The calculation of the sample size for the credit/recovery officers for PASL will therefore be:

$$n_1 = 85\left(\frac{254}{695}\right) = 85(0.36) = 31$$

The credit/recovery officers for First Allied Savings and Loans will also be as follows:

$$n_2 = n\left(\frac{N1}{N}\right) = 90\left(\frac{254}{695}\right) = 90(0.36) = 32$$

Table 2.3 below shows the computed sample size subgroups (strata) under each savings and loans company.

Table 2.3: Distribution of sample size by type of respondents (strata)

Strata	Pan African	First Allied	First African	First Ghana	WWBG	UniCredit	Beige Capital	Total
Credit/Recovery	31	32	5	5	15	24	52	**164**
Risk/Compliance	1	2	1	1	1	1	3	**10**
Credit manager	1	1	1	1	1	1	1	**7**
Branch manager	6	8	2	4	5	6	25	**56**
Senior executives	3	2	2	2	2	4	2	**17**
TOTAL	**42**	**45**	**11**	**13**	**24**	**36**	**83**	**254**

Source: Researcher's computation

2.16. SOURCES OF DATA

The data source for the study was from both primary and secondary sources. The responses from the administration of the questionnaire to the employees' provided the primary data whereas the secondary data was from the annual financial statements of the selected savings and Loans companies. A compilation of data on Total Loans and Advances, Net Income/Profit after tax, Total Equity, Total Assets, Impaired loans and Total deposit was done in order to compute for the proxies of credit risk management and profitability.

The researcher also obtained some secondary data from documentary materials in the subsector which includes; Published reports of Bank of Ghana annual financial stability reports, publications by the international bodies such as World Bank and International Monetary Fund (IMF), newsletters and other printed materials such as newspapers, journals, textbooks, conference reports, articles, and training manuals.

2.17. INSTRUMENTS FOR DATA COLLECTION

The researcher used a descriptive survey for the study. The choice of this design was to provide a means to contextually interpret and understand the relationship between credit-risk management and profitability of S&L companies in Ghana. The primary data collection instrument used was a well-structured questionnaire. In order to obtain the right response, the questionnaire was administered to Credit officers, Credit managers, Risk and internal control officers, branch managers and senior executive officers of the selected savings and loans companies. The choice of these categories of the staff was because of their schedules, which involves credit administration.

2.18. DATA ANALYSIS TECHNIQUES

The data analysis techniques aspect of research method can generally be either quantitative or qualitative. In the quantitative research method, the emphasis is on the quantification of the collected data. We use quantitative research in a deductive approach to ascertain the relationship between theory and research, which focus on testing theory. It involves practices and norms of

the natural scientific model in positivism position and contains a view of social reality and external objective reality (Bryman and Bell, 2011, p.28)[118]

Qualitative research on the other hand emphasis on the words rather than quantifying the data. Inductive approach is what qualitative research use in finding the relationship between theory and research with the aim of generating theories. Qualitative research does not employ the combination of practices and norms of the natural science model. It, however, emphasises on the interpretivism option, which refers to the way an individual interprets the social world. It also includes the view of social reality as a constant changing property of the individual's creation (Bryman and Bell, 2011, p.27)

The current piece of research will utilise the quantitative method of data analysis. The IBM SPSS analytical software was used for the analysis of both the primary, and the secondary data. The analysis of these ratios was done in such a way that the proposed hypotheses could be tested. The second part of the analysis involved the analysis and interpretation of the responses from the survey. The analysis was done with the help of statistical tools such as Descriptive statistics, Correlation, ANOVA, Regression, and Factor analysis.

2.19. METHOD OF DATA PRESENTATION

Data presentation refers to the organisation of data into tables, graphs or charts so that we can derive logical and statistical conclusions from the collected measurements. There are three main methods of data presentation in research namely textual, tabular or graphical. The presentation of the data and results was carried out such that it answered the research questions and fulfills the set objectives of the study as well as testing the stated hypothesis. Tables, charts, graphs, and textual methods were used.

2.20. STUDY VARIABLES FOR THE SECONDARY DATA

According to Rosenberg (2009)[119], we use ROA and ROE as profitability indicators when the institutions do not receive subsidies. The savings and Loans companies in Ghana are all privately owned and do not receive any subsidy from the government. ROA measures the effectiveness of

assets usage by bank management to generate income. The problem with ROA as a measure is that it does not factor off-balance sheet items into the total assets. ROE as a measure of earnings per unit equity capital also has its shortcomings. ROE does not always indicate the exact position of the bank as it can have financial Leverage influence. Again, regulations also affect ROE. To compensate for the shortfalls of the two prominent profitability measures both Return on Assets (ROA) and Return on Equity (ROE) served as proxies for profitability. The independent variables, which are credit-risk management measures comprises of Capital Adequacy Ratio (CAR), Non-Performing Loan Ratio (NPLR), and Loans to Deposit Ratio (LTDR). Banks profitability depends on both internal and external determinants. This study took into consideration only internal determinants to avoid the possibility that other external factors influenced the relationship between credit risk and profitability. In an attempt to control the situation, there was the need to introduce a control variable. The control variable used was Bank size to classify between the large and small banks concerning the category susceptible to higher credit risk. Following the models used by Kaaya & Pastory, (2013), and Fan Li & Yijun Zou, (2014)[120], the researcher adopted bank size as the control variable. Researchers in previous studies use various measures for bank size, but the interchangeably used measure of bank size is the natural log of total assets (Shalit and Sankar, 1977)[121].

Table 2.4: Variable specifications

	VARIABLES	METHOD OF COMPUTATION
Dependent Variables	ROA	Net Income/ Total Assets
	ROE	Net Income/Total Equity
Independent Variables	CAR	Total Capital/RWAs
	NPLR	Loan impairment charges/Total Loans
	LTDR	Loans and Advances/Total Deposit
Control Variable	LNTA	Natural logarithm of total assets of bank

Source: researcher's study variables

2.20.1. Return on Assets (ROA)

Return on Assets of the company is the ratio of the net income to the total assets. It measures the efficiency of the banking company's management in generating profit out of its scarce resources. The higher the profit generated from the employed assets, the more efficient the company.

Mathematically,

$$\textbf{ROA} = \frac{\textbf{Profit after Tax (Net income)}}{\textbf{Total Assets}}$$

2.20.2. Return on Equity (ROE)

ROE is a measure of the company's efficiency at generating profit from every single unit of shareholders equity. ROE is a measure of profitability expressed as a percentage of company net worth. ROE ratio is an essential measure of a company's earnings performance. With ROE ratio, investors can ascertain how their invested money is being effectively utilised. The expectation is that the higher the ratio of equity to assets, the lower the demand for external funding and therefore the higher the bank profitability (Kosmidou, 2008).

Mathematically,

$$\textbf{ROE} = \frac{\textbf{Profit after Tax (Net income)}}{\textbf{Total Equity Capital (Total Shareholders fund)}}$$

2.20.3. Capital Adequacy Ratio (CAR)

According to Hassan and Bashir, (2003)[122], bank supervisors use capital ratio as a rule of thumb to measure the adequacy of a banking institution's level of capital. Zawadi Ally, (2014)[123] argues that a bank with highly capital adequacy is in the better position to use high technology such as ATM, online computer system, the opening of new branches and using of mobile banking which results in high efficiency and achievement of high profitability. CAR is the proportion of banks'

Tier1 and Tier2 equity (qualifying capital or equity) as a proportion of its risk-weighted asset (loans). Capital Adequacy ratio is an expression of a bank's percentage risk-weighted credit exposures. This ratio, implemented by Basel (1999)[124], is to protect depositors and promote the stability and efficiency of banking institutions around the world. There are two types of capital measurement: Tier1 capital, which absorbs losses without a bank being required to stop their trading business and Tier2 capital, which can absorb losses in the event of distress and so provides a lesser degree of protection to depositors.

$$\textbf{CAR} = \frac{\boldsymbol{Total\ Capital}}{\textbf{Risk-Weighted-Assets}} = \frac{\boldsymbol{Tier1+Tier2\ Capital}}{\textbf{Risk-Weighted-Assets}}$$

Total capital = Tier1 capital + Tier2 capital

Risk-weighted Asset is the asset of the bank weighted against the risk or the respective national regulators' minimum total capital requirement

Tier1 capital also referred to as core capital includes equity capital and disclosed reserves. Tier 1 capital caters for absorption of losses to prevent ending the trading of the bank.

Tier1 capital = (paid up capital + statutory reserves + disclosed free reserves) – (equity investment in subsidiary + intangible assets + current and brought forward losses).

Tier2 capital also caters for the absorption losses while winding up the trading activities of the bank. The bank depositors enjoy a lesser degree of protection during winding up.

Tier2 capital = (a) undisclosed reserves + (b) general loss reserve + (c) hybrid debt capital instruments and subordinate debts

When using weighted assets, $\textbf{CAR} = \frac{\boldsymbol{T1+T2}}{\boldsymbol{a}}$ **≥10%**

Maintaining CAR of ≥ 10% indicates the financial robustness of the bank, which in other words implies effective credit risk management. CAR ≤ 10% is a sign of financial weakness of the bank, which in turn means ineffective credit risk management. .

2.20.4. Non-Performing Loan Ratio (NPLR)

Non-performing loans are the total sum of all borrowed money upon which the debtor has not made payments as scheduled for at least 90 days. A non-performing loan is either in default or near to being in default. The term Default is the failure by a borrower to pay principal or interest on a loan when due. Brewer et al. (2006)[125] regarded NPLR, as a significant economic indicator. NPL implies a loss to the company, which requires provision. The profit takes care of the provision amount, and that reduces the profit margin. NPLR shows the level of banks' exposure to credit risk. A ratio of above 25% implies that the bank is getting into a weak credit risk control zone (Agborade, 2002 as cited in Tegegne Abera, 2018)[126].

Assets quality deterioration is a common cause of bank failure. Poor asset quality (NPL) can seriously jeopardise the financial position of a bank and adversely affect the operation of the bank (Lafunte, 2012)[127]. Assets quality deterioration distresses the performance and survival of banks (Mileris, 2012)[128]. Miller and Noulas (1997)[129] suggest that as the exposure of the financial institutions to high-risk loans increases, the accumulation of unpaid loans also increase and profitability would decrease. The quality of loan status has to be determined from time to time in order to differentiate between performing from non-performing loans.

2.20.5. Loans to Deposit Ratio (LTDR)

Loans to deposit ratio is a ratio between the bank's total loans and advances and total deposit. LTDR is a measure of the liquidity of the bank. LTDR indicates how efficiently the bank made use of depositors fund on credit activities, which is always at the mercy of default risk. LTDR indicates the ability of the bank to withstand the bank customers' withdrawal needs, and the readiness of the bank to meet the loan demands by reducing cash assets. Bank regulators utilise this ratio as a thumb rule to measure the adequacy of the banking institution's level of capital strength (Hassan & Bashir, 2003).

$$\textbf{LTDR} = \frac{\textbf{Total Loans and Avances}}{\textbf{Total Deposit}}$$

LTDR ≥ 1 means that the bank uses its mobilised deposits to provide loans to its customers without borrowing from outside to supplement.

LTDR ≤ 1 means that the bank borrows money to grant loans to its customers. Such a position leads to higher interest on loans compared to loans generated from deposit funds. Loans to deposit ratio greater than 1, means that the banks might not have enough liquidity to meet any unforeseen funding requirements or economic crisis.

2.20.6. Bank Size (LNTA)

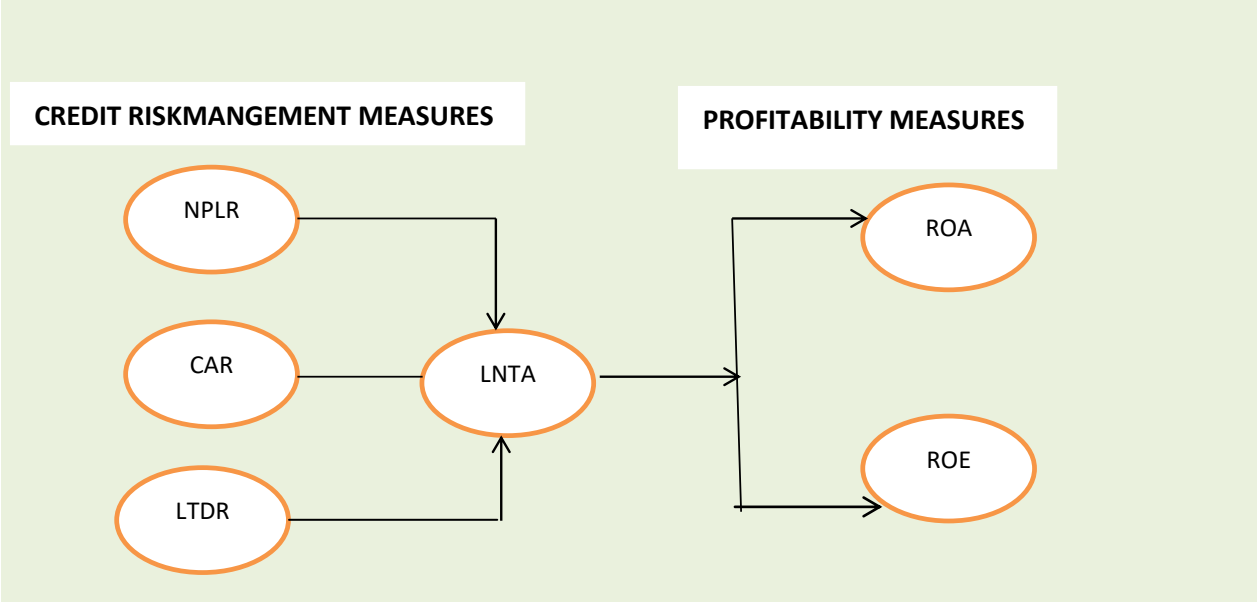
Nagaraju and Boateng, (2018) indicated that we could measure the size of a firm using its assets, sales, or employee strength. However, according to Saunders et al., (1990)[130], Bank size is usually measured by the natural log of the total assets (LNTA) of the bank, hence the higher the bank size, the higher its ability to absorb risk. We usually take Natural logarithm of the total assets before adding it into the model since we deflate the dependent variable (ROA) by the total asset. Large companies can manage better and put in place better financial structures. In the banking sector, potential economies and diseconomies of scale are generally captured using the size of the bank. Size (LNTA) therefore controls for the variations in cost, product, and risk diversification. According to Sufian and Chong, (2008), bank size may have a positive effect on bank profitability if there are significant economies of scale. However, if an increase in diversification results to higher risk, the variables may exhibit a negative effect. Bank Size = $\boldsymbol{In(TA)}$

2.21. THEORETICAL FRAME WORK OF THE STUDY

David H. Pyle (1997)[131] propounded a theory on risk management with emphasis on credit and market risks. The theory indicated that credit and market risks have directly or indirectly effect banks survival. This research work has adopted this theory as the researcher would expect the independent variables (i.e. CAR, NPLR, and LTDR) to influence the dependent variables (i.e. ROA, and ROE) since without effective and efficient credit risk management, banks profitability, liquidity and solvency are unthinkable (Pyle, 1997).

From Fig.2.1 below, it is evident that the model of this research stands on the foundation of credit risk management. This research has the objective to find out whether there exists a relationship between credit risk and profitability of savings & loans companies in Ghana. There was the need to quantify both credit risk and profitability in order to be able to disclose the relationship statistically. To achieve the above aim of the study, the two indicators for profitability and three indicators of credit risk management namely CAR, NPLR, and LTDR forms the foundation of the model. Profitability represented by ROA and ROE is the resultant of the credit-risk management indicators signifying its dependence on credit risk management. The bank size, act as the control variable in the model.

Fig.2.1: conceptual model of the study



Source: Researcher's illustration

2.21.1. Model Specification

The study is to adopt a panel data model previously used by Million Gizaw et al., (2015)[132] in their study on "the impact of credit risk on profitability performance of commercial banks in Ethiopia". They used Return on Assets (ROA), and Return on Equity (ROE) as their dependent variables whiles Non-performing Loan Ratio (NPLR), Loan Loss Provision Ratio (LLPR), Capital Adequacy Ratio (CAR) and Loan to Deposit Ratio (LTDR) were the independent variables. This study, however, used ROE and ROA as the dependent variables whiles, CAR,

NPLR, and LTDR were indicators of independent variables. Bank size was a control variable introduced in the model. Due to the two dependent variables (ROA, ROE), two different models were propounded for the analysis. The introduction of an error term (ε) into the model was to account for the unexplained variation in profitability by the credit risk management measures. Again, since the independent variables are more than one, a multiple linear regression was suitable for the analysis. The regression equation of the study will be:

$$\boldsymbol{Y_i = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu + \varepsilon}$$

Where;

Y_i = the dependent variable, β_o = constant term

β_1 = coefficient of the independent variable X_1

β_2 = coefficient of the independent variable X_2

β_3 = coefficient of the independent variable X_3

μ = the control variable, and **ε** = the disturbance or error term

The model for the study will therefore be in the same form of the regression equation as shown below:

Model 1: ROA = $\boldsymbol{\beta_o + \beta_1}$**CAR +** $\boldsymbol{\beta_2}$**NPLR +** $\boldsymbol{\beta_3}$**LTDR +LNTA**

Model 2: ROE = $\boldsymbol{\beta_o + \beta_1}$**CAR +** $\boldsymbol{\beta_2}$**NPLR +**$\boldsymbol{\beta_3}$**LTDR +LNTA**

Where;

CAR is capital adequacy ratio

NPLR is non-performing loan ratio

LTDR is loan to deposit ratio

LNTA is natural log of total assets (Bank Size)

2.22. PILOT TESTING

Galloway (1997)[133] suggests that a population of 5 to 10 per cent of the final sample is considered appropriate in any pilot testing. Twenty-eight (28) respondents, which represent 11% of the sample size of 254, (see table 2.5) were the sample size for the pilot testing for the determination of the reliability of the questionnaire

Table 2.5: Case-Processing Summary

		N	%
Cases	Valid	28	100.0
	Excluded[a]	0	.0
	Total	28	100.0

a. List wise deletion based on all variables in the procedure.

2.22.1. Measurement of Internal consistency reliability

Internal consistency reliability is an indicator of a measure's internal consistency applied not to one item, but to a group of items that measure different aspects of the same concept. Cronbach's coefficient alpha (α) measures the internal consistency reliability among a group of items combined to form a single scale. Cronbach's alpha reflects how well the different items complement each other in their measurement of different aspects of the same variable or quality (Cronbach, L.J., 1951)[134].

Cronbach's alpha internal consistency is Interpreted just like a correlation coefficient, when it is **≥ .70** is good.

- $\alpha \geq 0.9$ Excellent (High-Stakes testing)
- $0.7 \leq \alpha < 0.9$ Good (Low-Stakes testing)
- $0.6 \leq \alpha < 0.7$ Acceptable
- $0.5 \leq \alpha < 0.6$ Poor
- $\alpha < 0.5$ Unacceptable

Table 2.6: Reliability Statistics

Cronbach's Alpha	N of Items
.760	45

From the output of the reliability statistics, as presented in Table 2.6 above has a Cronbach alpha (α) of 0.760. Since the Cronbach alpha (α) = .76 the instrument is deemed suitable, and reliable for data collection. To ensure content validity of the questionnaire, the researcher solicited opinions from experts, academia, and industry for representativeness, and suitability of the questions. Suggestions and corrections from them helped to achieve both validity and reliability of the questionnaire.

2.23. OPERATIONAL DEFINITIONS

Credit: Credit in commerce and finance is a term used to denote transactions involving the transfer of money or other property on a promise of repayment, usually at a fixed future date. The transferor thereby becomes a creditor, and the transferee, a debtor; hence, credit and debt are merely terms describing the same operation viewed from opposite standpoints (Donald

L.2008)[135]. The transfer is temporal and is for a price called interest, which varies with the risk involved and with the demand for and supply of credit (Stiglitz and Weiss, 1981)[136].

NPL/NPA: the two terms are which are interchangeably used by finance experts refers to a classification for loans and advances which are in default or past due or in arrears for the scheduled payment of interest and principal (Investopedia). A past due loan repayment for 90 days or more is classified as NPL or NPA.

Risk: Risk has several definitions depending on the field or sector. Generally, risk is an uncertain event or condition that, if it occurs, affects at least one objective. In other words, risk is the probability or threat of quantifiable damage, injury, liability, loss, or any other negative occurrence caused by external or internal vulnerabilities, which we can avoid through preemptive action.

Risk in Insurance: A situation where the probability of a variable (e.g. burning down of a building property), is known but when a mode of occurrence or the actual value of the occurrence is not known.

Risk in Securities Trading: Risk in Trade is the probability of a loss or drop in value. Trading risk is of two categories: (1) systematic risk or market risk which affects all securities in the same class, linked to the overall capital-market system, and therefore cannot be eliminated by diversification. (2) Non-systematic risk, on the other hand, is non-market related. This type of risk also referred to as non-market risk, extra-market risk or diversifiable risk.

Economic Risk: It can manifest in lower incomes or higher expenditures than expected. The causes for economic risk can be many, for instance, the increase in the price of raw materials, the failure to meet deadlines for construction of a new operating facility, inter in production process, emergence of a competitor on the market, the loss of a very key member of staff, the change of a political regime or natural disasters.

Risk in Finance: Financial risk is the general term for many different types of risks related to the financial industry. These types of risk encompass risks involving financial transactions such

as loans to companies, and its exposure to loan default. The term financial risk is typically used to reflect an investor's uncertainty of collecting returns and the potential for monetary loss (http://www.investopedia.com). It is the possibility that an actual return on investment will be different from the expected return, and also takes into account the size of the difference. It includes the possibility of losing some or all of the original investment. In a view propagated by Damodara, risk includes not only "downside risk" but also "upside risk" (i.e. returns that exceeded expectations). Financial risk may at times be market-dependent, determined by numerous market or operational factors, resulting from fraudulent behaviour.

2.24. LIMITATIONS OF THE STUDY

Every human endeavour has its limitations, and this piece of work is of no exception. The first, and foremost of these limitations was money and time constraints. There was the need to travel to Ghana for data collection, but the scholarship from Indian Council for Cultural Relations (ICCR) does not cover the travelling expenses. Since the cost to and from Ghana was through the personal resources of the researcher, the data collection period could not be prolonged enough. The limited time of the study made it impossible to do extensive investigation about the subject matter of credit risk management. The researcher also faced difficulties during the data collection exercise as some of the institutions contacted refused to make their data available. Except for few, most of the S&L companies do not have their financial statements posted on their official websites. Ghanaian companies in general especially those that are not on the Ghana stock exchange are less transparent with information and the ownership of almost all the Savings and Loans companies in Ghana are by private investors and not listed hence the challenge. Because of unavailability of extensive data the study was limited to only six years (2011 – 2016).

2.25. CHAPTER SCHEME OF THE THESIS

Based on the objectives of the study, there was the need to organise the study is into five (5) chapters.

Chapter 1: Chapter one deals with the introduction to the topic. It starts with the financial system in Ghana, meaning and definition of banking, the overview and structure of the Ghanaian

banking system, reforms in the Ghanaian banking industry, and the emergence of the nonbank financial institutions in the banking industry. The rest of the chapter includes categorization of risks in banking, credit risk management and profitability.

Chapter 2: The second chapter consists of the literature review on credit risk management and profitability of the general banking industry and the research gap of the study. It also covers the problem statement, the significance of the study, the objectives, research questions, hypothesis, the research methodology used in the study and the ethical research considerations. The methodology includes; the research design, the population of the study, sampling frame, sampling technique(s), sampling size, sources of data, the method of data presentation, data analysis technique(s), the study variables, theoretical framework, model specification, pilot testing, layout of the thesis and operational definitions.

Chapter 3: The third chapter focuses on the profile of Ghana and the select savings and loans companies for the study

Chapter 4: The fourth chapter deals with the presentation, analysis and interpretation of the research data collected,

Chapter 5: The fifth chapter deals with the evaluation of the research thus - findings, conclusions, recommendations and suggestions. Bibliography and appendices followed.

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CHAPTER THREE

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THE PROFILE OF GHANA AND THE SELECT SAVINGS AND LOANS COMPANIES

CHAPTER THREE

3.1. PROFILE OF THE COUNTRY GHANA

Formerly referred to as the Gold Coast, Ghana attained its independence from the Great Britain on March 6, 1957 making it the first Sub-Saharan country to break free from colonial rule. Ghana was named after the great medieval trading empire known as "Gana", which was located northwest of the modern day Ghana until its demise in the 13th century.

Ghana is often referred to as the "Gateway to West Africa" and sometimes "Island of Peace" because of its location in one of the most Chaotic regions on the planet. Ghana is located in the West of Africa along the Atlantic Ocean and has a landmark area of 238,533 Square kilometer (92,098 miles) with a population of about 28.3 million people. Ghana shares its borders with Burkina Faso from the North, Togo from the East and La Cote D'Ivoire from the West.

The economy of Ghana is dominated by agricultural, which provides employment to an estimated 40% of the working population. Ghana is the second largest producer and exporter of Cocoa with its neighboring sister country La Cote D'Ivoire leading. Ghana in addition is a significant exporter of the following commodities Gold, Bauxite, Diamond, and Oil.

Kwame Nkrumah who was the Nation's founding President after nine years of ruling was overthrown in a coup d'état in 1966. The authoritarian decision of Nkrumah to make Ghana a one-party state, the restriction of political freedom, and jailing of political opponents without trial motivated his overthrown by the military. After Kwame Nkrumah was overthrown, Ghana went through a series of military rule with intermittent experiment of democratic rule, which were mostly truncated by military takeovers. The recent and most lasting democratic experiment started in 1992 and it is what has gained Ghana a recognition as a leading democracy in Africa. The country after its return to democracy in 1992 has been stable politically and economically. The country was politically demarcated into ten (10) regions but in 2018, six (6) more regions

were carved out of the existing ones bringing the regional demarcations to sixteen (16). The fig.1 below is the map of Ghana showing borderlines with its neighboring countries.

Fig.3.1: the map of Ghana

Source: Nations online

3.2. THE PROFILE OF THE SELECT SAVINGS AND LOANS COMPANIES

As at end of the year 2017, the Savings and Loans Subsector of the Ghanaian banking industry was made up of 37 Savings and Loans Companies. Out of that seven (7) were selected for the study based on some laid down criteria. The first criteria for the selection was the S&L companies which have been in operation for five or more years but, majority of them were recently incorporated and do not have enough data for the studies. Secondly, the S&L companies must have branches in the two cosmopolitan and business cities (Accra and Kumasi) which most of them did not have because they just started operations. The Seven (7) S&L companies, which represents about 19% of the total population of S&L companies included Women's World Banking Ghana (WWBG) Savings and Loans Company, Pan African Savings and Loans (PASL) Company Ltd., and First Allied Savings and Loans (FASL) Company Ltd. The rest are First African Savings and Loans Company Ltd., First Ghana Savings and Loans Company Ltd., UniCredit Savings and Loans Company Ltd, and Beige Capital Savings and Loans companies limited.

3.3. WOMEN'S WORLD BANKING GHANA SAVINGS AND LOANS

Women's World Banking Ghana (WWBG) S&L Company is an affiliate of the Women's World Banking global organisation that has a network of microfinance institutions and banks that work to help low-income entrepreneurs around the world. Women's world banking global is a non-profit organisation that provides strategic support, technical assistance and information to 40 independent microfinance institutions and banks across the world that offer credit and other financial services to low-income entrepreneurs with a particular focus on women in the developing countries. The WWB global network serves an estimated 24 million micro-

entrepreneurs in 28 different countries across the globe with 80 per cent of its customers being women. WWB global, an MFI provides lending services to low-income entrepreneurs and households in Africa, Asia, Latin America, Eastern Europe and the Middle East.

WWBG with a mission to meet the financial services needs of entrepreneurs in the small business sector with particular attention to women, ensure a good work environment that recognizes the value of its employees and provides an excellent return on investment to its shareholders. WWBG established first in Ghana as an NGO in 1988 but officially licensed and regulated by the bank of Ghana in 1996 and became operational in 1998 with the aim of serving small/micro business entrepreneurs with an affordable range of products and services, which are very suitable to meet the needs of its customers. Its deposit products involve savings, fixed deposit, and checking accounts. The S&L Company's loan products comprise of microbusiness, SME, Financial intermediaries, and consumer loans that encompass working capital loans for institutions and individuals in the micro, small and large micro-segment of the microfinance market, and personal loans for salaried workers in both public and private sectors, and trade finance. Among the services offered are virtual banking, inward remittances, and mobile banking. WWBG with its head office in the capital of Ghana has 13 branches.

3.4. PAN AFRICAN SAVINGS AND LOANS COMPANY LTD. (PASL)

In 2006, Accion international entered into an agreement with Ecobank (the leading independent regional bank in Africa) with support from the IFC to establish a microfinance institution as a medium to provide financial services to low-income entrepreneurs in both West, and Central Africa. As part of the agreement, Accion contributed technical expertise and leadership in the microfinance sector while Ecobank offered the opportunity to leverage its infrastructure and extensive network of banks to help standardise and deliver high-quality financial services across

the length and breadth of Ghana. By the close of the year 2006, Ecobank and Accion launched EB-Accion Savings and Loans Company Ltd. in Ghana. The shareholding position of the investors were; Ecobank 49%, Accion Investment SPC 30%, Ecobank Transnational Inc. (ETI) 6%, and International Finance Corporation (IFC) 15%.

The Company received its license from the bank of Ghana in 2008 and begun operation at two branches in the markets of 'Tudu' and 'Abeka Lapaz' all in Accra. Since launching lending operations, Pan African Savings and Loans have experienced significant growth, now serving clients through a network of branches and satellite kiosks. PASL has successfully launched a diverse suite of savings product to meet a variety need of its clients. Accion played a key role in conducting extensive quantitative and qualitative market research to determine client's savings needs and demand, which have contributed to the success of the deposit portfolio's initial growth. Accion provided extensive support to Ecobank in preparation for the launch of PASL including training for loan officers credit methodology and branch operations. With 16 branches and having a presence in five regions in Ghana, PASL has grown into a well-organised licensed deposit-taking company with a loan portfolio of around $9.4 million with 11,800 borrowers and more than 100,000 deposit accounts.

The company rebranded from EB-Accion to Pan African Savings and Loans Company Ltd. in August 2015. The rebranding event which marked a significant milestone in the history of the company was to reposition its brand in a more strategic manner towards achieving its vision of being "the leader in Microfinance in Africa" PASL is powered by the Ecobank group Microfinance which is represented in five countries thus Ghana, Sierra Leon, Cameroun, Burkina Faso and Nigeria. Their deposit products include Hybrid savings, fixed deposit, current (checking), and solidarity group accounts. Their loan products also include; micro express and micro plus loans, SME loan, Solidarity group loan, and Auto loan. Others include services such as mobile banking, mobile money, and domestic and international money transfer services.

3.5. BEIGE CAPITAL SAVINGS AND LOANS COMPANY LIMITED

Beige Capital Savings and Loans Ltd. (BCSL) licensed by the Bank of Ghana to commence operation as a microfinance institution in the year 2008. After four years of operation, it transitioned into an S&L company in 2012. Beige capital has since 2014 became the leading S&L companies among the over 30 such companies operating in Ghana.

Since its inception in 2008, the S&L Company has developed strong pillars, and structures, which has guaranteed the consistent growth of its business, thus placing them among the top tier brands within the S&L category of financial institutions in Ghana. In serving its clients, Beige Capital S&L combines the core banking business of credit and deposit mobilisation with business advisory services and relationship building. Due to their clearer understanding of clients' businesses, the institution has designed and developed products that are practical and suitable for its customers. Beige capital can now boost of over 70 branches nationwide with staff strength of over 1500 serving over 800,000 customers. Beige Capital S&L has personal banking products such as Flex personal account, Reward account, Reward Plus account, Beige baby account, Pesewa savings and Retirement planning. It also has packages for business institutions that include Contract finance, Fellowship Box, Flex business account, Office mortgage, Priority business account, Reward business account, Reward plus business account and offer business advisory services to its cherished customers. The institution also has a fixed term deposit, which is a short-term investment product that enables a customer to earn more yield than the ordinary savings account. The yield depends on the prevailing interest rate for a fixed term of 30, 60, 90, and 180 days. The invested amount can serve as collateral security against loans for customers who borrow from the company. In the medium term ending 2018, Beige Capital has a mission to acquire a universal banking license and seeks to be in the class of the best banks in Ghana.

3.6. FIRST ALLIED SAVINGS AND LOANS COMPANY LTD (FASL)

First Allied Savings and Loans (FASL) Company Limited is a leading S&L Company in Ghana the provision of financial services with a mission to provide convenient access to efficient, innovative, and responsive financial services to the SMMEs (small, micro, and medium enterprises) sector on a sustainable basis for the mutual benefit of all stakeholders. The vision FASL is to create an institution of excellence and be the leader in the provision of quality financial services to the sector of micro and small enterprise in Ghana over the years has consistently built a differential brand through its superior services and overwhelming customer support. FASL Being customer-centric institution cherishes the services of providing a broad range of convenient financial solutions to its customers promptly and at optimum convenience. Licensed by the BoG under PNDC law 328 (1993) was to provide banking services to its prospective customers. It started operation on 25 September 1996. FASL began from Adum Kumasi where its head office is situated and was set up to accept deposits from the general public and provide credit-related services to businesses and individual consumers. The growth of First Allied has been steady over the years from a single branch in 1996 to over twenty (20) branches in almost all the economic and commercial centres across the country. FASL through their networked branches across the country provides well-customised products and services targeted at meeting personal financial needs and growth of businesses. The institution earned its current enviable status as leading savings and Loans Company in Ghana through its relentless pursuit of customer-centred services and the continuous introduction of innovative products to its customers that are not accessible through the formal financial system. FASL has created financial inclusion for these marginalized SMEs and individuals by introducing the traditional "SUSU" ideology into mainstream banking. The introduction of the innovation attracted the World Bank, which conferred on FASL the most innovative product award in 2002. Apart from this, the institution has since its establishment won many other awards and recognitions from

several prestigious institutions for its excellent customer-centred products and services. Among some of the awards won by FASL are:

- International Star for leadership in Quality (ISLQ) award in Paris France on Monday 1 July 2013, the award organised by Business Initiative Directions (BID) of Spain was to recognise outstanding companies and leaders in the world of business who achieve excellence in quality delivery to their customers based on the QC100 Total Quality Management Model. An honour singularly went to FASL in the category of exemplary performance in financial product innovation and quality service delivery in micro, small, and medium enterprise sector in Ghana.

- Gold Awards: Ashanti Financial Services Excellence Awards in 2004, 2005, 2006, 2008, and 2010.

- Gold Award Winner at Ghana Business and Financial Services Excellence Awards in 2008 and 2011

- The most innovative product/ service Awards African – World Bank (African Project Development Facility) in 2002

- The most outstanding S&L Company – Ashanti Industry, Trade and Technology Awards in 2000 and 2001

- A prestigious member, Ghana Club 100

FASL offers the following products to its customers 'Susu' products, deposit products, and loan products.

Susu products offered include Golden Susu, Super Golden Susu and Community Lending. They offer the following deposit products; Allied Suppersave Account, Current account, Savings account fixed deposit account. They also offer loan products such as; commercial loans, equipment financing scheme, consumer credit, travel credit, clearance credit and Gospel loan.

3.7. UNICREDIT SAVINGS AND LOANS COMPANY LIMITED

UniCredit Savings and Loans is one of the leading savings and loans companies in Ghana licensed by the BoG under the Non-bank financial institutions' Act 2008 (Act 774). The company has its headquarters at No.3 North Ridge Lane Accra within the capital's cosmopolitan arena. Since the inception of UniCredit in 2007, its footprints on the financial and banking landscape of Ghana have been progressively distinct, currently with seventeen (17) fully networked branches in four regions of Ghana. Unicredit guided by its core values is to be caring, flexible, efficient, integrity, teamwork, accountability and show of professionalism. The driving force of the company is by the following objectives:

- To provide financial services through innovative deposit mobilisation and credit delivery strategies

- To develop and offer attractive products to meet the different needs of customers in both the formal and informal sectors

- To get in touch with clients as possible in its target market

- To help small savers and borrowers create wealth thereby improving the quality of their life.

- To offer business advisory services to micro, small, and medium scale entrepreneurs through training and counselling

UniCredit is of the vision to become the most efficient and effective S&L Company operating in the SME banking market. In addition to this UniCredit has a mission to develop financial products and services and make them easily accessible through:

- A comprehensive understanding of the market
- State of the art technology and systems
- Innovation, flexibility, and enthusiasm in meeting the needs of a challenging environment and
- Strong presence and easy accessibility

The company seeks to provide its cherished customers with convenient, tailored and reliable banking products and services through its state of the art IT infrastructure and dedicated team of professionals working across all its branches. .UniCredit has always kept its brand promise in going the extra mile to delight its customers, through a responsive and proactive way of handling the business needs of its customers. The company offers a range of personal, business and institutional financial solutions to deliver optimum value to its customers. The company offers to its customers the following products: U-check account (current account), U-kid account (savings for children), U-susu account, My church account (for churches), Executive save, U-trade (trade loan), U-cap (SME loan), Smart personal loan (salary workers), Premium plus accounts, U-clear (loan for clearing of goods at ports and harbour), E-banking, and Eazzlife (assets finance loan).

Other services offered by UniCredit to its clients include Western Union money transfer, Moneygram, Transfast and Ria money transfer, Business Advisory Services, Business planning, Financial planning, Stock management and Cash flow forecasts.

UniCredit is also committed to distinguishing itself through excellence, as is evidenced by its listing on the 2014 Ghana club 100 companies in Ghana. This recognition of the institution's

performance validates its focus on ensuring both productivity and operational vigilance to secure our customer's interests.

With a continuous branch expansion drive and the imminent launch of its electronic banking suite, UniCredit provides many reasons to own any of its deposit and credit products. The company’s staffs are ably equipped to address the banking concerns of its customers and provide guidance towards the realisation of the personal and business financial goals of its cherished customers.

3.8. FIRST GHANA SAVINGS AND LOANS COMPANY LIMITED

FGSL is a Non-banking financial institution licensed under the Banking Act, 2004 (Act 673) to carry on the banking business of Savings and Loans. FGSL assumed the assets and liabilities of First Ghana Building Society, which was established in 1956 under the Building Societies ordinance of 1955. FGSL has its head office in Accra, Osu with ten branches in all the regional capitals of Ghana. The building Society in 2006, transformed into a limited liability company in order to become more competitive and adapt to technological and economic changes in Ghana. The BoG subsequently licensed FGSL as a Non-Bank financial institution under the Banking Act, 2004 (Act 673) and Non-bank financial institution Act 2008 (Act774) at the moment FGSL is a subsidiary of National Investment Bank with 90% shares and the rest owned by the Ministry of Finance and other individual investors. FGSL products and services include Special fixed deposit with a high yielding fixed term investment account made for 3, 6, and 12 months, Fixed deposit, Call deposit, Savings account, Loans, Auto loan, SME loans Mortgage loans, Housing microfinance loan, Salary advance loans, Personal finance loans and western union money transfer

3.9. FIRST AFRICAN SAVINGS AND LOANS COMPANY LIMITED

First African Savings and Loans Company limited belong to First African group limited with its head office in Accra Ghana. It started as a remittance company under the name First African Remittance until its operational activities were widened to include the provision of loan and deposit taken services to the general public in 2009. First African Savings and Loans have many years of experience in banking offering its services to individuals and businesses for many years. First African S&L has grown over the years by acquiring offices in Kumasi in the Ashanti region and Takoradi in the Western region where it carries out its core banking functions to its numerous customers. The company offers the following banking products: Fixed deposit, Savings account, Current account, Susu account, Burger account, Champion Kiddy account, Remittance, Trade finance, Business loan, Group loan, Salary loan and Remittance loan

The company's remittances services have also grown tremendously over the years leading to expanding its offices in the United Kingdom, United States of America and Germany with agents spread across these countries. The company has over the years in the remittances market introduces low commission rates thereby giving real value to its customers who send money through the first African group. The company has a long-standing arrangement in place with Ghana commercial bank making it possible to provide a nationwide payment collection centres across the country. They have this same arrangement with all the major banks in Ghana. Customers who transact remittance business with First African group have associated the company with seamless, fast, reliable and very efficient services. Because the company has the habit of listening to its customers, it has maintained its customers for decades by improving its services and introduction of innovative products, and services. First African offers money

transfer services across the world through a partnership agreement with Ria Money transfer, Xpress Money, and Herbon Envious. With low fees and trusted, reliable services, the company has always been the preferred choice for most people with money transfer needs to Ghana. They also undertake instant money transfer to bank accounts in both Cedis and Euros. They again make direct payment of school fees to bank accounts of schools, colleges and universities and offer transfer to all banks in Ghana.

CHAPTER FOUR

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DATA ANALYSIS AND

INTERPRETATION

CHAPTER FOUR

4.1. DATA ANALYSIS AND INTERPRETATION

This study intends to analyse the effect of credit risk management on the profitability of savings and loans subsector of the Ghanaian banking system. Secondary data obtained from the annual financial reports of the selected S&L Companies. A questionnaire structured in both nominal and Likert scale was used to collect the primary data from employees who have direct role in the credit administration of their respective companies. Both the primary and secondary data were processed with the aid of IBM SPSS statistical software to be able to make meaningful inferences.

The data analysis and interpretation was done in two parts. The first part was the analysis and interpretation of the computed ratios of profitability and credit-risk management indicators. The analysis of these ratios was done in such a way that the proposed hypotheses could be tested. The second part of the analysis involved the analysis and interpretation of the responses from the survey. The analysis was done with the help of statistical tools such as Descriptive statistics, Correlation, ANOVA, Regression, and Factor analysis. The presentation of the data and results was carried out such that it answered the research questions and fulfills the set objectives of the study as well as testing the stated hypothesis. Tables, charts, and graphs were used.

4.2. ANALYSIS AND PRESENTATION OF THE SECONDARY DATA

The analysis of the secondary data was further done in two parts. In the first part, the researcher used tables and graphs for trend analysis of the NPL ratio and the profitability indicators (ROA and ROE). The second part of the analysis of the computed ratios involves the relational analysis of the proxies for profitability and the credit risk management variables using correlation and multiple regression.

4.2.1. Trend Analysis of the Non-Performing Loan Ratios (NPLR)

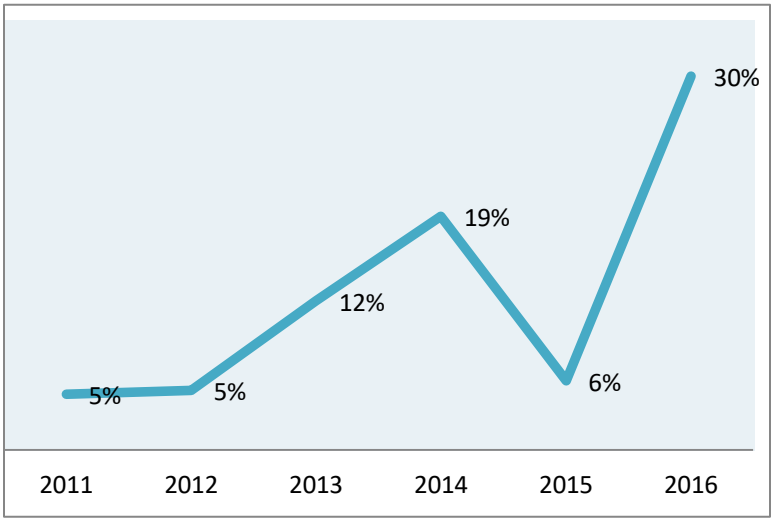
The nonperforming loans constitute the primary cause of credit risk. The NPL ratio indicates the portion of the outstanding loans that are not performing. When a loan is nonperforming, it implies that the repayment of both interest and principal has ceased which reduces the revenue of the financial institution. The table 4.1 and fig. 4.1 below indicates the average trend of the nonperforming loan ratios of the selected S&L companies over the study period.

Table 4.1: Aggregate Mean Scores of NPLR

YEAR	2011	2012	2013	2014	2015	2016
NPLR (%)	5	5	12	19	6	30

Source: Annual reports

Fig. 4.1: Graphical Trend Presentation of Average NPL Ratios



Source: Annual reports

Interpretation: The NPLR trend as shown in table 4.1 and fig. 4.1 gives a very unattractive picture of the Savings and Loans Companies in Ghana. The non-performing loans ratio within the space of six years increased from 5% to an unacceptable rate of 30%, which is far above the

acceptable industry NPL benchmark rate of 5%. The rate was within the acceptable rate between 2011 and 2012 but rose to 12% in 2013 and further shot up to 19% in 2014. It dropped to 6%, which was 1% above the acceptable industry benchmark rate. However, it escalated to 30% in 2016. This escalation may not only be due to internal characteristic factors but also external forces. For example, in the year 2011, the GDP growth rate was 14.1% whiles inflation rate was 8.7 and that might have contributed to the performance of loans. The GDP growth rate kept on declining whiles the inflation rate also kept on increasing year after year. The GDP declined from 14.1% in 2011 to 3.5 in 2016 whereas the inflation rate increased from 8.7% in 2011 to 17.5% in 2016. It indicates that the macroeconomic factors had effects on the performance of loans of S&L Companies in Ghana.

4.2.2. Comparing Non Performing Loans with the Profitability Indicators

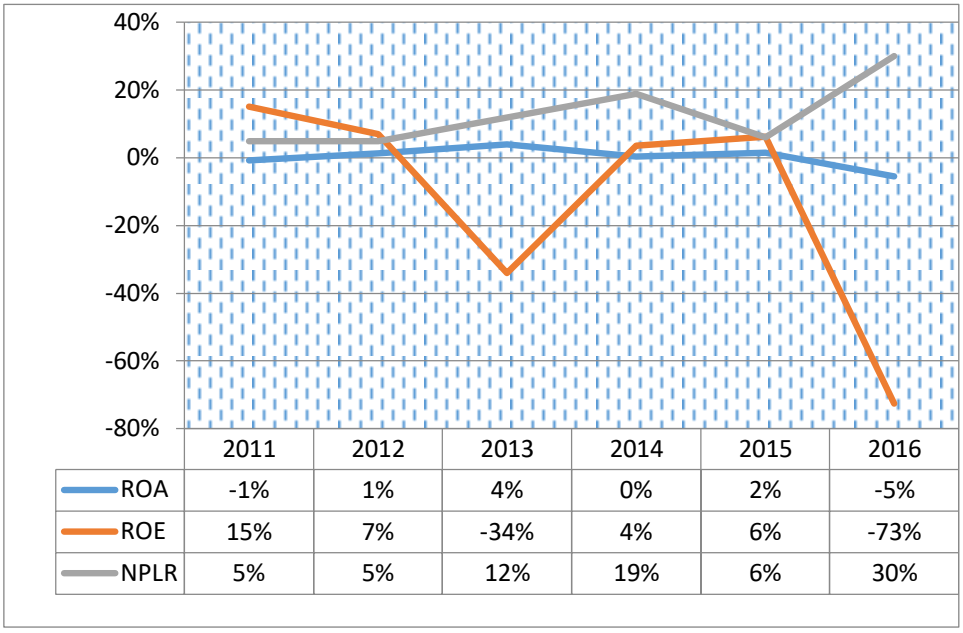
Since nonperforming loans affects the revenue of the banking institutions, a comparison between the NPL ratios and the profitability indicators to examine the effect of NPL on the profitability. The table 4.2 and fig. 4.2 shows the trend.

Table 4.2: Average Ratios of NPL, ROA and ROE

VARIABLES	2011	2012	2013	2014	2015	2016
NPLR	5%	5%	12%	19%	6%	30%
ROA	-0.73%	1.29%	4.02%	0.40%	1.62%	-5.47%
ROE	15.09%	7.07%	-34.02%	3.52%	6.33%	-72.51%

Source: Annual reports

Fig.4.2: Comparison between NPLR and profitability indicators



	2011	2012	2013	2014	2015	2016
ROA	-1%	1%	4%	0%	2%	-5%
ROE	15%	7%	-34%	4%	6%	-73%
NPLR	5%	5%	12%	19%	6%	30%

Source: Annual report

Interpretation: The trend as indicated in table 4.2 and fig. 4.2 paints a clumsy picture of the NPL indicator of the Savings and Loans Companies during the study period. The non-performing loans ratio within the space of six years increased from 5% to an unacceptable rate of 30% far above the acceptable industry rate of 5%. The S&L companies for regulation reasons cannot undertake some commission-based activities, and that makes them rely heavily on interest income from loans. It is therefore not surprising that both indicators of profitability (ROA, ROE) declined drastically with the most affected being the ROE. The ROA in 2011 was -.73%, which rose to 1.29% and 4.02% in 2012 and 2013 respectively. The ROA further reduced to .40% in the years 2014, rose to 1.62% in 2015 but eventually declined to -5.47% in 2016. The ROE, on the other hand, declined from 15.09% in 2011 to 7.07% in 2012. The yield worsened to -34.02% in 2013 but rose to 3.52% in 2014 and increased further to 6.33% in 2015. It however drastically decreased to -72.51% in 2016. The return on assets and equity are both dependent on the net income, which is also dependent on the interest income. However, because the loan quality deteriorated over the study period, it affected the net income and that translated into a decline in the profitability of the S&L Companies. Fig.4.2 shows the graphical presentation of the

comparison between the three ratios. It is evident that when the NPLs worsen, the profitability ratios also declines and vice versa.

4.2.3. Comparing CAR with Profitability Indicators

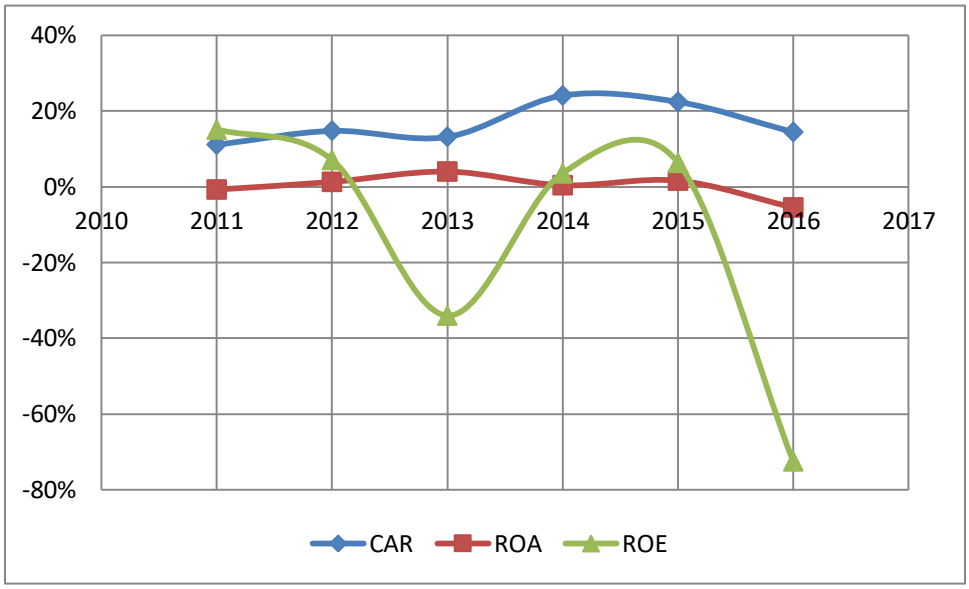
Capital adequacy is a measure used by banking supervisors to measure the adequacy of a banking institution's level of capital. A bank with adequate capital is in a better position to use high notch technology, and opening of new branches, which results in high efficiency, and achievement of high profitability (Zawadi Ally, 2014). Table 4.3 and fig. 4.3 shows the comparison between the CAR and profitability over the study period.

Table 4.3 average ratios of CAR and Profitability Indicators

Variables	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
CAR	11%	15%	13%	24%	22%	14%
ROA	-0.73%	1.29%	4.02%	0.40%	1.62%	-5.47%
ROE	15.09%	7.07%	-34.02%	3.52%	6.33%	-72.51%

Source: Annual reports

Fig. 4.3: Comparison between CAR and profitability indicators



Interpretation: the capital adequacy ranged between 11% and 24% in the cause of the study period, which was above the required 10%. In the year 2011 when the CAR was 11%, the ROA was -.73% whiles ROE was 15.09%. When the CAR increased to 15% in 2012, ROA improved to 1.29% whereas ROE declined more than half to 7.07%. The average CAR in 2013 declined to 13% which resulted to a corresponding increase in ROA to 4.02% but the ROE drastically declined to -34.02%. The CAR in 2014 increased to 24%, which had a corresponding increase in ROE to 3.52% but resulted in a drastic decline in ROA to .04%. There was a reduction in CAR in 2015 by 2% to 22% but both profitability measures, ROA and ROE increased to 1.62% and 6.33% respectively. In 2016, the CAR in 2016 declined to 14%, which declined in ROA to -5.47% and ROE to -72.51%. It can be observed from the ratios that even though the CAR during the study period were above the minimum required 10% which even doubled in 2014 and 2015 but the profitability indicators kept on fluctuating throughout. This means that CAR though indicates the financial robustness of the banking institution it does not guarantee profitability. Management of S&L Companies should therefore look at other factors such as the level of NPL, which undermine the income generation ability of the institution.

4.2.4. Comparing LTDR with Profitability Indicators

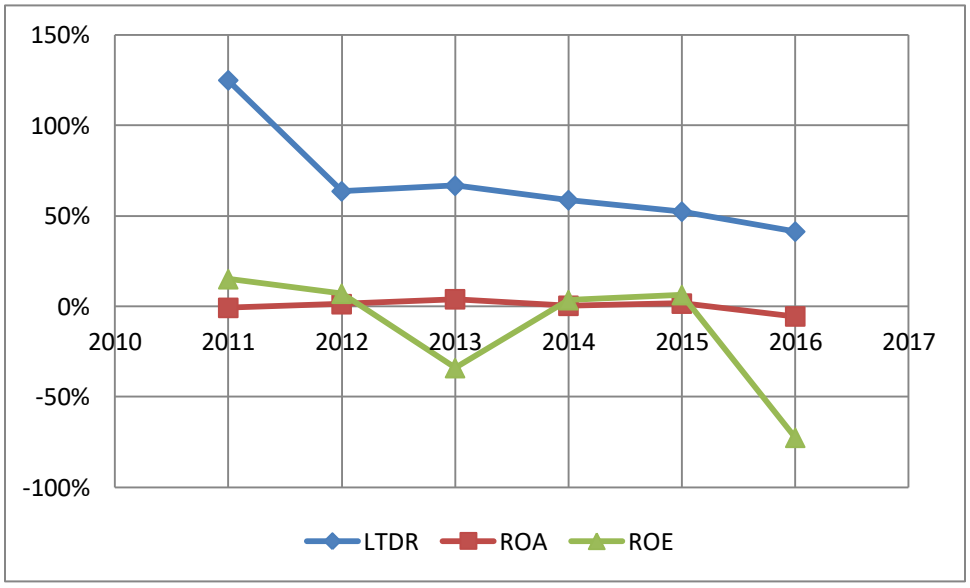
The LTDR, which is a measure of the level of liquidity of a bank, indicates how efficiently management utilise depositors funds on meeting credit demands by reducing cash assets. However, these funds are always exposed to default risk therefore, when the loans do not perform, profitability will be affected.

Table 4.4: Comparison between LTDR and profitability indicators

Variables	2011	2012	2013	2014	2015	2016
LTDR	125%	64%	67%	59%	52%	41%
ROA	-0.73%	1.29%	4.02%	0.40%	1.62%	-5.47%
ROE	15.09%	7.07%	-34.02%	3.52%	6.33%	-72.51%

Source: Annual reports

Fig. 4.4: Comparison between LTDR and profitability indicators



Interpretation: In 2011, the LTDR was as high as 125% but declined over the study period to 41% in 2016, which might have contributed to the decline in profitability indicators over the study period. The ROA started on a negative note (-.73%) in 2011 which showed improvement in the subsequent years but declined to -5.47% in 2016. The ROE in 2011 was 15.09% but kept on declining over the years until it touched -72.51% in 2016.

4.2.5. Comparing Bank size with Profitability Indicators

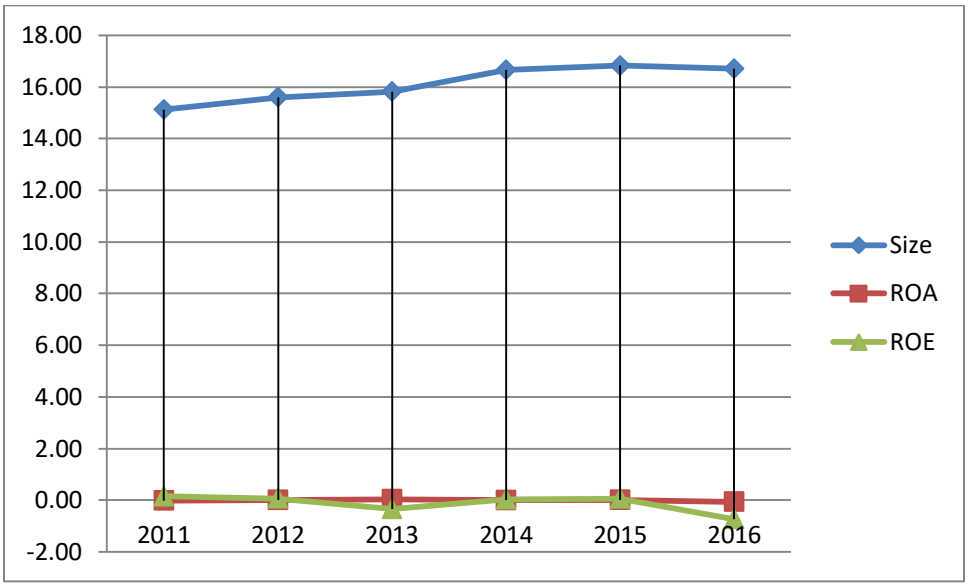
Bank size (natural logarithm of total assets) is an indication of expansion in a banking institution. The bigger the size of the bank, the higher its ability to absorb risk. Larger banks are able to manage better and put in place better financial structures. According to Sufian and Chong (2008), bank size may have a positive effect on bank profitability if there are significant economies of scale. However, if an increase in diversification result to high risk, it will have a negative effect on the profitability of the bank.

Table 4.5: Comparison between Size and profitability indicators

VARIABLES	2011	2012	2013	2014	2015	2016
Size	15.12	15.60	15.82	16.66	16.82	16.70
ROA	-0.73%	1.29%	4.02%	0.40%	1.62%	-5.47%
ROE	15.09%	7.07%	-34.02%	3.52%	6.33%	-72.51%

Source: Annual reports

Fig. 4.5: Comparison between LNTA and profitability indicator



Interpretation: table 4.5 and fig. 4.5 shows the comparison between the size of the size of S&L Companies and the profitability indicators. Size of the Companies hovered around 15.12mn and 16.82mn during the study period, which shows an increase in size however, the profitability performance was not encouraging. The probable reason to this incommensurable relationship between the variables may be attributed to diseconomies of scale.

4.3. MULTIPLE REGRESSION ANALYSIS

The researcher computed ratios from the financial statements of the Sampled S&L companies over the six years study period and used the IBM SPSS software to conduct a multiple regression analysis of the computed ratios. The researcher adopted a multiple regression for the analysis since it is suitable when one wants to investigate the predictive ability of a set of independent variables on one continuous dependent variable. According to Julie Pallant (2005, P.95-96)[1], multiple regression also allows for the comparison of the predictive ability of a particular independent variable, and to find the best set of variables to predict a dependent variable. Multiple regression is not just one analytical technique but also a family of techniques for

exploring the relationship between one continuous dependent variable and a number of independent variables or predictors. A multiple regression addresses research questions such as the following:

1. How a set of variables well predict a particular outcome

2. Which variable in the set of variables is the best predictor of an outcome and

3. Whether a particular variable can still be able to predict an outcome when we control the effects of another variable

In order to achieve the first objective of the study and to be able to test the set hypotheses, the regression analysis of the secondary data was done in two parts. The first part was a multiple regression analysis conducted to investigate the relationship between credit-risk management indicators and profitability measured by ROA. The second part was a multiple regression analysis to investigate the relationship between the credit risk-management indicators and profitability measured by ROE.

4.3.1. Normality test

Before running regression analysis on any data set, the data must be normally distributed. The normality test conducted for both models indicated that the variables were all normally distributed. A histogram and a P-P Plot as indicated in Appendix 3 showed that the data set was normally distributed.

4.3.2. Multicollinearity test

This test is another important test that we perform to rule out the presence of multicollinearity. Thus, multicollinearity is a situation where the explanatory variables are nearly linear dependent. Tables 4.3 and 4.4 below are the correlation matrixes for both models (1&2). Usually, researchers prefer correlation among all variables not exceeding 0.8 of which none of the interrelationships between the variables exceeded. The highest correlation coefficient among variables in model 1 was between ROA and NPLR, which was -.718, but since it is not above

0.8, it is an indication that, model1 lacks multicollinearity. Table 4.4 is the correlation matrix for model 2. The results indicated that the highest correlation among the variables was between NPLR and ROE, which was -.790 and since it does not exceed 0.8, we can conclude that there is no presence of multicollinearity in model 2. The researcher, therefore, retained all the variables in both models for the analysis.

Table 4.6: Results of Collinearity Statistics (Variance Inflation factor)

VARIABLES	TOLERANCE ($1 - R^2$)	VIF ($1/1-R^2$)
CAR	0.985	1.016
NPLR	0.908	1.101
LTDR	0.965	1.036
LNTA	0.928	1.078

Source: Researcher's computations

To further prove the absence of multicollinearity, Tolerance Value and Variance Inflation Factor (VIF) are used to confirm the presence or otherwise of multicollinearity. Tolerance, on the other hand, is an indicator of how much of variability of the specified independent variable is not, explained by other independent variables in the model, which is calculated as $1 - R^2$ for each variable. If each value is very small (less than 0.10), it indicates that the multiple correlations with other variables are high, suggesting the possibility of the presence of multicollinearity. VIF is the inverse of the Tolerance Value (1/tolerance) and any value above ten (10) will be a cause to worry, as it will mean that there is a presence of multicollinearity (Julie Pallant, 2005, P. 150). The collinearity statistics (table 4.3) shows tolerance values of more than 0.1 and a VIF value of less than 10 indicating the absence of multicollinearity since the rule of thumb is that tolerance values should not be less than the cutoff point of 0.1 and VIF values also not more than the cut-off point of 10.

Table 4.7: Correlation Matrix for Model 1

		ROA	CAR	NPLR	LTDR	LNTA
Pearson Correlation	ROA	1.000				
	CAR	-.011	1.000			
	NPLR	-.718	-.070	1.000		
	LTDR	.140	.037	-.177	1.000	
	LNTA	.132	-.078	-.246	.089	1.000

Source: Annual reports

Table 4.4 indicates the correlation between the variables of Model 1 where the return of Assets (ROA) was the dependent variable. Capital adequacy (CAR) negatively related with ROA indicating that the higher the reserved capital, the lower the return on assets. Nonperforming loan ratio, which is a measure of the quality of the loan portfolio, related negatively with return on assets of the S&L Companies. The implication here is that when the quality of the loan portfolio deteriorates, profitability is affected. This was expected since loans are the source of profit for banks. The ratio of loans to deposit (LTDR) on the other hand related positively though not all that significant. What it means is that when depositors' money is efficiently utilised to finance credit activities profitability increases. Bank size (LNTA) also had a positive relationship with return on assets. That means if there is significant economies of scale larger banks are more profitable.

Table 4.8: Correlation Matrix for Model 2

		ROE	CAR	NPLR	LTDR	LNTA
Pearson Correlation	ROE	1.000				
	CAR	.265	1.000			
	NPLR	-.790	-.070	1.000		
	LTDR	.144	.037	-.177	1.000	
	LNTA	.249	-.078	-.246	.089	1.000

Source: Annual reports

Table 4.4 is a correlation matrix for the second model, with return on equity (ROE) as the dependent variable. Capital adequacy ratio (CAR) related positive with return on equity meaning the higher the CAR the profitable the bank. The finding agrees with the assertion of Zawadi Ally (2014) who argues that a bank with highly capital adequacy is in the better position to use high technology such as ATM, online computer system, the opening of new branches and using of mobile banking which results in high efficiency and achievement of high profitability. Nonperforming loan ratio (NPLR) related negatively with a correlation coefficient of -.790 which is quiet significant. The implication here is that when loans are not performing it affect profitability of banks hence the need to put in place adequate credit risk management measures to avert deterioration of portfolio quality. Loan to deposit ratio related positively with ROE meaning when deposit from customers which are used to finance credit activities are efficiently put to use profitability measured by ROE increases. Bank size again related positively with ROE since the larger the bank, more diverse the bank can be. Large companies can manage better and put in place better financial structures to increase profitability.

4.3.3. Ratio of Cases to Independent Variables

The cases-to-IVs ratio has to be substantial else the solution will be perfect and meaningless. The required sample size for regression analysis depends on a number of issues including the desired power, alpha level, number of predictors, and expected effect sizes. In order to achieve acceptable regression results, there is the need to include the right number of cases in the model. According to Tabachnick & Fidell (2018, p.159)[2], the simple rule of thumb for testing multiple correlations is as shown below:

$$N \geq 50 + 8m$$

Where; N = number of cases and, m = number of independent variables

To test for individual predictors, the rule of thumb is

$$N \geq 104 + m$$

These rules of thumb assume a medium-size relationship between dependent variable and independent variables, $\propto$ = **.05** and $\boldsymbol{\beta} = .\mathbf{20}$. In case you are interested in both the overall correlation and the individual independent variables, then you need to calculate both ways and choose the larger number of cases. The most recent suggestion by Khamis and Kepler (2010)[3], indicates that when using reliability as a criterion and power estimates are not feasible, the formula for suggested minimum sample size is

$$N \geq 20 + 5m$$

When the data is not normally distributed then a higher cases-to-independent variable ratio is required as a substantial measurement error is likely to occur from less reliable variables. Since

the data for this study is distributed normally (see Appendix 4), the researcher used the minimum cases-to-independent variable ratio formula propounded by Khamis and Kepler.

$$N \geq 20 + 5m$$

$$N \geq 20 + 5(4)$$

$$therefore, N \geq 40$$

In this study, the cases-to independent variable ratio was 46, which is above the calculated required minimum number of cases per IV as shown from table 4.6 below

4.3.4. Descriptive Statistics of the Variables

Table 4.9: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ROA	46	-.440	.219	.00267	.080964	-3.470	.350	21.106	.688
ROE	46	-5.502	.941	-.19935	1.105170	-3.943	.350	15.943	.688
CAR	46	-.103	.449	.16283	.124262	.318	.350	.480	.688
NPLR	46	.008	1.856	.12709	.314329	4.515	.350	22.022	.688
LTDR	46	.188	5.228	.69200	.740201	5.336	.350	32.662	.688
LNTA	46	15.121	20.838	1.7936	1.400680	.152	.350	-.776	.688
Valid N (listwise)	46								

Source: Annual reports

In order to provide a clear picture of credit risk management and profitability indicators considered for the study, a descriptive statistics namely: Mean, Standard Deviation, Minimum and Maximum, Skewness and Kurtosis were computed for the seven sampled S&L companies

from 2011 – 2016. The ROA for the S&L companies ranged from -0.440 to 0.219 with a mean of 0.00267 (0.3%). It is an indication that even though some of the institutions make as much as 21.9% ROA, most of them too do not realise much returns from the utilisation the assets of these S&L companies. The recording of negative ROA by some of the companies is because loans constitute a more significant portion of their assets. Return on shareholders' equity (ROE) also ranged from -5.502 to 0.941 with a mean of -0.19935. The implication is that although some of the S&L companies were able to record 94.1% ROE, most of them recorded -550% ROE hence the average ROE of -19.9%. Average CAR was 0.16283 (16.3%) which is an indication that most of the S&L Companies adhere to the minimum capital requirement of 10% and financed by approximately, 16.3% shareholders' equity. NPL ratio ranged from as low as 0.008 to 1.856 with an average of 0.12709 (12.7%). It implies that averagely 12.7% of loans disbursed by S&L Companies in Ghana become non-performing. The findings confirm the quarterly report by the Central Bank of Ghana, which indicated that NPLR for the entire banking industry was 17.7% in 2016, which declined to 12.2% in June 2017. LTDR also has a minimum value of 0.188 (18.8%) and a maximum of 5.228 (522.8%). It means that some of the S&L companies gave out 18.8% of their deposit as loans and others too gave as high as 522.8%, which is very scary. Any default will bring about liquidity problem that can create panic and subsequently a run on the bank. However, the overall average LTDR of 0.69200 (69.2%) is far below the ideal industry ratio of between 80% and 90%. Bank size of the S&L companies ranged from 15.121 to 20.838. It means that there are no much variations in size of S&L companies.

4.4. REGRESSION RESULTS OF MODEL 1

4.4.1. Model Fit for Model 1

The traditional means of assessing the performance of a regression model is by considering the coefficient of determination (R^2). The R^2 shows the amount of variation in the dependent variable explained by the independent variables. It implies that the higher the value, the better. The regression results from table 4.7, indicates that there is the existence of the relationship between the dependent variable (ROA) and the independent variables. The model is well fitted with a 52.2% ability to influence the performance of the S&L companies in Ghana. An

implication that credit-risk management indicators (CAR, LTDR, NPLR and LNTA), jointly predict 52.2% variation in profitability (ROA).

Table 4.10: Model Summary of model 1

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.722[a]	.522	.475	.058664

a. Predictors: (Constant), Natural log of total assets, Capital Adequacy Ratio, Loans and Advances to Total Deposit, Non-Performing Loan Ratio b. Dependent Variable: ROA

To further cement the fitness of the model, the F-statistics is used. Usually when the overall probability (P) value (Prob>F) ranges between 0.00 and 0.05, then the model is strong and possess a high predictive power which can be replicated in other studies. Table 4.8 below shows that F-statistics value is 11.179, which exceed the F-distribution table value, F (4, 41) at 5% significance level of 2.61. Hence, the regression model as a whole is significant. It means that credit risk management indicators; (NPLR, CAR, and LTDR), reliably predicts ROA. The P-value (significance) of 0.000 which is less than 0.05 further proves that there exists a significant relationship between profitability and the credit risk management indicators (NPLR, CAR, and LTDR).

Table 4.11: ANOVA Table for Model 1

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.154	4	.038	11.179	.000[a]
	Residual	.141	41	.003		
	Total	.295	45			

a. Predictors :(Constant), Bank Size, CAR, NPLR, LTDR b. Dependent Variable: ROA

4.4.2. The Regression Equation for model 1

Table 4.9 presents the regression analysis using ROA as the independent variable. Using the unstandardized coefficients of the variables, the regression equation for model1 becomes

ROA = 0.89 - 0.044CAR - 0.189NPLR + 0.002LTDR - 0.003LNTA

Table 4.12: Regression results of Model 1

Model 1	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
(Constant)	.089	.119		.750	.458	-.151	.330			
CAR	-.044	.071	-.067	-.615	.542	-.187	.100	-.011	-.096	-.066
NPLR	-.189	.029	-.733	-6.47	.000	-.248	-.130	-.718	-.710	-.698
LTDR	.002	.012	.018	.160	.873	-.022	.026	.140	.025	.017
LNTA	-.003	.006	-.055	-.489	.627	-.016	.010	.132	-.076	-.053

a. Dependent Variable: Return on Assets

4.4.3. The Relationship Between Capital Adequacy (CAR) and ROA

The results as indicated in table 4.9 suggest that a negative and statistically insignificant relationship exists between CAR and profitability measured by ROA of S&L companies. A standardised coefficient value of -0.067 means that a 1% increase in capital adequacy of S&L companies will result to a reduction in its profitability by 6.7%. Zawadi Ally (2014)[4] argues that banks with high capital adequacy are in the position to use high technology such as ATM, online computer system, opening new branches, and using mobile banking, which leads to high efficiency and achievement of high profitability. Yang Tan et al. (2017)[5] attributed the negative relationship between capital risk and profitability to the fact that;

- Cost of funding is always lower for banks with higher levels of capital.
- Banks with higher levels of capital are most likely to engage in more prudent lending which translates into higher profitability

- Banks with higher levels of capital borrow less and the reduction in the volume of borrowing results in an increase in profitability.

The insignificant nature of the CAR on profitability of the S&L Companies may be attributed to the directives issued by the bank of Ghana for all S&L companies to increase their capital requirements from GH¢7m to GH¢15m within the period of the study. The negative relationship between Capital adequacy and profitability is contrary to the findings of Kosmidou et al., (2008)[6], Nandom Yakuku (2016)[7], Idowu & Awoyemi (2014)[8], Kipngetich & Muturi (2015)[9] and Ongore & Gemechu (2013)[10] whose findings had a positive relationship between the two variables. However, it agrees with the findings of Nagaraju and Boateng (2018)[11], Ofusu-Hene & Amo (2016)[12], Poudel (2012)[13], Mendoza & Rivera (2017)[14], Hosna et al. (2009)[15], and Gizaw et al. (2015)[16].

4.4.4. The Relationship Between Non-performing Loans (NPL) and ROA

The relationship between NPLR and ROA was negative and statistically significant with a standardised coefficient of -0.733. It implies that an increase in non-performing loan level by 1% will result in 73.3% reduction in return on assets of S&L companies. A one per cent increase in NPLR leads to a substantial reduction in profitability measured by ROA therefore, for S&Ls to reap a good return on their assets employed; management of S&L Companies must focus on prudent risk management measures that will reduce the menace of loan defaults. The finding is an indication that poor asset quality or high non-performing loans result in poor bank performance. This finding contradicts the findings of Kolapo et al. (2012)[17], Marshall and Onyekachi (2014[18]), and Idowu & Awoyemi (2014) who instead found a positive relationship between the two variables. The finding however agreed with the findings of Gizaw et al (2015) Magali (2013)[19], Hosna et al (2009), Kosmidou (2008), Ogore & Gemechu (2013), Peyavali (2015)[20], Ofosu-Hene & Amo (2016), Mawutor (2015)[21] and Kaaya & Pastory (2013)[22].

4.4.5. The Relationship Between Loan to Deposit ratio and ROA

Loan to deposit ratio is a measure of liquidity in banks. The relationship between Loan to Deposit Ratio (LTDR) and ROA was positive and statistically insignificant with a standardised

coefficient of 0.018. Meaning when LTDR of the S&L companies increases by 1% their profitability measured by ROA also increases by 1.8%. The positive relationship between liquidity and profitability relates to the fact that higher volumes of loans made by banks increase interest income and further improve bank profitability. The finding contradicts the findings of Kargi (2011)[23], and Mawutor (2015), but agrees with the findings of Iwedi & Onuegbu, (2014)[24], Nagaraju and Boateng (2018), and Yong Tan et al. (2017).

4.4.6. The Relationship Between Bank Size (LNTA) and ROA

Bank size (LNTA) measured by the natural logarithm of total assets had a negative and insignificant relationship with profitability (ROA) of S&L companies with a standardised coefficient of -0.055. The indication is that a percentage increase in the size of an S&L Company will lead to a reduction in its profit by 5.5%. The general expectation was that as the size of a bank increases, its profit margin should have also increased because larger banks can substantially reduce cost through economies of scale, but this finding is contrary to the expectation. We can attribute this phenomenon to over-expansion, which brings about inefficiencies due to the management control problem. The negative relationship between Bank size and return on assets is consistent with the findings of Fadzlan & Royfaizal (2008)[25], Ofosu-Hene & Amo (2016), Mawutor (2015), and Kosmidou et al. (2008).

4.5. REGRESSION RESULTS OF MODEL 2

4.5.1. Model Fit for Model 2

The regression results from table 4.10, shows the existence of a relationship between the dependent variable (ROE) and the independent variables. The model is well fitted with 67.5% ability of the IVs to influence the profitability of the S&L companies in Ghana. The implication is that the credit-risk management indicators CAR, LTDR, NPLR, and bank size jointly predicts 67.5% variation in ROE.

When the overall probability (P) value (Prob>F) ranges between 0.00 and 0.05, then the model is strong and possess a high predictive power which can be replicated in other studies. From table

4.11, the Prob>F = 0.000 which is less than 0.05, implies that the model 2 is considered to be fit and worthy of its replication in other studies. The F-statistics value of 21.295 is higher than the table value of F (4, 41) = 2.61 which makes the relationship between ROE and credit risk management variables statistically significant at 5% significance level.

Table 4.13: Model Summary of model 2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.822[a]	.675	.643	.659995

a. Predictors: (Constant), Natural log of total assets, Capital Adequacy Ratio, Loans and Advances to Total Deposit, Non-Performing Loan Ratio b. Dependent Variable: ROE

Table 4.14: ANOVA Table for model 2

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	37.104	4	9.276	21.295	.000[a]
	Residual	17.859	41	.436		
	Total	54.963	45			

a. Predictors: (Constant), Natural log of total assets, Capital Adequacy Ratio, Loans and Advances to Total Deposit, Non-Performing Loan Ratio b. Dependent Variable: ROE

4.5.2. The Regression Equation for Model 2

Table 4.12 presents the regression analysis using ROE as the dependent variable. Based on the unstandardized coefficients of the variables, the regression equation for model 2 will become

ROE = -1.317 +1.947CAR – 2.659NPLR -0.008LTDR +0.064LNTA

Table 4.15: Regression results of model 2

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
Constant	-1.317	1.340		-.982	.332	-4.024	1.390			
CAR	1.947	.798	.219	2.440	.019	.336	3.559	.265	.356	.217
NPL R	-2.659	.328	-.756	-8.096	.000	-3.322	-1.996	-.790	-.784	-.721
LTDR	-.008	.135	-.006	-.062	.951	-.282	.265	.144	-.010	-.006
LNTA	.064	.073	.081	.875	.387	-.083	.211	.249	.135	.078

a. Dependent Variable: Return on Equity

4.5.3. The Relationship Between Capital Adequacy (CAR) and ROE

From the regression results of coefficients of the predictor variables in table 4.12 above, CAR has a standardised coefficient of 0.219, t–statistics of 2.440, and significance (P-value) of 0.019. It means that CAR related positively to ROE and statistically significant since the P-value is less than 0.05 confidence level. The standardised coefficient value of 0.219 implies that 1% increment in CAR will result in approximately 22% improvement in profitability measured by ROE. It means S&L companies depends mostly on equity capital as a source of funding which enhances profitability as evidenced in increment of financial performance. It can also be because a lower level of capital risk leads to a lower return on equity. In other words, well-capitalised banks experience a higher return on equity. The result that suggests a positive relationship between CAR and ROE is in agreement with the findings of Afriyie & Akotey (2012)[26] and Yusheng Kong et al. (2017)[27]. It, however, contradicts with the findings of Bizuayehu (2015)[28], Gizaw et al. (2015), Hosna et al. (2009), Ongore & Gemechu (2013), Ofosu-Hene & Amo (2016), and Mendoza & Rivera (2017).

4.5.4. The Relationship Between Non-performing Loans (NPLR) and ROE

NPLR also recorded a standardised coefficient of -0.756, t-statistics of -8.096 and a significance of 0.000. The interpretation is that the relationship between non-performing loan (NPLR) and profitability (ROE) is negative and statistically significant at 5% significance level. The standardised coefficient value of -0.756 implies that 1% increase in NPLs will results in 75.6% reduction in profitability of S&L companies in Ghana. The negative impact of NPL ratio on the profitability of S&L companies can be attributed to the fact that a large volume of non-performing loans increases banking cost and subsequently, a decline in profitability. Therefore, to be able to maximise return on shareholders' equity, prudent risk management practices that will reduce loan default must be a concern to the management of S&L companies in Ghana. Mandatory loan provisioning and the associated cost involved in the recovery of bad loans negatively affect profit generated from the equity of shareholders. The negative relationship between NPLR and ROE is in line with the findings of Takyi Opoku et al (2016)[29], Ofosu-Hene & Amo (2016), Hosna et al (2009), Gizaw et al (2015), Buzuayehu (2015), Magali (2013), Mawutor (2015), and Ongore & Gemechu (2013). The result is however in contrast with the findings of Afriyie & Akotey (2012), Addo Boye (2014)[30], Idowu & Awoyemi (2014) and Boahene et al. (2012)[31].

4.5.5. The Relationship Between Loan to Deposit ratio (LTDR) and ROE

The results indicated that LTDR has a standardised coefficient of -0.006 and a significance value of 0.951. It means LTDR does not uniquely contribute significantly to the prediction of the independent variable (ROE). LTDR is a measure of liquidity and the negative coefficient of -0.006 suggest that a 1% increase in LTDR will lead to a marginal reduction in profitability by 0.6%. The finding highlights the trade-off between liquidity and profitability. Ceteris paribus, the more we hold up capital to meet liquidity demands, the lower the bank's profitability. It takes very skillful management to be able to hold up adequate liquidity without affecting profitability. The negative relationship between loan to deposit ratio and return on equity conforms to the findings of Takyi Opoku et al. (2016), Mawutor (2015), and Kargi (2011) but contradict the findings of Bizuayehu (2015)

4.5.6. The Relationship Between Bank Size (LNTA) and ROE

Bank size recorded a standardised coefficient of 0.081 with t-statistics of 0.875 and significance value of 0.387. It makes the relationship between bank size and ROE positive and insignificant. The standardised coefficient of 0.081 implies that when the size of the S&L Company increases by 1%, profitability measured by ROE also increases by 8.1%. It is in line with expectation because at the normal circumstances lager banks can reduce cost through economies of scale. Larger banks can secure financing for their operations at a lower cost than their smaller counterparts are because lager banks, which typically offer many different products and services, can leverage their size to reach out to more customers with their products and services. Size however, does not matter much when it comes to the ROE considering the contribution of the variable (LNTA) to the prediction of the return on equity. The positive relationship between Bank size and profitability is in contrast with the findings of Ofosu-Hene & Amo (2016), Kosmidou et al. (2008), Mawutor (2015), and Takyi Opoku et al. (2016) who found a negative relationship between bank size and profitability (ROE).

4.6. TESTING OF HYPOTHESIS

In the regression analysis output, the column marked coefficients has a column labeled Sig. (P-value), these Significance values tells whether the variables are making any statistically significant contribution to the model (equation). If the Sig value is less than 0.05, then the variable is making a significant contribution towards the prediction of the dependent variable. If on the other hand the Sig. Value is higher than 0.05 then we can conclude that that variable is not making any significant unique contribution to the prediction of the dependent variable. Based on the above preamble, the stated hypotheses are tested below:

***Ho_1:* There exists a statistically significant relationship between Non-Performing Loan Ratio (NPLR) and Return on Assets (ROA) of S&L companies in Ghana.**

From table 4.9 above where ROA was the proxy for profitability, NPLR recorded t-statistics of -6.465 and significance (P- value) of 0.000. Since the significance value is not more than 0.05, the

relationship between NPLR and ROA is significant. The researcher, therefore, fails to reject (accepts) the null hypothesis(Ho_1).

Ho_2: There exists a statistically significant relationship between Capital Adequacy Ratio (CAR) and Return on Assets (ROA) of S&L companies in Ghana

From table 4.9 above, CAR had a t-statistics value of -0.615 and a significance value of 0.542. Since the significance value is above .05, the relationship between CAR and ROA is statistically insignificant. The null hypothesis (Ho_2) is therefore rejected (failed to be accepted)

Ho_3: There exists a statistically significant relationship between Loans and advances to Deposit Ratio (LTDR) and Return on Assets (ROA) of S&L companies in Ghana

From table 4.9, LTDR recorded t-statistics of 0.160 and significance value of 0.873. Since the significance value is greater than 0.05, LTDR does not have a statistically significant relationship with ROA. The null hypothesis (Ho_3) is therefore rejected (fail to be accepted)

Ho_4: There exists a statistically significant relationship between Non-Performing Loans Ratio (NPLR) and Return on Equity (ROE) of S&L companies in Ghana

From table 4.12, NPLR recorded t-statistics of -8.096 and significance value of 0.000. It therefore implies that the relationship between NPLR and ROE is statistically significant since the significance value is less than 0.05. The null hypothesis (Ho_4) is accepted (failed to be rejected)

Ho_5: There exists a statistically significant relationship between Capital Adequacy Ratio (CAR) and Return on Equity (ROE) of S&L companies in Ghana

The t-statistics and significance values from table 4.12 were 2.440 and 0.019 respectively. The significance value is not more than 0.05, so the relationship between CAR and ROE is statistically significant. The null hypothesis (Ho_5) is therefore accepted (failed to be rejected)

Ho_6: There exists a statistically significant relationship between Loans and advances to Deposit Ratio (LTDR) and Return on Equity (ROE) of S&L companies in Ghana

LTDR had a t-statistics of -0.062 and a significance value of 0.951. The Sig. >.05, implies that the relationship between LTDR and ROE is statistically insignificant. Null hypothesis (Ho_6) is therefore rejected.

4.7. ANALYSIS AND INTERPRETATION OF THE PRIMARY DATA

In order to achieve the remaining objectives of the study, data taken from the respondents of the sampled S&L Companies through questionnaire prepared in Likert and nominal scales format were analysed and presented using tables, charts, and graphs. The questionnaire was prepared such that each set of questions will provide an answer to each of the research questions, which will in effect help in achieving the set down objectives of the study.

4.7.1. Analysis of the Demographic data

There was no missing data as shown in table 4.16 below; the total valid number was 254 as expected with the minimum and maximum numbers meeting expectation. The gender had ranged from 1 – 2 covering only male and female, job position having a minimum of 1 and a maximum of 5 which represents the five strata grouping of respondents based on job position. Work experience recorded a minimum number of 1, and a maximum of 5 whiles, a maximum of 7 sampled S&L companies were used in the survey.

Table 4.16: Missing Data Statistics

		Gender	Position	Work Experience	company name
N	Valid	254	254	254	254
	Missing	0	0	0	0
Mode		1	1	3	1
Minimum		1	1	1	1
Maximum		2	5	5	7

Source: survey data

4.7.2. Respondents by Gender

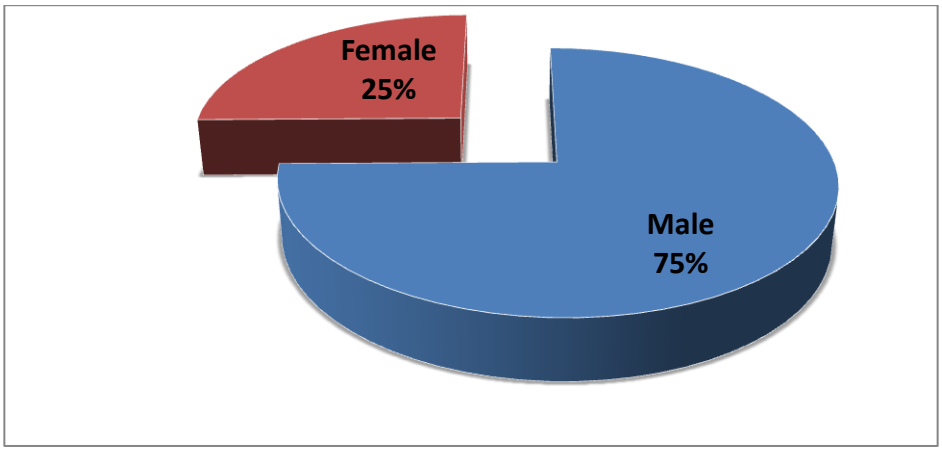
From table 4.17 below, the male respondents were the highest number as 190 out the total sample size of 254 were males. It implies that the credit-related job schedule is mostly male dominated when it comes to S&L Companies in Ghana. Only 64 female respondents were involved in the credit administration of the selected S&L Companies in Ghana. Figure 4.6 shows the pie chart of the respondents in percentage. The male respondents constituted 75% whereas their female counterparts constituted only 25% of the 254 respondents. It is an indication that male officers dominate the credit-related duties in the Savings and Loans companies in Ghana.

Table 4.17: Respondents by Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	190	74.8	74.8	74.8
	Female	64	25.2	25.2	100.0
	Total	254	100.0	100.0	

Source: survey data

Fig.4.6: Percentage Male and Female respondents



Source: survey data

4.7.3. Respondents by Position

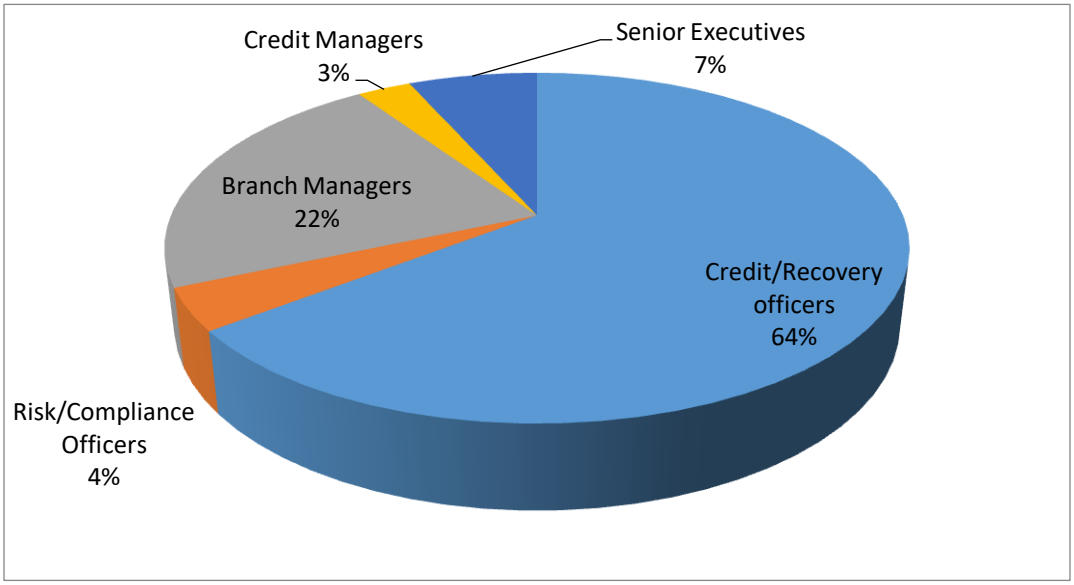
From table 4.18 and fig. 4.7 below, it is obvious that credit/recovery staff formed the largest number of respondents with 164 representing 64.6% of the total sample size of 254. Branch managers were the next highest with 56 respondents representing 22% of the total sample of 254. Senior Executives were 17 representing 6.7%, followed by Risk/Compliance respondents, which were 10 representing 3.9%, and lastly, Credit Managers who were only seven (7) representing 2.8% meaning each S&L Company had one credit manager who is always based at the head office.

Table 4.18: Respondents by Position

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Credit/Recovery officer	164	64.6	64.6	64.6
	Risk/Compliance Officer	10	3.9	3.9	68.5
	Branch Manager	56	22.0	22.0	90.6
	Credit Manager	7	2.8	2.8	93.3
	Senior Executive	17	6.7	6.7	100.0
	Total	254	100.0	100.0	

Source: survey data

Fig.4.7: Pie chart of respondents by Position



Source: survey data

4.7.4. Respondents by work experience

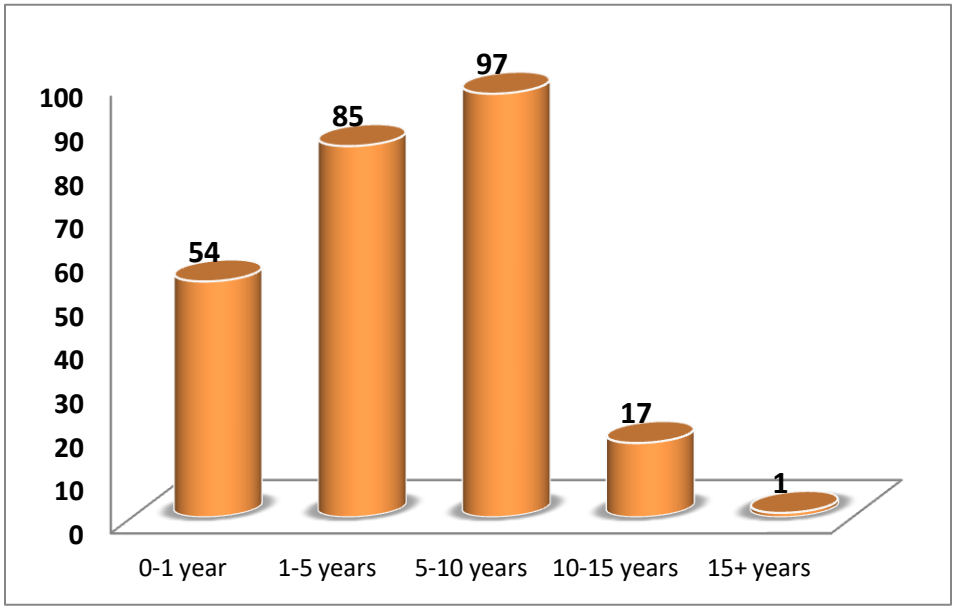
Table 4.19 and fig.4.8 show the breakdown of respondents based on their credit-related work experiences. Ninety seven (97), representing 38.2% of the respondents had between 5 and 10 years working experience followed by between 1 and five years with 85 participants representing 33.5%. The next highest frequency regarding work experience is up to 1 year with a frequency of 54 representing 21.3% of the respondents. Staffs with work experience between 10 and 15 years were only 17 representing 6.7%. Meanwhile, only one respondent had a work experience of more than 15 years, which represents 0.4% of the sample size.

Table 4.19: Respondents based on Work Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 - 1 year	54	21.3	21.3	21.3
	1 - 5 years	85	33.5	33.5	54.7
	5 - 10 years	97	38.2	38.2	92.9
	10 - 15 years	17	6.7	6.7	99.6
	15+ years	1	.4	.4	100.0
	Total	254	100.0	100.0	

Source: survey data

Fig. 4.8: frequency of respondents by work experience



Source: Research Data

4.8. FACTOR ANALYSIS

Factor analysis is a data reduction technique where it takes a large set of variables and looks for a means of reducing the data using a smaller set of factors or components. It is usually done to identify any unique and meaningful components within the co-variance among the set of other variables. There are two main types of factor analysis: exploratory and confirmatory. The exploratory factor analysis is mostly used to gather information about the interrelationship among a set of variables. Confirmatory factor analysis on the other hand is used in testing or confirming specific hypothesis or theories concerning the structure underlying a set of variables.

The term factor analysis includes a variety of different but related techniques. One of the main distinctions is what is called principal component analysis (PCA) and factor analysis (FA). These two types of techniques are similar in many respects and are mostly used interchangeably by researchers. Both techniques attempt to produce a smaller number of linear combinations of the original variables such that it account for most of the variability in the pattern of correlations (Julie Pallant, 2005). For the purpose of this study, principal component analysis will be used to identify the most unique and meaningful co-variables among the set of variables. To conduct the factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, and Bartlett's Test of sphericity was conducted to confirm whether the data set meets the minimum standard, which needs to be passed before conducting factor analysis. The rule of thumb is that the KMO measure should ideally be .6 or more but any figure above .5 is appropriate (Kaiser, 1974)[32] whereas the Bartlett's test of sphericity value should be less than .05 thus reaching statistical significance (Bartlett, 1954)[33]. Varimax rotation was further conducted since it presents an easier interpreted pattern of loadings. According to Julie Pallant (2005), factors with Eigenvalue of above, one (1) is retained for loading. Factors that loaded below one (1) were suppressed for better reading and interpretation of the results. The total variance explained values and the rotated component matrix can be found in the appendix 7, 8, 9, 10, and 11. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of sphericity results as well as the factor loadings of the principal component analysis (PCA) for various set of variables are as follows:

4.8.1. Principal Component Analysis of Risk Types and its Frequency of occurrence

Table 4.20: KMO and Bartlett's Test for Risk Types

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.570
Bartlett's Test of Sphericity	Approx. Chi-Square	83.043
	df	3
	Sig.	.000

A principal component analysis (PCA) was performed on the data which produced a KMO measure of sampling adequacy of approximately .6 whereas Bartlett's test for sphericity was found to be significant (χ^2 (3) = 83.043, P < .05) as indicated in table 4.20 above. The results imply that the data is fit for the running of factor analysis.

Table 4.21: Factor analysis of risk types and its frequency of occurrence

No.	Factors	Factor Loadings	% of Variance	Cumulative Variance %
1	Credit Risk	.833	54.816	54.816
2	Operational Risk	.719	27.588	82.403
3	Market Risk	.658	17.597	100.000

Extraction Method: Principal Component Analysis

Interpretation: Respondents were asked to indicate their opinion based on firsthand experience the type of risk that mostly occurs in their respective S&L Companies using a Likert scale ranging from Very Infrequent =1, Infrequent =2, Neither frequent nor Infrequent =3, Frequent =4, and Very frequent =5. The factor loadings result indicated that credit risk alone exhibited a percentage variance of 54.8%, which means it is the most frequently occurring risk among the three types of risk the S&L Companies encounter in the discharge of their core mandate. Operational risk was the second most frequent risk the S&L Companies encounter with 27.6%

variation, and market risk being the least occurring risk in the daily operations of the Ghanaian S&L companies with a percentage variance of 17.6%. The market risk being the least encountered did not come as a surprise since by regulation, S&L Companies do not engage in activities that attract market risk (e.g. foreign exchange).

4.8.2. Principal component analysis of NPL causing factors

Table 4.22: KMO and Bartlett's Test for NPL causing factors

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.597
Bartlett's Test of Sphericity	Approx. Chi-Square	1097.532
	df	136
	Sig.	.000

From table 4.22 above, it can be observed that the KMO value is approximately .6 whereas the Bartlett's test of sphericity value was also significant (χ^2 (136) = 1097.532, P < .05) which makes the data suitable for factor analysis.

Table 4.23: Factor Analysis of NPL causing factors

No.	**Factors**	**Factor Loadings**	**% of Variance**	**Cumulative Variance %**
1	Inadequate loan Screening	.817	19.321	19.321
2	Inexperienced loan officers	.778	11.757	31.078
3	Insufficient disposable income	.718	10.857	41.935
4	Repayment frequency	.721	8.124	50.059

5	Sector of customer business	.674	7.136	57.195
6	Loan size	.651	6.325	63.520
7	Multiple borrowing	.491	5.981	69.502

Extraction Method: Principal Component Analysis

Interpretation: The factors column of the table 4.23 indicates the final core factors that were extracted after the data rotation and reduction. The results of the analysis show the seven extracted factors out of the 17 factors, which had Eigenvalue of more than 1. These seven factors together explained 69.5% of the variability of the data. Among the NPL causing factors, inadequate loan screening of loan applications was found to be the most NPL causing factor with 19.3% variation in the data. The second factor that causes NPLs in the savings and Loans companies was found to be inexperienced loan officers with 11.8%. Some customers are always economical with information during interview so it takes an experienced loan officer to read meaning into nonverbal cues exhibited by the applicant in order to spot red flags. If from the analysis of the demographic data, it emerged that the credit/recovery officers constituted 64% of the respondents, and if 21.3% of the respondents were under 1year working experience then by inference, most of these inexperienced officers were credit/recovery officers. It is therefore not surprising that inadequate loan screening emerged from the factor analysis as the major cause of nonperforming loans. Insufficient disposable income of the customer (11.8%) was also found to be a major cause of NPL in the S&L Companies. The next most NPL causing factor was found to be frequency of repayment with 8%. The cycle of the client's business should always be taken into consideration during the decision taken process because if the repayment schedule does not coincide with the cash flow cycle of the customer, default is bound to occur. The sector of the customer's business was another factor if not considered would lead to NPL with a percentage variance of 7%. Some customers operates in a very risky sector so if the necessary preventive measures are not put in place default will occur which may generate into an NPL. The size of loan (6.3%) could be either too large or too small for the loan client. Either situation will lead to loan default. When the customer is over financed, the temptation to channel the excess to unproductive ventures is high. The same way if the customer is under finance there is the

temptation to look elsewhere for top up which may overburden the cash flow. Loan officers are therefore expected to do due diligence during the appraisal stages of the application to determine the right amount of fund the customer needs. Another important factor that causes customers to default on their repayment obligation was found to be multiple borrowing with 5.9% variation of the data. Checks from the credit reference portal and a little background check can prevent this dishonesty.

4.8.3. Principal component analysis of Impact of Loan Defaults

Table 4.24: KMO and Bartlett's Test of Impact of Loan Defaults

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.573
Bartlett's Test of Sphericity	Approx. Chi-Square	287.561
	df	21
	Sig.	.000

From table 4.21 above, Kaiser-Meyer-Olkin Measure of Sampling Adequacy was approximately .6 and Bartlett's Test of Sphericity was also significant (χ^2 (21) = 287.561, P < .05). It is an indication that the data meet the minimum standard required for the factor analysis.

Table 4.25: Factor Analysis of Impact of Loan Default

No.	Factors	Factor Loadings	% of Variance	Cumulative Variance %
1	Stagnation of staff salary	.907	32.079	32.079
2	Increase in provision for bad debt	.811	19.106	51.185
3	Reduction in profit	.806	14.481	65.667
4	Decrease in working capital	.743	12.017	77.683
5	Dumping of moral spirit of loan officers	.574	10.191	87.875

Extraction Method: Principal Component Analysis

Interpretation: Table 4.22 also shows the extracted factor loadings for identified factors for impact of loan default on the S&L Companies. The 5 distinct extracted factors together accounted for a total variance of 87.9% of the data. The factor loadings indicate that Stagnation of employees salary (32.1%) is the most affected when a bank is bedevilled with nonperforming loans (NPL). The next consequence of nonperforming loans of the S&L companies is that it balloon the provision for bad debt (19%). Since the provision is taking from the income earned by the bank, profitability will definitely be affected. When loans are nonperforming both interest and principal repayment ceases so reduction in profit (14.5%) being affected factor is as anticipated. The working capital (12%) was also found to be at the receiving end when loans are not performing. Such a situation will create liquidity problem for the lending instructions. Dumping of moral spirit of loan officers with a variance of 10% was also found to be among the affected factors. Because the credit officers are held responsible when their loan clients default, their moral goes down especially when loan officers receive series of warning letters and verbal warnings from superiors. The thought of losing their job alone is enough to make them demoralised.

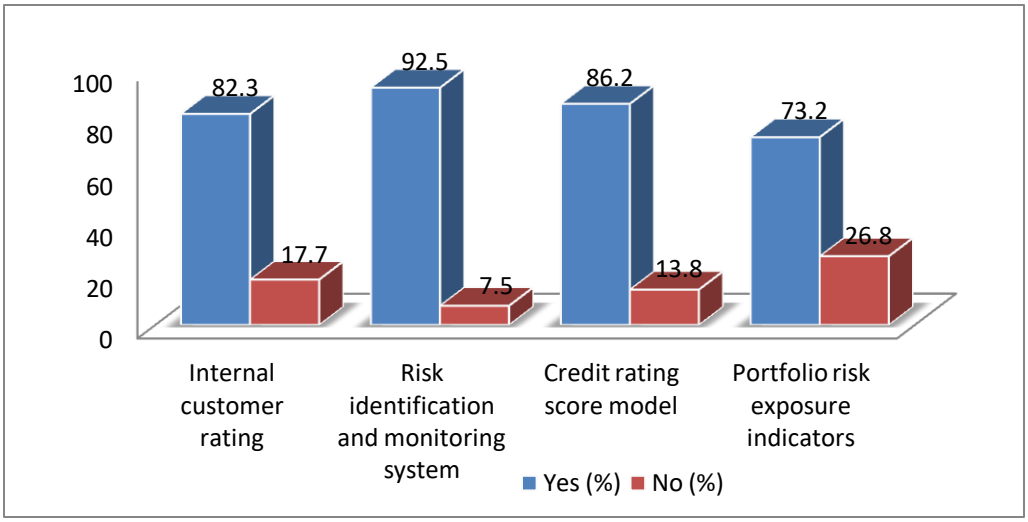
4.8.4. Existence of Credit Risk Management Practices in the S&L Companies

Table 4.26: Existence of Credit Risk Management Practices

variables	Yes (%)	No (%)	Total %
Internal customer rating	82.3	17.7	100
Risk identification and monitoring system	92.5	7.5	100
Credit rating score model	86.2	13.8	100
Portfolio risk exposure indicators	73.2	26.8	100

Source: Field survey

Fig.4.9: Existence of Credit Risk Management Practices in the S&L Companies



Source: Field survey

Interpretation: The researcher wanted to understand whether the S&L companies have in place some credit-risk management measures and to ascertain how effective it is. To achieve the fourth objective of the study, the researcher asked respondents to indicate whether there is existence or otherwise of some listed CRM practices in their respective companies. As can be observed from table 4.26 and fig.4.9, about 82.3% of the respondents indicated the S&L companies have in place is the existing internal customer ratings in place whiles 17.7% said there is no such a system in their institutions. On the question of whether they have a system in place to identify and monitor risk in their various companies on an on-going basis, 92.5% said yes whiles 7.5% said no. On whether they have credit rating score models, 86.2% said yes whiles 13.8% said there were no such rating models in their respective companies. The researcher again wanted to know whether there was the existence of sensitivity of portfolio exposure indicators to underlying risk factors. 73.2% answered yes whiles 26.8% said there was no existence of such a system.

4.8.5. Principal component analysis of Effectiveness of the existing Credit Risk Management Practices

Table 4.27: KMO and Bartlett's Test for effectiveness of CRM practices

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.723
Bartlett's Test of Sphericity	Approx. Chi-Square	762.097
	df	36
	Sig.	.000

Table 4.27 above is the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity for the factors of the credit risk management practices. The KMO measure of sampling adequacy was .723, which is above the minimum .6 whereas the Bartlett's Test of Sphericity value was observed to be significant (χ^2 (36) = 762.097, P < .05) which is a confirmation of the suitability of the data for performing factor analysis.

Table 4.28: Factor Analysis of effectiveness of credit risk management practices

	Factors	Factor Loadings	% of Variance	Cumulative Variance %
1	Personal guarantor	.883	37.947	37.947
2	Regular monitoring	.881	15.925	53.872
3	Collateral pledge	.873	12.556	66.428
4	Insurance cover	.825	10.984	77.412
5	Credit reference bureau checking	.673	6.706	84.118

Extraction Method: Principal Component Analysis

Interpretation: Nine credit-risk management variables were constructed to understand how effective the existed credit risk management practices in the S&L were. A Likert scale ranging from highly ineffective = 1, ineffective = 2, neither effective nor ineffective =3, effective = 4, and highly effective = 5. The extracted factor loading analysis is as presented in table 4.28 above. Five factors were extracted after rotation, and together explained a total variance of 87.8% in the data. Majority of the respondents indicated that demanding for personal guarantor (37.9%) to secure the loan facility is the most effective way to mitigate credit risk. Usually a guarantor has equal obligation as the loan customer with regard to the repayment of the loan facility. The second most effective credit-risk management practice in the S&L Companies was found to be regular monitoring with a percentage variance of 15.9%. The third effective means of mitigating credit risk is demand for collateral as a security for the loan granted with a percentage variance of 12.6%. The fourth most effective credit-risk management practice according to the respondents was to insure the loan clients (10.98%) against unavoidable circumstance such as flood, fire, life-threatening ailments etc. Checking the customer's credit history from the credit reference bureau portal (6.7%) was the next effective credit risk management practice employed by the savings and loans companies in Ghana.

4.8.6. Principal component analysis of Difficulties in Loan Recovery

Table 4.29: KMO and Bartlett's Test of difficulties in loan recovery

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.600
Bartlett's Test of Sphericity	Approx. Chi-Square	248.732
	df	10
	Sig.	.000

Table 4.29 above indicate the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity. The KMO measure was .600, which meets the minimum coefficient of .6 whereas Bartlett's Test of Sphericity of .000 was observed to be significant (χ^2 (10) = 248.732, P < .05) making it appropriate for factor analysis to be conducted.

Table 4.30: Factor analysis of Difficulties in Loan Recovery

	Factors	Factor Loadings	% of Variance	Cumulative Variance %
1	Pursuit of legal action	.850	42.574	42.574
2	Disposing off collateral	.841	24.223	66.797
3	Use of recovery agencies	.814	15.559	82.357

Extraction Method: Principal Component Analysis

Interpretation: Table 4.30 shows the factor loadings for analysis. Respondents were asked to indicate the difficulties they faced during loan recovery using some recovery measures. Three factors were extracted, and together contributed 82.4% of total variance of the data. Pursuit of legal action against defaulters was found to be the most difficult loan recovery measure with a percentage variance of 42.6%. Unlike other countries such as India, where special courts have been established for loan recovery purposes there is no such courts in Ghana which makes legal pursuits a difficult task. Lenders will have to resort to civil suits against defaulters, which makes them disadvantaged, as the court does not take any punitive action against the defaulters. Disposing off collaterals (24.2%) used by loan clients after they have defaulted was found to be one of the difficult recovery measures employed by S&L Companies. Most Ghanaians consider the buying of someone's property especially when that person is in difficulties as ungodly so they shun away from it and that makes it difficult for the bank to convert the asset into liquid cash. The third difficult loan recovery measure was found to be the use of recovery agencies with a percentage variance of 15.6%.

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CHAPTER FIVE

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FINDINGS, CONCLUSION, AND RECOMMENDATIONS

CHAPTER FIVE

FINDINGS, CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS

The study was conducted with the broad objective of identifying the type of risk that mostly affects the day-to-day operational activities of the S&L companies and to examine the relationship between credit risk management, and the profitability of the savings and loans companies in Ghana. Based on the above, ratios computed from the financial statements of the selected companies together with responses taken from the staff of sampled companies were analysed with the aid of SPSS software. Due to the way the analysis was done in two parts, the findings were also summarised under two headings: findings from the analysis of the Secondary data and the primary data.

5.1. FINDINGS FROM THE ANALYSIS OF THE SECONDARY DATA

Ratios of Credit-risk management (NPLR, LTDR, and CAR) as well as the ratios of the control variable and profitability (ROE, ROA) were computed to ascertain the relationship between these set of important measures. The following were found from the analysis of the ratios.

1. Within the study period (2011 – 2016), there was an increase in NPLR from 5% to 30%. The worsened NPL situation in the S&L companies had a ripple effect on their profitability leading to fluctuations in ROA and ROE, which made ROA declining from -.73% to -5.47%, and ROE from 15% to -73%. These scary findings of the performance of the savings and loans companies in Ghana, which were not averted, was the reason why the bank of Ghana revoked the licenses of 15 S&L companies in August 2019.

2. The findings also indicated a mix result regarding the relationship between CAR and the profitability measures. Whiles excess cash holdings reduces the return on asset, it leads to an increment in return on shareholders' equity. The essence of maintaining Capital adequacy is to serve as a cushion to depositors in the event of distress, but when capital

is over-reserved expected return on assets is affected. Idle cash becomes a cost to the companies if not put to profitable use hence the negative relationship between capital and return on assets. Even though increase in CAR leads to a corresponding increase in ROE, its effect was found to be insignificant and that is an indication that management of these companies should maintain a balance in their capital reservations.

3. The findings indicated also that NPLR had negative and statistically significant relationship with both ROA and ROE (profitability). This indicates the severity of the impact of deterioration in asset quality (NPL) on the profitability of S&L companies in Ghana. The negative relationship of NPL ratio with both ROA and ROE was an expected outcome since nonperforming assets has accompanying cost such as recovery cost, and cost of provision for bad debts, which erodes the profit of the lending institutions.

4. In addition, it was found that a negative and insignificant relationship existed between Loans and Advances to Deposit ratio (LTDR) and ROE but had a positive and insignificant relationship with ROA. The LTDR is a measure of how much depositors money is used to finance credit activities so the higher the ratio the more depositors fund is used and additional revenues generated outside the current assets of the company hence, the positive relationship between LTDR and ROA.

5. Bank size (LNTA) had a negative and insignificant relationship with ROA but related positive and insignificant with ROE. When an bank expands its operational activities, it stands the chance of attaining higher profitability due to economies of scale which translates into increase in shareholders' equity hence the positive relationship between bank size measured by total assets and return on equity. Even though the relationship between bank size and return on assets was negative, its effect was insignificant. Banks invest in assets when they expand but it takes a couple of years to recoup the return on the acquired assets. So the negative effect of bank size on ROA may be attributed to the fact that the companies concerned had recently embark on expansion during the study period.

5.2. FINDINGS FROM THE ANALYSIS OF THE PRIMARY DATA

The sample size of 254 staff from the population of 695 of the seven selected S&L companies was used for the study. For easy analysis purposes, the researcher grouped the sample into five stratums based on job function. The findings of the primary data are as summarized below:

1. The analysis of the demographic data revealed that male officers with 75% dominate the credit function of the sampled S&L Companies whereas female officers represented 25%.

2. Credit/recovery officers constituted 64.5% of the respondents followed by Branch managers (22%), senior executives (6.7%), risk/compliance officers (3.9%) and credit managers representing 2.8%

3. Majority of the employees (38.2%) of the sampled S&L Companies have between five and ten years of working experience. Employees who have worked for between one and five years were the next largest group with 33.5% followed by under one year (21.3%). 6.7% have between 10 and 15 years of working experience with only 0.4% of the employees having more than 15 years of work experience.

4. A part of the broad objective of the study was to identify the type of risks that mostly affect the daily operations of the S&L Companies. The employees indicated that they are faced with credit risk more often than any other risk. Operational risk was found to be the second most occurring in the operations of the S&L Companies followed by market risk

5. On the question of what causes nonperforming loans, inadequate loan screening by loan officers was singled out to be the major cause of NPLs in the S&L Companies in Ghana. Inexperienced loan officers, was found to be another major cause of nonperforming loans. Insufficient disposable income was also found to have a consequential effect on the ability of the customer to repay. The other factors found to cause the accumulation of nonperforming loans in the S&L companies include repayment frequency, the sector of

the customer's business, the size of the loan granted, and customers borrowing from multiple banks all contribute to the rising nonperforming loans.

6. On the impact that loan defaults has on the operations of the S&L companies, employees pointed out that their salary being stagnant for years without any adjustment was what affects them most. Another effect of customers defaulting on their obligation to repay the loans granted them according to the employees was that it increases provision for bad debt which erodes profit hence reduction in profit was also found to be affected when NPLs rise. Decrease in the working capital of the companies was another impact of NPLs on the S&L companies. In addition, dumping the moral spirit of loan officers was also found to be as a result of nonperforming loans.

7. As part of the objectives to find out whether the S&L companies have in place some credit-risk management practices, about 82.3% of the respondents indicated there is existence of internal customer ratings in place in their companies whiles 17.7% said there is no such a system in their institutions. On whether they have a system in place to identify and monitor risk on an on-going basis, 92.5% said yes whiles 7.5% said no. On whether they have credit rating models, 86.2% of the respondents indicated that there is existence of credit rating models in their respective S&L companies. 13.8% said there were no such models in their companies. The researcher further asked respondents whether there was existence of sensitivity of portfolio exposure indicators to underlying risk factors. 73.2% answered yes whiles 26.8% said there was no such indicator existing in their S&L Companies.

8. On the question of how effective the existing credit-risk management measures practiced by the S&L Companies are, employees (respondents) indicated that demanding for a personal guarantor is the most effective practice being used by the S&L Companies in Ghana. Continuous monitoring of the loan customer throughout the repayment period happens to be the second most effective credit risk management practice. Demanding for collateral security was also identified as one of the effective risk management practices employed by the S&L Companies. Again, it was found that insuring the loan customer against any unforeseen circumstances is a very effective credit risk management practice.

Another effective credit risk management practice used by the S&L Companies found from the study was crosschecking the credit history of the loan applicant using the credit reference bureau portal.

9. Concerning the difficulties faced in enforcing the existing recovery measures by S&L staff during recovery of nonperforming loans, it was found that pursuing legal action against the defaulted customers was identified as the most difficult recovery measure. Another difficult recovery measure happens to be disposing off collateral used by customers in securing the loan. The use of recovery agents too emerged among the difficult measures S&L companies used in loan recovery.

5.3. CONCLUSION

Financial institutions especially banks and other lending institutions encounter a number of risks both financial and non-financial. However, credit risk was found to be the hazardous and the most common risk among the three prominent types of risk (credit, market, and operational risks) S&L companies encounter in the discharge of their mandate on day-to-day basis. The results of the study have clearly demonstrated that the S&L Companies in Ghana are inefficient, the resultant effect is the high NPL accumulation, and a very weak profitability performance exhibited over the study period.

The findings remind management and regulators of S&L Companies the need to pay much attention to credit risk management considering the adverse effect it exerts on the profitability of the financial institutions. The negative relationship found between nonperforming loans and the profitability indicators buttress the fact that if lending institutions intend to remain profitable and sustainable, then management of these institutions must give credit-risk management prominence in their strategic policies.

The results of the study further pointed an accusing finger at inadequate screening of loan applicants as the major cause of nonperforming loans in the S&L Companies. This is because when risk analysis is poorly executed it adversely affects the lending institution, which exposes the shareholders, depositors, as well as creditors to unwarranted risk through the depletion of capital and funds invested in these institutions. From the analysis of the demographic data, it

appears management of the S&L Companies engages the services of more inexperienced officers in the credit job and has failed to give them enough training resulting in adverse selection of borrowers hence the huge NPL accumulation.

Although the S&L companies come across market, and operational from time to time, credit risk frequently affects the S&L Companies operation. The continuous deterioration and accumulation of the NPLs of the S&L companies over the study period, tells us that the recovery measures must be strengthened. Guarantor enforcement remains the most effective recovery measure to execute during loan recovery, lenders must therefore insist on a personal guarantor irrespective of the loans size. Because there are no dedicated recovery courts like the debt tribunal courts in the case of India, which makes loan recovery for the S&L companies' extremely difficult, credit risk mitigating measures such collateral pledge, insurance cover for loan clients, and regular monitoring of loans must be enforced. The S&L Companies should also avoid taking unnecessary risk by indulging in aggressive lending as a means of competing since it can increase default risk and that will impose heavy financial losses on these lending institutions.

The importance of this study cannot be overemphasized. It has made many revelations as far as the relationship between credit risk management and profitability of S&L companies is concerned. It has contributed to filling the literature gap on the subject matter in the savings and loans companies' subsector of the banking industry in Ghana. Apart from adding to the body of existing knowledge, it will also help in decision making of management to focus more on activities that may improve profitability of the S&L companies and the banking industry at large.

5.4. RECOMMENDATIONS

The findings of the study have made an eye opening revelations on a number of issues about the effects of credit risk management on profitability of the savings and loans companies in Ghana. The findings of the study again offer important policy implications for the regulators of the banking industry, policy makers, and management of banking institutions in Ghana about the effect of credit risk management on the profitability of the S&L Companies. Below are the recommendations made based on the findings of the study to be utilized by management of the S&L companies, academics, the government, and the regulators of the banking sector in Ghana

I. The government of Ghana must learn from the Indian example by setting up dedicated courts like the debt tribunal courts in India, for loan recovery purpose to fast track prosecution of loan defaulters

II. Complete autonomy (devoid of political interference) should be accorded to the central bank of Ghana (BoG) in order to exercise its regulatory mandate to the fullest. When politicians stop medelling in the affairs of the Central bank, their supervision powers can be executed without fear or favour. Such autonomy will prevent the repeatition of the banking crisis, which nearly collapsed the banking sector.

III. S&L companies must enforce and improve upon their existing credit risk management practices in order to remain in business. Because there is no dedicated recovery courts like the case of India, due diligence must always be enforced during the application stages since inadequate loan application screening was found to be the major cause of loan defaults in the S&L companies.

IV. All the S&L companies must sign a memorandum of understanding with insurance companies to insure all their loans clients against unforeseen circumstances to minimise loses since claiming of insurance was found to be an easy way of recovering the non-performing loans from customers who are indisposed.

V. Freshly recruited loan officers' must undergo adequate training before allowing them to process loans since inadequate screening of loan applications was identified as a major reason loans go bad.

VI. It is further recommended that, the Central Bank of Ghana (BoG) should make it mandatory for all loan-granting institutions to sign up and furnish the credit reference bureaus with details of all their newly disbursed loans for easy referencing and to avoid giving out loans to already indebted customers and those with bad credit history.

VII. S&L companies are encouraged to strengthen their credit management efforts in order to minimize their level of non-performing loans.

VIII. Strict enforcement of capital adequacy to avert any bankruptcy is required considering the role maintaining the required capital adequacy plays in ensuring that banks do not run in to liquidity crises. From the descriptive statistics, it emerged that the average CAR was 16.3%, which implies that S&L companies hold excess capital above the required 10%. Management of S&Ls should therefore desist from the practice and invest the excesses since holding capital without investing affects the company's profitability.

IX. Management of S&L companies should strengthen their internal control and compliance measures when they plan to embark on expansion since when there is expansion it becomes difficult to oversee all activities which leads to staff indulging in inefficiencies and that defeats the advantages of economies of scale.

X. Bank management should maintain a moderate level of Loans and advance to deposit ratio since it is a measure of the banks' ability to survive withdrawals. Higher rates will leads to liquidity problems

5.5. DIRECTIONS FOR FURTHER RESEARCH

Credit risk has caused havoc in the banking industry across the world, which demands further investigations into the subject matter. For instance, the recent revocation of licenses of banks and nonbank financial intuitions in Ghana largely was due to impaired loan portfolios of the affected institutions. Based on the findings of the study, the following further studies are suggested:

I. To the academic researchers, further research work is required on the causes of loan delinquency in the S&L subsector, and the microfinance companies, which have been in bad news of late due to inadequate studies in the sector to unearth all the possible causes of loan default that affects these companies.

II. Further research on the topic is recommended to be conducted in the universal banking sector since NPA rate is a canker not only in the S&L companies but also in the overall banking sector.

III. It is further recommended that a study be conducted to ascertain the impact of bank specific and macroeconomic indicators, on the profitability performance of the S&L subsector.

IV. The study gathered responses from only the officials of the banking intuitions. It is therefore recommended that further research should be conducted to include responses from customers on the causes of loan defaults.

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APPENDIX 1

CANARA BANK SCHOOL OF MANAGEMENT STUDIES (CBSMS)
BANGALORE UNIVERSITY, BANGALORE INDIA
RESEARCH QUESTIONNAIRE

Introduction:

The intention of this questionnaire is to seek responses for issues pertaining to Credit Risk Management and its relationship with the profitability of the Savings and Loans Companies in Ghana. The exercise is purely for academic purpose and respondents' credibility and confidentiality will be highly observed.

PERSONAL PROFILE OF RESPONDENTS

1. Gender
   - ☐ Male
   - ☐ Female
2. Name of S&L company……
3. How long have you been an employee of this company
   - ☐ 0 -1 year
   - ☐ 1 - 5 years
   - ☐ 5- 10years
   - ☐ 10– 15 year
   - ☐ 15 + years
4. Which of these best describes your position in the company? Please tick the correct answer
   - ☐ Credit/Recovery officer
   - ☐ Risk/compliance officer
   - ☐ Branch Manager
   - ☐ Credit Manager
   - ☐ Senior executive
5. How long have you been involved in credit administration?
   - ☐ 0 -1year
   - ☐ 1 - 5years
   - ☐ 5- 10 years
   - ☐ 10 – 15 years
   - ☐ Above 15 years

RISK AWARENESS

6. **Which of the following type of risks affects your daily operations most in terms of its frequency of occurrence?**

	Very frequent	Frequent	Neither frequent nor Infrequent	Infrequent	Very Infrequent
6a. Credit risk					
6b. Market risk					
6c. Operational risk					

CAUSES OF NON-PERFORMING ASSETS

7. Please indicate your agreement or disagreement with the following factors in their ability to cause NPAs.

	Strongly agree	agree	Neither agree nor disagree	Disagree	Strongly disagree
7a. Inexperienced loan officers					
7b. Lack of adequate collateral					
7c. Inadequate loan screening and documentation					
7d. Repayment frequency					
7e. Interest on loan					
7f. Sector of the customer's business					
7g. Multiple borrowing by customers					
7h. Lack of Post disbursement monitoring					
7i. Diversion of funds					
7j. Influential loans/political loans					
7k. Fraudulent loan officers					
7l. Loan size					
7m. Credit history of customer					
7n. Insufficient disposable income					
7o. Delay in taking decision on loan (approval)					

7p. Natural disasters

7q. Economic state of the country

IMPACT OF NPAs

8. Please indicate your agreement or otherwise to these resultant effects of NPLs on the operational activities of your S&L company.

	Strongly agree	agree	Not sure	disagree	Strongly disagree
8a. Decrease in working capital					
8b. Increase in loan recovery expenses					
8c. Increase in provision for bad debt					
8d. Leads to high pricing of loan (interest rate)					
8e. Stagnation of salary increment of employees					
8f. Demoralizing loan officers					
8g. Reduction in profit					

CREDIT RISK MANAGEMENT PRACTICES

9. Please rank the following risk management measures in your company in terms of its effectiveness in mitigating risk

	Highly effective	effective	Neither effective nor ineffective	Ineffective	Highly ineffective
9a. Insurance cover					
9b. Collateral pledge					
9c. Credit reference bureau checking					
9d. Loan application review by risk officers					
9e. Personal Guarantor					

9f. Cash flow analysis

9g. Post-sanction relationship management

9h. Regular monitoring

9i. Background check on customer

10. Please indicate the existence of or otherwise of the following credit risk management practices in you company

	Yes	**No**
10a. Do your company have internal rating system in place		
10b. Does the bank has adequate system in place to identify and monitor risk on an ongoing basis		
10c. Does your S & L company has credit rating score models		
10d. Is there existence of sensitivity of portfolio exposure indicators to underlying risk factors		

DIFFICULTIES IN LOAN RECOVERY

11. From your own experience, how difficulty is the enforcement of the following recovery measures?

	Highly difficult	**difficult**	**Neither difficult nor not difficult**	**Not difficult**	**Highly not difficult**
11a. Disposing off collateral					
11b. Guarantor enforcement					
11c. Claiming of insurance					
11d. Pursuit of legal action					
11e. Use of recovery agencies					

APPENDIX 2

CANARA BANK SCHOOL OF MANAGEMENT STUDIES (CBSMS)

BANGALORE UNIVERSITY, BANGALORE INDIA

INFORMED CONSENT FORM

Dear Respondent,

You are invited to participate in an academic research study on the topic: "**Credit Risk Management and Profitability in Select Savings and Loans Companies in Ghana"** which is been undertaken by Kwadwo Boateng, a PhD research scholar from the Department of Management, Canara Bank School of Management Studies, Bangalore University, India.
The purpose of this study is to find the relationship between credit risk management and profitability in the Savings and Loans Companies in Ghana
Pease note the following:

- This study involves the use of questionnaires. Your name will not appear in the study and answers you give will be treated as strictly confidential. You cannot be identified in person based on the answers you provide.
- Your participating in this study is very important to us. You may however, choose not to participate and you may also stop participating at any time without any negative consequences
- The results of the study will be used for academic purposes only and may be published in an academic journal. We will provide you with a summary of our findings on request.
- Please contact my supervisor, Professor Y. Nagaraju on (+919448558169) if you have question or comments regarding the study.

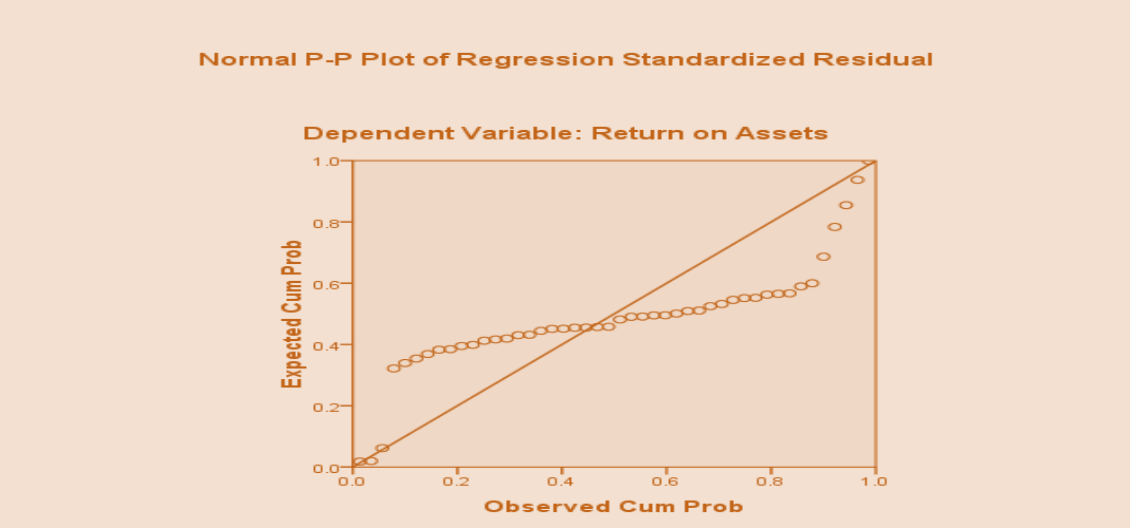
Please sign the form to indicate that:

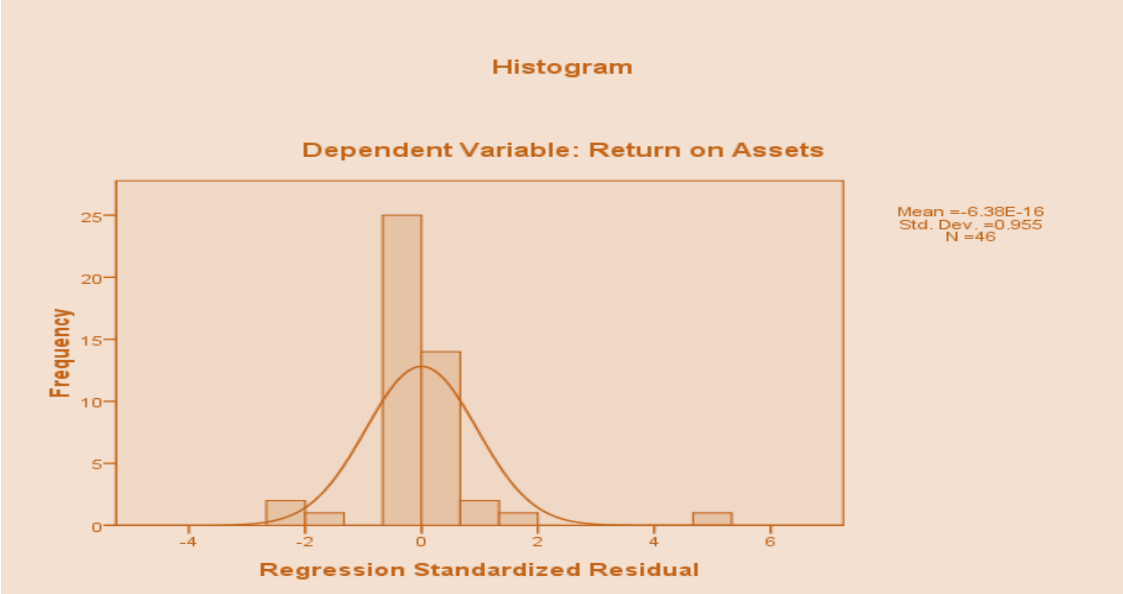
- You have read and understood the information provided above
- You give your consent to participate in the study on a voluntary basis

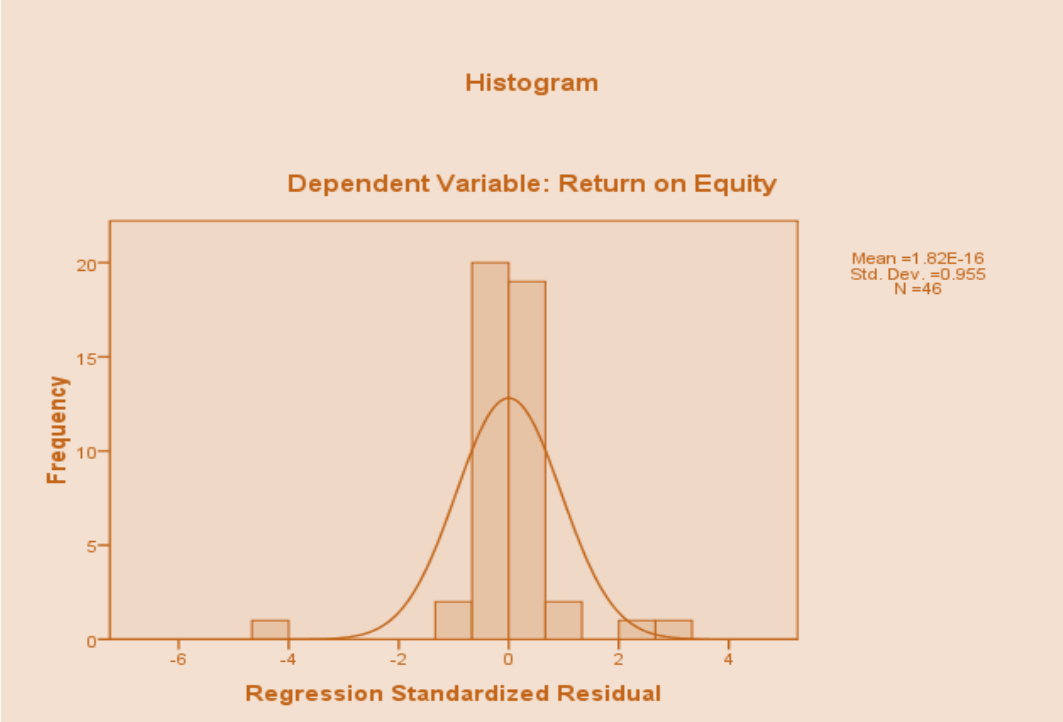
Respondent's signature: _____ Date: ----------

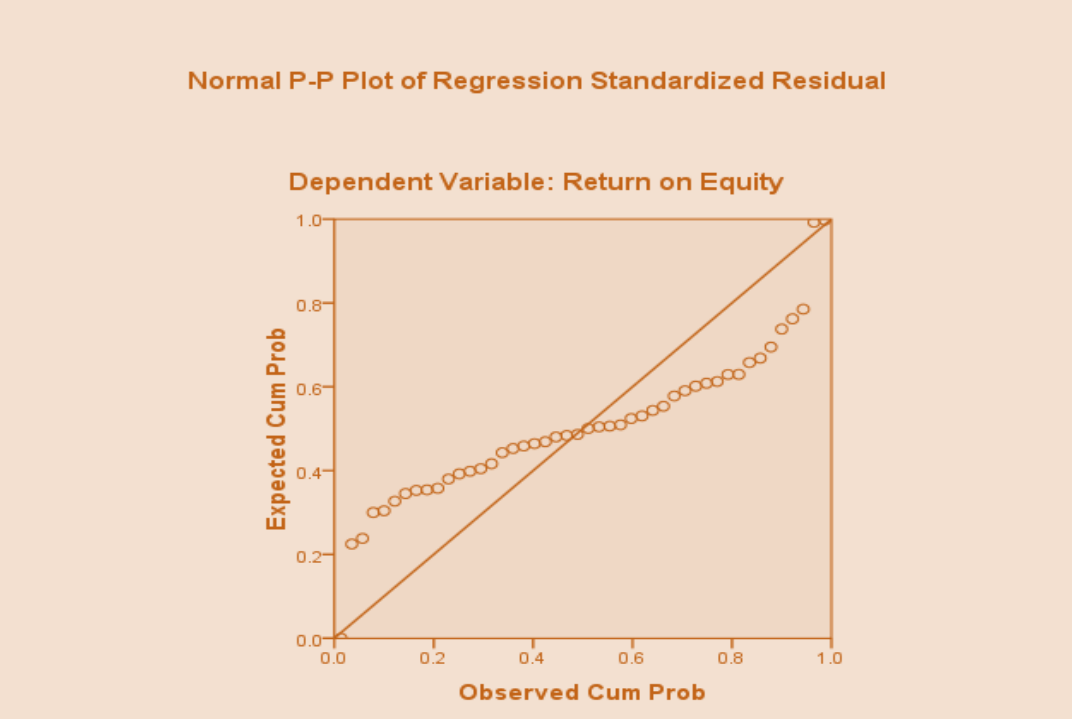
APPENDIX 3

NORMALITY GRAPHS






Histogram
Dependent Variable: Return on Equity
Mean =1.82E-16
Std. Dev. =0.955
N =46
Frequency
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Return on Equity
Expected Cum Prob
Observed Cum Prob

APPENDIX 4

Summary statistics of the study Variables: 2011 - 2016

YEAR	2011	2012	2013	2014	2015	2016
ROA						
Mean	-0.007	0.013	0.040	0.004	0.016	-0.055
Standard Deviation	0.052	0.010	0.079	0.070	0.015	0.170
ROE						
Mean	0.151	0.071	-0.340	0.035	0.063	-0.725
Standard Deviation	0.486	0.086	0.079	0.174	0.084	2.107
NPLR						
Mean	0.045	0.048	0.121	0.190	0.056	0.304
Standard Deviation	0.105	0.024	0.211	0.378	0.035	0.685
CAR						
Mean	0.111	0.148	0.132	0.241	0.224	0.145
Standard Deviation	0.105	0.112	0.166	0.142	0.119	0.068
LA/TD						
Mean	1.250	0.636	0.667	0.587	0.524	0.414
Standard Deviation	0.030	0.328	0.296	0.294	0.248	0.207
LNTA						
Mean	17.050	17.473	17.756	18.437	18.526	18.768
Standard Deviation	1.774	1.261	1.460	1.317	1.401	1.535

Source: research data

APPENDIX 5

Profitability Indicators of Deposit Money Banks in Ghana

Indicators	2014	2015	2016	2017
Return on Equity (ROE)	32.3	21.4	17.l	18.7
Return on Assets (ROA)	6.4	4.5	3.82	3.6
Return on Earning Assets	8.6	6.1	5.07	4.7
Net Interest Spread (NIS)	12.9	12.5	11.4	10.2
Cost to Income Ratio	49.2	53.2	57.4	59
Net Interest Margin (NIM)	13.6	13.8	13	11

Source: Bank of Ghana annual report (2017)

APPENDIX 6

Deposit Money Banks' Credits by Sectorial Distribution

	Levels			Year- On-Year Variations (%)		
	Dec.-15	Dec. -16	Dec.-17	Dec.-15	Dec. -16	Dec.-17
Public Sector Banks	3,896.00	5,435.50	3,842.50	27.40	39.30	-29.20
Private Sector Banks	26,203.10	29,983.50	33,819.30	24.50	14.40	12.80
Agric, For. & Fish	1,020.70	1,130.60	1,343.50	14.70	10.80	18.80
Export Trade	145.00	162.30	314.80	-36.10	11.90	94.00
Manufacturing	2,363.80	2,576.00	2,930.90	20.40	9.00	13.80
Import Trade	2,140.90	2,048.40	1,868.40	16.90	-4.30	-8.80
Construction	2,759.90	3,133.60	3,707.90	25.20	13.50	18.30
Commerce & Finance	4,309.00	7,013.40	7,156.70	40.30	62.80	2.00
Electricity, Gas, Water	3,307.50	3,445.60	2,898.00	62.10	4.20	-15.90
Services	5,866.90	5,591.10	6,238.00	24.30	-4.70	11.60
Miscellaneous	2,548.90	2,925.50	4,071.60	16.70	14.80	39.20
Total	**30,099.10**	**35,409.00**	**37,661.80**	**24.90**	**17.60**	**6.40**

Source: Bank of Ghana annual report (2017)

APPENDIX 7: Total variance explained and component matrix of types of risk

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.644	54.816	54.816	1.644	54.816	54.816
2	.828	27.588	82.403			
3	.528	17.597	100.000			

Extraction Method: Principal Component Analysis.

Component Matrix[a]

	Component
	1
Credit Risk	.833
Operational Risk	.719
Market Risk	.658

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

APPENDIX 8: Total variance explained and rotated component matrix of NPL causing factors

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.285	19.321	19.321	3.285	19.321	19.321
2	1.999	11.757	31.078	1.999	11.757	31.078
3	1.846	10.857	41.935	1.846	10.857	41.935
4	1.381	8.124	50.059	1.381	8.124	50.059
5	1.213	7.136	57.195	1.213	7.136	57.195
6	1.075	6.325	63.520	1.075	6.325	63.520
7	1.017	5.981	69.502	1.017	5.981	69.502
8	.955	5.619	75.121			
9	.835	4.910	80.031			
10	.674	3.962	83.993			
11	.586	3.448	87.442			
12	.493	2.900	90.342			
13	.423	2.487	92.829			
14	.373	2.195	95.025			
15	.352	2.071	97.096			
16	.257	1.509	98.605			
17	.237	1.395	100.000			

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component		
	1	2	3
Inadequate screening	.817		
Inexperience Loan Officers	.778		
Diversion of funds	.475		
Lack of post disbursement monitoring	.451	.379	
Lack of adequate collateral	.444		.364
Fraudulent loan officer	.437	.394	.402
Insufficient disposable Income		.718	
Delay in taken decision on loan(approval)		.637	
Multiple borrowing		.491	
Credit History	.455	.465	
Economic State of the country		.451	
Interest on loan		.344	
Natural disasters			
Repayment frequency			.721
Sector of business			.674
Loan size			.651
Influential/political loans	.393		.439

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

APPENNDIX 9: Total Variance explained and Rotated Component Matrix of factors of impact of NPLs

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.246	32.079	32.079	2.246	32.079	32.079	1.919	27.410	27.410
2	1.337	19.106	51.185	1.337	19.106	51.185	1.340	19.142	46.553
3	1.014	14.481	65.667	1.014	14.481	65.667	1.338	19.114	65.667
4	.841	12.017	77.683						
5	.713	10.191	87.875						
6	.508	7.254	95.129						
7	.341	4.871	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component		
	1	2	3
Increase in provision for bad debt	.811		
reduction in profit	.806		.301
Increase in loan recovery expenses	.654	.371	
Decrease in working capital		.743	
dumping of moral spirit of loan officers		.574	
stagnation of salary increment of employees			.907
Leads to high loan interest rate		.557	.599

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

APPENDIX 10: Total Variance explained and Rotated Component Matrix of Effectiveness of Credit risk management practices factors

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.415	37.947	37.947	3.415	37.947	37.947
2	1.433	15.925	53.872	1.433	15.925	53.872
3	1.130	12.556	66.428	1.130	12.556	66.428
4	.989	10.984	77.412			
5	.604	6.706	84.118			
6	.461	5.126	89.244			
7	.427	4.743	93.987			
8	.302	3.353	97.340			
9	.239	2.660	100.000			

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component		
	1	2	3
Insurance cover		.825	
Collateral Pledge		.873	
Credit reference bureau checking	.673		
Risk review by risk officer	.666	.465	.359
Peronal Guarantor	.883		
cash flow analysis	.473		.705
Post-santion relationship managment	.347		.554
Regular monitoring			.881

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

APPENDIX 11: Total Variance explained and Rotated Component Matrix of factors of Difficulties in Loan Recovery

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.129	42.574	42.574	2.129	42.574	42.574	1.972	39.446	39.446
2	1.211	24.223	66.797	1.211	24.223	66.797	1.368	27.352	66.797
3	.778	15.559	82.357						
4	.540	10.806	93.163						
5	.342	6.837	100.000						

Extraction Method: Principal Component Analysis.

Rotated Component Matrix[a]

	Component	
	1	2
pursuit of legal action	.850	
use of recovery agencies	.814	
Disposing of collateral		.841
Guarantor enforcement	.565	.648
claiming of insurance	.436	.474

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

APPENDIX 12: List of Savings and Loans Companies in Ghana - 2017

SI No.	Name of Institution	Address
1	ABii National Savings and Loans Ltd.	Priority House, Adjacent C.Woermann, Avenor Junction Or P. O. Box CT10067, Cantonments Accra
2	Adehyeman Savings and Loans Company Ltd.	No. 58 Faanofa Street, Kokomlemle (Near Avenor Traffic Light) Or P.O. Box GP 13249, Accra - Ghana
3	Adom Savings and Loans Ltd.	Ayikai Street, Abossey Okai Opposite Mamprobi Trotro Station, Kaneshie or P.O. Box CT 18454, Cantonments, Accra
4	Advans Ghana Savings and Loans Ltd.	Ground floor Oxford Cinema building (Accra New Town) Or P. O. Box AN 11426 Accra – North
5	Alpha Capital Savings and Loans Ltd	No. D 422/4 Liberty Link Adabraka Or P.O. Box CT 10339 Cantonments Accra
6	Asa Savings and Loans Company Ltd.	H/No 612 South Odorkor, Busia Junction, Odorkor-Mallam Road Or P. O. Box MP 1834 Mamprobi Accra
7	Assurance Savings and Loans Ltd.	1st Floor, Gina Villa, Achimota School, GIMPA Road Accra

		Or P.O. Box KIA 16192 Accra
8	Bayport Savings and Loans Ltd.	71 Osu Badu Street, Airport West, Accra PMB 248, Accra North, Accra
9	Best Point Savings and Loans Ltd.	Old Peace FM Building Mile 7, Off Achimota-Ofankor Road Or P. O. Box CT 10191 Cantonments Accra
10	Bond Savings and Loans Ltd	Bond House, Meridian Road Community 2, Tema Or P.O Box CO PMB 95, Tema
11	CDH Savings and Loans Ltd.	CDH House, No. 36 Independence Avenue, North Ridge, Accra Or P.O. Box 14911 Accra
12	Commerz Savings and Loans Ltd.	No. 54 Olusegun Obasanjo Highway opposite Accra Girls' Senior High School, Accra Or P.O. Box GP 21835 Accra
13	Direct Savings and Loans Limited	No. 42A, Asofoanye A. Opeku Avenue, North Dzorwulu, off the Fiesta Royal Hotel and GIMPA Road. or P.O. Box CT 8360CantonmentsAccra
14	Equity Savings and Loans Ltd.	No. 16 Maseru Avenue, East Legon Or P.O. Box CT 6382 Cantoments Accra
15	Express Savings and Loans Company Ltd	No. 2 Bobolink Because Junction Tesano-Abeka Road Or P.O. Box AN 10476 Accra- North
16	First Allied Savings and Loans Co. Ltd.	OTB 662 Asomfo Road Adum ,Kumasi Or P. O. Box 5308

		Adum, Kumasi
17	First Ghana Savings and Loans Company Ltd	FGSL House No. 10.44, Opposite Former Public Procurement Authority Building Ringway East Or P.O. Box 2958Accra
18	First Trust Savings Loans Ltd.	First Trust Towers George Walker Bush Highway Dzorwulu Or P.O. Box AN 5261, Accra-North
19	First African Savings & Loans Company Ltd	No. 124, Kwame Nkrumah Avenue, 1st African House, (Former PTC Building) P.O. Box AN 11337, Accra- North
20	Global Access Savings and Loans Company Ltd.	Citizen Kofi Building Osu, Accra Or P. O. Box AT 1479 Achimota Accra
21	Golden Link Savings and Loans Ltd	2 North Street, Tesano Or P.O. Box 14117 Accra
22	Golden Pride Savings and Loans Ltd	House No. E187/9, 5th Estate Road, Kanda Or P.O. Box TU 66 Accra
23	Jins Savings and Loans Ltd	P.O. Box OF 402 Ofankor – Accra
24	Legacy Capital Savings and Loans Ltd.	House No. 359/1 – 3rd Kuku Hill Crescent Osu – Accra Or P. O. Box GP 19210Accra
25	Midland Savings and Loans Company Ltd.	No. 7 Nii Yemoh Avenue OIC Road Zion House 2nd Floor Shiashie, East Legon Or P. O. Box CT 3744 Cantonments – Accra
26	Multi Credit Savings and Loans Co. Ltd.	Trust House Bantama High Street P.O. Box 1920, Kumasi – Ashanti
27	Opportunity International	No. D765/3 Kwame Nkrumah Avenue Or P. O. Box JT

	Savings and Loans Co. Ltd	323 James Town Accra
28	Pacific Savings & Loans Co. Ltd.	Plot Q.T.B, Adum, Kumasi Or P.O. Box KS 1922, Kumasi - Ashanti
29	Pan - African Savings and Loans Company Ltd.	No. 19 Seventh Avenue (Mayor Road), West Ridge, Accra Or PMB CT 127 Cantonments Accra
30	Progress Savings and Loans Limited	No. 7 Nii Yemoh Avenue OIC Road 3rd Floor Zion House Shiashie, East Legon Accra Or P. O. Box ST 237 Accra
31	Services Integrity Savings and Loans Ltd.	Block 1, Labadi Villas, Business Center Giffard Road, Burma Camp Accra Or PMB, Burma Camp Post Office Accra
32	SIC Life Savings and Loans Ltd.	Room 108 Swanzy Shopping Arcade Kwame Nkrumah Avenue SIC Life Trust Finance Ltd P. O. Box KN 4768 Kaneshie Accra Adabraka - Accra
33	Sinapi Aba Savings and Loans Company Ltd	22A Ellis Avenue Or P. O. Box 4911, Nhyiaeso Kumasi
34	The Seed Funds Savings and Loans Ltd.	Plot 32, 6 Circular Road P.O. Box CT 11172 Cantonments - Accra
35	uniCredit Savings and Loans Ltd.	UniCredit Ghana Limited No. 3 North Ridge Lane North Ridge, Accra. Or P. O. Box GP 18729 Accra
36	Utrak Savings and Loans Ltd	Opposite Mckeown Pentecost Church, Behind former spirit FM, Asokwa, Kumasi Or P. O. Box UP 1011, Kumasi
37	Women's' World Banking Savings and Loans Co. Ltd	Global Haulage Complex Near Tesano Police Station, Accra Or P.O. Box 2989 Accra.

Source: BoG annual report (2017)