Volume 18 Issue 44
Originally issued as C7



Global Journal of Management and Business Research: C Finance
Volume 18 Issue 7 Version 1.0 Year 2018
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals
Online ISSN: 2249-4588 & Print ISSN: 0975-5853

The Impact of Credit Risk Management on the Performance of Commercial Banks in Cameroon. Case Study of BICEC Cameroon

By Fabrice Tchakounte Kegninkeu

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GJMBR-C Classification: *JEL Code: E59*



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Chapter One

I. Introduction

a) Background of the study

With the major functions of accepting deposits from customers and granting funds out in the form of loans, thus performing a middle man role between surplus spending and deficit spending units (known as financial intermediation), Commercial Banks have expanded significantly over the past decades all over the globe.

In the USA for instance, the Federal Reserve released a listing of the US largest banks ranked by consolidated assets expressed in Million US Dollars ($), in which the first three are JP Morgan Chase BANK, Bankof America, and Wells Fargo Bankwith consolidated assets of 1.945.467, 1.433.716 and 1,373,600 respectively as of 31st December 2013.

In China, the China Banking Regulatory Commission (CBRC)(2012) published a report, in which the threelargest banks in China are, in order of decreasing size, Industrial and Commercial Bank of China (ICBC), China Construction Bank (CCB),and Bank Of China (BOC) with IPOs in 2006 of respectively US $22 Billions, US $17Billions and US $13 Billion added to their capital.

Furthermore,in Africa, on one hand,the Ghanaian banking system is made up of 26 banks operating in the country among which the first group of the six largest ones including Ghana Commercial Bank Ltd (GCB), Standard Chartered Bank Ltd (SCB), Barclays Bank of Ghana Ltd (BBGL), Ecobank Ghana Ltd (EBG), Agricultural Development Bank (ADB), and Standbic Ghana Bank. Their total operating assets cumulatedincreased by 95% from GH¢4.3billion (2007) toGH¢8.4billion (2010) according to the Bank of Ghana statistics.

On the other hand, commercial banks have also been active in the Nigerian economy for many centuries now. According to the IMF Country Report N°13/146 of May 2013, Nigeria has a financial sector made up of thousands of financial institutions among which there exist 21 commercial banks with a total banking sector assets of ₦18.21 Trillion as at end December 2011, which represented 53.6% of the country's GDP.

The 3 biggest banks in Nigeria include First Bank of Nigeria with total assets worth $18.6 Billion approximately, followed by Zenith Bank PLC with $14.147 Billion and United Bank for Africa that has total assets of $11.901 Billion.

In addition, commercial banking is also present and active in the northern part of the continent, namely in Egypt where Business Directory evaluated and compared the performance of banks nationwide. From a total of 39 commercial banks, the top 3 are the following: Commercial International Bank(CIB) with total assets of about $14.8 Billion and made profits of $ 319.4 Million, followed by the National SociétéGénérale Bank (NSGB) with $222.8 Million in profits and total assets of $9.6 Billion, and Credit Agricole Egypt (CAE) came third with profits of $68.3 Million with total assets totaling about $4.1 Billion.

More so, banks have also evolved in Cameroon over the years and have played a key role in the financial system. The Cameroonian banking system is constituted of 13 commercial banks among which the first three banks are SociétéGénérale de Banques du Cameroun (SGBC), BanqueInternationale du Cameroun pour l'Epargne et le Crédit (BICEC) and Afriland First Bank with respective capital of 12,5Billion XAF, 12Billion XAF and 15,8Billion XAF. And in terms of total assets, SGBC registered 668.661Billion XAF, followed by BICEC with 658.468Billion XAF and Afriland First Bank with 654.902 Billion XAF.

Cameroon experienced a severe economic crisis in the early 1990's which resulted to a drop of 50% in the value of its currency, the CFA Franc which used to

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be pegged to the former French Franc.Then, the banking system watched the failure of two major banks namely with the liquidation of BanqueMeridien BIAO Cameroun (BMBC) in 1996, and Credit Agricole du Cameroun (CAC) in 1997.

Although COBAC put in place better policies and prudential norms to ensure the stability of the system, it still experienced the failure of Amity Bank PLC in 2008 whose assets were bought over by BanqueAtlantique in May 2009 and later in 2011, Union Bank of Cameroon PLC was recapitalized by Oceanic Bank Nigeria and which was bought over just recently by ECOBANK.

Also, the Commercial Bank of Cameroon (CBC) which is typically owned totally by Cameroonians faced financial difficulties for many years and is currently under restructuring.

Also, some Microfinance Institutions collapsed recently such as FIFFA, and COFINEST just to mention those two.

These various bank crises may lead to a reflection that the risks involved in the banking activity is one to take in consideration to the greatest extend, be it the liquidity risk, the credit risk, the foreign exchange risk, the market risk or the operational risk. Risk management tools should be as efficient and effective as to be able to mitigate those latter risks inherent to the banking business.

b) Problem Statement

Despite all efforts put in place by commercial banks in Cameroon, their credit risk in the form of non-performing loans still exists on their bank's loan portfolio. In addition, the credit experts of these banks sometimes have overlapping functions, which result to them being mixed up with the type of risk to focus on, since other types of risks such as interest rate risk, market risk, liquidity risk, currency risk and operational risk also exist. Also, with the information asymmetry that exists between borrowers and lenders, it had led to credit experts to be more likely to select projects that are dubious than those that will succeed to grant financing.
Based on the above problems, the following questions were asked:

- What are the various risk management tools used by the bank?
- How efficient are the loan assessment techniques of the institution?
- What sources of information are available for loan officers for use in loans assessment?

c) Objectives of the study

The main objective is to study and examine the impact of credit risk management on the performance of commercial banks.

The specific objectives include:

- To find out the various risk management tools used by the bank to manage credit risk.
- To evaluate the efficiency of loan assessment techniques of the institution.
- To investigate the problems associated with credit risk management at the bank.
- To make necessary recommendations based on findings.

d) Hypotheses of the study

To accomplish the aim of this research project, the following hypotheses have been posed:

1. H_0: Credit risk management does not affect profitability
2. H_1: Credit risk affects profitability.

e) Significance of the study

The conclusions and recommendations of the study will be of great importance to BICEC and other banks, to the Banking Commission of Central Africa (COBAC) or Ministry of Finance, to customers as a whole and to students.

To BICEC and other banks, the findings will assist their loan experts to know more about the impact of credit risk management and help them to upgrade the effectiveness of their techniques in order to mitigate the number of non-performing loans that affect their profitability.

To COBAC and MINFI, the study will be of great importance in knowing more about impact of effective credit risk management and help their officials to develop more efficient policies for controlling credit default risk.

To customers, this research will help them to be aware of the various tools used by banks to assess their loan applications and also to be able to meet up with the requirements to obtain credit.

To students, it would serve as a guide for doing further research in banking and finance and in other fields of study.

f) Delimitation of the study

The main aim of this study is to examine the impact of credit management on the performance of commercial banks in Cameroon. The case study here is the Bamenda branch of BICEC.

g) Organization of the study

This write up is organized in five chapters as follows: Chapter one provides the background information, the problem statement, the study objectives, significance and delimitations. Chapter two gives the literature review. Then Chapter three describes the methodology of the study and Chapter four gives the analysis and discussions and finally Chapter five is the conclusion.

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Chapter Two

II. Literature Review

The purpose of this chapter is to examine what has been written by other scholars in relation to this research topic. Therefore, we are going to review various concepts, models, principles and definitions put forward by other scholars and how they can help to achieving our research objectives.

a) Conceptual literature

i. *Risk*

Risk can be defined as the uncertainty of outcome. There exists two types of risks, namely pure risk (risk that leads only to a loss such as flood, fire or accident) and speculative risk (risk that either a loss or a profit can occur such as a business venture). Risk contains many possible outcomes and we can determine the probability that an event will occur. We must note that taking risk is a part of the essence of management but it should not be taken unnecessarily and foolishly. We must take calculated risk i.e. balancing risk against rewards. There are a many risks that affect financial institutions; they include interest rate risk, market risk, liquidity risk, currency risk, operational risk, off-balance sheet risk, legal and compliance risk reputation risk, strategic risk, and capital risk. These various risks will be briefly discussed further below.

ii. *Loans*

Faure (2013) defines bank loans as advances and credit. This proportion of the bank's balance sheet makes up the vast majority of their assets. There are two categories of loans: Non-marketable debt (NMD) (made up of loans to non-banks and interbank loans) and Marketable debt (MD), i.e. investments. The author pursued that the majority of bank loans are NMD.

On the other hand, Peter S. and Sylvia C. (2010), emphasize on the various loan types which include real estate loans, financial institution loans, agricultural loans, commercial loans, consumer loans, lease financing receivables and miscellaneous loans.

iii. *Credit risk*

The Global Association of Risk Professionals (GARP) defines credit risk (also referred to as default risk) as the potential for a loss due to failure of a borrower to meet its obligations to repay a debt in accordance with agreed terms. A home owner stops making mortgage payments is an example of credit risk. According to the GARP, for banks, credit risk typically resides in the assets in its banking book (loans, and bonds held to maturity) and can arise in the banking book as counterparty credit risk.

Faure (2013) defined credit risk as the risk that the borrower from a bank will default on the loan and/or the interest payable, i.e. that it will not perform in the conditions under which the loan was granted. According to the author, credit risk is damaging to the bank, not only because of the actual loss eventually incurred, but also in terms of the time that management and bank counsel expend on attempting to recover the loss or a portion of the loss.

In the same line, two other authors, Peter S. Rose and Sylvia C. Hudgins (2010) defined credit risk by the following illustration. Financial intermediaries make loans and take on securities that are nothing more than promises to pay. When borrowing customers fail to make some or all of their promised payments, these defaulted loans and securities result in losses that can eventually erode capital.

Donald et al, (1996) defines credit risk simply as the potential that a bank borrower or counterpart will fail to meet its obligations in accordance with agreed terms.

iv. *Credit risk management*

Gestel and Baesens (2009) defined credit risk management as a process that involves the identification of potential risks, the appropriate treatment and the actual implementation of risk models.

Secondly, according to Basel Committee on Banking Supervision, (2009), credit risk management is a set of sound practices such as establishing an appropriate credit risk environment, operating under a sound credit-granting process, maintaining an appropriate credit risk measurement and monitoring process and ensuring adequate controls over credit risk. Greuning and Iqbal(2007) defined credit risk management as a structured approach to managing uncertainties through risk assessment, developing strategies to manage it, and mitigation of risk using managerial resources. The strategies include transferring to another party, avoiding the risk, reducing the negative effects of the risk, and accepting some or all of the consequences of a particular risk. The process of risk management is a two-step process. The first is to identify the source of the risk, which is to identify the leading variables causing the risk. The second is to devise methods to quantify the risk using mathematical models, in order to understand the risk profile of the instrument. Once a general framework of risk identification and management is developed, the techniques can be applied to different situations, products, instruments and institutions. It is crucial for banks to have comprehensive risk management framework as there is a growing realization that sustainable growth critically depends on the development of a comprehensive risk management framework.

v. *Commercial Banks*

These are banks that perform all kinds of banking businesses and generally finance trade and commerce. Since their deposits are for a short period, these banks normally advance short term loans to businessmen and traders and avoid medium term and

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long term lending. However, recently, the commercial banks have also extended their areas of operation, to medium terms and long term finance. Commercial banks are also called joined stock banks.

According to Peter S. and Sylvia C., a commercial bank is defined as a bank that sells deposits and makes loans to businesses and individuals. In the same line, Tegwi (2010) defined commercial banks as profit making institutions that receive deposits from the public, safeguard them, and make them available on demand and make loans or create credit. He went further by giving their functions among which the main ones are accepting deposits, lending (by granting loans, overdrafts and by accepting bills) and agents of payment (by cheques, credit transfer, credit card, standing order). Other functions of commercial banks include providing cash dispensers, buying and selling of shares and stocks for customers in the stock exchange market, giving investment and financial advices to customers, providing travelers cheques to facilitate foreign trade, providing bank statements, acting as executors and trustees,and safe-keeping of valuables such as jewelries, documents and certificates.

vi. *Banks performanceand its determinants*

Illmer (2010) defines performance as one the words which definition is very flexible as everyone places the concept that suits best and letting the context take care of the definition. Nevertheless, in general terms, performance can be seen as the results of activities (e.g. of an organization) over a given period of time.He added that performance measurement is the process of qualifying the efficiency and effectiveness of past action. More concrete performance measurement is the process of measuring how well organizations are managed against their targets and the value they generate for their stakeholders.

According to Athanasoglou et al (2005), the role of banks remain central in financing economic activity and its effectiveness could exert positive impact on overall economy as a sound and profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system.

During the last decades, the banking system has experienced worldwide major transformations in its operating environment. Both external and domestic factors have affected its structure and performance.

Yuqi Li explained that the internal determinants refer to the factors originating from bank accounts (balance sheets and/or profit and loss accounts) and therefore could be termed micro or bank specific determinants of profitability. The external determinants are variables that are not related to bank management but reflect the economic and legal environment that affects the operation and performance of financial institutions. A number of explanatory variables have been proposed for both categories, according to the nature and purpose of each study.

Studies dealing with internal determinants employ variables such as size, capital, risk management, and expenses management. Akhavein et al. (1997) and Smirlock (1985) find a positive and significant relationship between size and bank profitability.

Turning to external factors, Athanasoglou et al. (2005) observes several factors have been suggested as impacting on profitability and these can be further distinguish between control variables that describe the macroeconomic environment, such as inflation, interest rates and cyclical output, and variables that represent market characteristics such as market concentration, industry size and ownership status.

b) Review of Related Literature

i. *Types of risks affecting banks*

Commercial banks activities, such as borrowing and lending for various periods, and at various rates of interest engaging in many other interest-rate related activities, dealing in foreign exchange, undertaking different investments and dealing in derivatives markets make it to be exposed to a variety of risks like no other institution. The risks faced by banks apart from credit risk include the following: interest rate risk, market risk, liquidity risk, currency risk, operational risk, off-balance sheet risk, legal and compliance risk, reputation risk, strategic risk and capital risk. Each of these will be briefly discussed below.

a. Interest rate risk

Faure (2013) defines it as the risk of expected earnings being influenced negatively as a result of changes in the pattern and level of interest rates. In other words, it is the impact of changing interest rates on a financial institution's margin of profits.

More so, Hudgins et al. (2010) relates interest rate risk to the impact of changing interest rates on a financial institution's margin of profits. Movements in market interest rates can also have potent effects on the margin of revenues over costs for banks. For example, rising interest rates can lower the margin of profits if the structure of financial institution's assets and liabilities is such that interest expenses on borrowed money increase more rapidly than interest revenues on loans and security investments.

b. Market risk

Also called position risk, trading risk or price risk, it is the risk of a decline in the market value of financial securities (shares, debt and derivatives) that is caused by unexpected changes in market prices and interest rates, and changes in credit spreads.

Aaron Hou further defined it as the potential loss resulting from declining prices in the financial market. It includes stochastic market risk factors such

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as interest rate, FX, commodity and equity. There are two drivers of the market risk exposure: investment position and market volatility.

c. Liquidity risk

Liquidity risk for a bank is the risk of not being able to meet obligations in terms of funds demanded by clients. In other words, it is the danger of not having sufficient cash and borrowing capacity to meet with customers' withdrawals, loan demand, and other cash needs.

According to the Working paper series No 1008/Feb 2009 of the European Central Bank, risks relates to the probability of having a realization of a random variable different to the realization preferred by the economic agent. The economic agent will have a preference over liquidity. In that sense, the probability of not being liquid would suggest that there is a liquidity risk. The higher the probability, the higher the liquidity risks. When the probability equals unity (i.e. the possibility becomes a certainty) liquidity risk reaches a maximum and illiquidity materializes.

d. Currency risk

Also called foreign exchange risk (Forex risk), this is the exposure to loss due to the volatile foreign market conditions, changing government rules, and sometimes political instability overseas.

Moreover,Madura (1989) relates exchange rate risk to the effect of unexpected exchange rate changes on the value of the firm. In particular, it is defined as the possible direct loss (as a result of an unhedged exposure) or indirect loss in the firm's cash flows, assets and liabilities, net profit and, in turn, its stock market value from an exchange rate move. There exist three main types of exchange rate risk namely transactional risk, translational risk and economic risk.

e. Operational risk

Operational risk refers to uncertainty regarding a financial firm's earnings due to failure in information technology systems, errors, misconduct by employees, floods, lightning strikes, and similar events. It is also known as the transactional risk.

Faure (2013) expressed that each bank has its unique definition of operational risk. He reviewed a number of them including information technology systems risk, human resources risk, and other external risk. External risk here refer to the risk that parties itself than the bank itself and its employees undertake activities, or fail to deliver essential outsourced services, that harm the bank in a financial or other sense, and natural disasters that affect the services or viability of the business. Examples include a fire at the only checkbook printer in the country which puts it out of business for a long period or a power-delivery blackout for three days.

f. Off-balance sheet risk

One of the newest forms of risk faced by leading financial institutions is associated with the rapid build-up of financial contracts that obligate a financial firm to perform in various ways but are not recorded on its balance sheet. Examples include indemnities, guarantees, irrevocable letters of credit, and underwriting, effective net open position in foreign currencies, portfolios managed by others on behalf of the bank, and securities or commodities broking. These items or instruments are highly complex and volatile in their market values, creating substantial off-balance sheet risk for management to deal with.

g. Legal and Compliance risks

According to Hudgins (2010), legal risk creates variability in earnings resulting from actions taken by our legal system. Unforeseeable contracts, lawsuits, or adverse judgments may reduce a financial firm's revenues and increase its expenses. In a broader sense, compliance risk reaches beyond violations of the legal system and includes violations of the rules and regulations. For example, if a depository institution fails to hold adequate capital; costly corrective actions must be taken to avoid its closure. These corrective actions are laid out in capital adequacy regulations.

h. Reputation risk

Rose et al. (2010) defined reputation risk as the risk associated with public opinion. Negative publicity, whether true or not, can affect a financial firm's earnings by dissuading customers from using the services of the institution, just as a positive publicity may serve to promote a financial firm's services and products.

Perry and Fontnouvelle (2005) defined it as being the potential that negative publicity regarding an institution's business practices, whether true or not, will cause a decline in the customer base, costly litigation, or revenue reductions. Any reputation event that reduces present or future expected cash flows will reduce the equity value of the firm.

i. Strategic risk

Variations in earnings due to adverse business decisions, improper implementation of decisions, or lack of responsiveness to industry changes are parts of what is called strategic risk.

Allan and Beer (2006) define strategic risk as being any risk (threat or opportunity) that materially affects the ability of an organization to survive. All organizations are vulnerable to strategic threats to varying degrees despite their greatest efforts to manage them.

Kambil et al. (2005) study of the 1000 largest international organizations found that nearly half had lost up to 20% of their market value over a month long period in the last decade, with the value losses often taking longer than a year to be regained. When strategic threats occur, the results are devastating and long lasting.

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j. Capital risk

The impact of all these risks can affect a financial firm's long-run survival, often referred to as its capital risk. According to Rose (2010), because of the variability in capital stems for other types of risk, it is often not considered separately by government regulatory agencies. However, risk to the capital that underlies every financial firm captures the all-important risk of insolvency or ultimate failure. For example, if a bank takes an excessive number of bad loans or a large portion of its security portfolio declines in market value, generating serious capital losses when sold, then its equity capital, which is designed to absorb such losses, may be overhelmed0 if investors and depositors become aware of the problem and begin to withdraw their funds, regulators may have no choice but to declare the institution insolvent and close its doors.

ii. *Credit risk management and banks*

As defined earlier, credit risk management as a process that involves the identification of potential risks, the appropriate treatment and the actual implementation of risk models according to Tony Van Gestel and Bart Baesens (2009).

Methods used by banks to mitigate credit risk include: Avoidance, diversification, compensating balances and monitoring business transactions, screening, long-term customer relationships, loan commitments, collateral requirements, credit rationing, specialization in lending and credit derivatives.

a. Avoidance

The obvious approach to alleviating credit risk is to avoid it. This can be achieved by only providing loans to, or buying the bonds of government, the best credit. Government securities are known to be risk-free securities, and because of that, the returns on such investments are the lowest available. Because the return on government securities is the risk-free rate (rfr), all other investment should yield rfr + rp (rp = risk premium).

b. Diversification

Diversification is the first principle of risk management as applied in portfolio theory. Banks do not lend a major proportion of their funds to individual borrowers. Rather, they restrict the amount loaned to a percentage of their capital. They are also diversified across economic sectors and countries. In most countries, the bank regulator or supervisor stipulates a strict constraint in terms of loan concentration.

c. Compensating balances and monitoring of business transactions

Often, loans are granted with the commitment by the borrower of maintaining a balance with the bank. This increases in the likelihood that the loan will be repaid. The commitment may also take the form of a current account with an undertaking that all transactions by the borrower in the business for which the loan was granted are conducted through the current account. This enables the bank to monitor the business of the borrower.

d. Screening

In order to overcome the adverse selection problem, the obvious tool to mitigate credit risk is the careful screening of potential borrowers. This involves information gathering. Much personal information is gathered in from of individuals who wish to borrow, and there are grades of information gathering. In the case of small sum for the purchase of say a washing machine, the information required is far less than that required for the mortgage loan. In the latter case, the information required would include: Work history and record, salary and salary history, other bank accounts, other debt, credit card payment history, statement of liabilities and assets.

In addition to this information, the lender may require references, which in many cases are followed up on, and some lenders (particularly the banks) put in place local boards of directors comprised of persons well known and connected in their relevant areas in order to provide information on the borrower of the area. The information gathered enables the lender to statistically calculate a score for each borrower. It should be apparent that in many cases the score is border line in terms of credit risk, and the lender uses a measure of discretion, rather than send the client off to a competitor.

Information gathering in the case of loans to companies is similar except that much emphasis is placed on past financial statements and a business plan for the future, including of course the purpose for which the loan is required.

e. Monitoring

Monitoring is also an information gathering exercise, but after the event of granting the loan, and this links with the problem of moral hazard. A client may be suitably screened and ultimately selected as a client, but may engage in activities totally different than the actual loan purpose once the money is in his or her hands. To reduce the risk of this coming about, many lenders include restrictive covenants (provisions) in their loan contracts, and monitor adherence or not to these on a regular basis.

f. Long-term relationship building

Lenders encourage long-term relationship building between loan officers of the institution and their clients. This practice reduces the cost of information gathering because records already exist and monitoring procedures are already in place. The borrower also has an incentive for encouraging a long-term relationship with the lender, and this is because a good credit record not only reduces the risk for the lender but also the borrowing rate for the borrower.

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g. Loan commitments

This is another tool of credit risk management and is related to the former. Many lending intermediaries provide borrowers with a commitment of a loan up to a specific amount that can be utilized at any time. This provides the borrower with flexibility in loan utilization, and encourages a long-term relationship with the lender, which in turn reduces the information gathering cost. The loan interest rate reflects the long-term relationship.

h. Collateral requirement

Collateral means the ceding of assets (usually property, equipment financed, the debtors book, deposit, policy at appropriate discounted values) as security for the loan. This is a legal commitment to surrender the underlying assets to the lender in the event of default, which the lender is able to sell in order to recover the amount of the loan. It is known as the lost common method of "insurance" against credit risk, and the problems of adverse selection and moral hazard. A dubious borrower will be reluctant to borrow if collateral is required because she or he has much to lose in the event of default.

i. Credit rationing

Credit rationing takes on two forms: outright rejection and providing less credit that sought. Outright rejection refers to loans where the borrower is willing to pay a higher interest rate to compensate the lender for the risk, but the bank rejects the application because the higher interest rate will contribute toward the failure of the project.

Providing credit less that sought is often a tactic of the lender to prevent moral hazard. A loan that is smaller than sought will tend to ensure that the funds are efficiently allocated, whereas a loan of the desired size may bring about moral hazard.

j. Specialization in lending

Some lenders practice specialization in lending; this may refer to geographic area of industry. In the former case the lenders rely on personal relationships to ensure prompt and full repayment of interest and principal. Certain other lenders specialize in making loans to specific industries. For example, a bank may specialize in leasing contracts with the medical fraternity. The line of reasoning here is that the information costs are reduced because the lending institution is concerned with gathering information about only one industry (and its related industries). The counter-argument is that a downturn in the particular industry may place the bank at risk. This brings one back to the first tool, diversification, which is a major risk mitigation factor.

k. Credit derivatives

The use of credit derivatives consists of the purchase and sale of credit risk across sectors and countries. Credit derivatives are bi-lateral financial contracts with payoffs attached to a credit related event such as a default, bankruptcy or credit downgrade. Generally, the largest banks are net buyers of credit protection.

iii. *Credit assessment of banks*

The bank's division in charge of assessing, analyzing and making recommendations on the destiny of most loan applications is the credit department. Each loan application must be fully examined before the loan request is granted or refused and before offering any credit. The procedures followed by banks in credit evaluation may differ. These stages are the collection of information, credit investigation, financial statement analysis, and project evaluation and perfection and the decision stages.

a. Collection of credit information

When a customer comes for a loan, he will not receive the loan on the same day. He must first fill a loan application form (LAF), giving information of him and other information. Usually, he will be asked by the bank to go and come back later. During this time, the banker will collect the information that will be used to investigate or carry out credit rating to evaluate the credit worthiness of the customer. This information can be from primary and secondary sources. For convenience, they may be classified into five categories:

- Those that come from the credit applicant (loan application form).
- Information from the bank's own records (financial statements).
- Information from other sources (credit agencies, credit bureau).
- The customer's payment history with the firm.
- Credit reports on the customer's payment history with other firms.

This information ensures that the banks laid-down policies and regulatory constraints are followed. The information collected will help to determine the applicant's character, condition, capacity, capital and collateral securities.

b. Credit evaluation

Credit evaluation can also be referred to as loan appraisal techniques. These techniques are quite vital in banking because they usually involves a detailed study of the critical aspects of a loan application known as the 5 C's of credit, namely capital, condition, capacity, character, and collateral.

c. Capital

It is a measure of a customer's assets. If a credit customer's earnings power fails, assets can be sold to repay the loan. It is therefore a very crucial aspect of evaluating credit too. If financial statements are drawn properly, the analyst studies it with attention to either over capitalization or under capitalization. In case of a fall in the customer's earnings power, there is a danger that overdraft will increase or other credit facilities will remain unpaid.

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d. Condition

Conditions of the individual credit customer (how well the business is doing at a given time) and of the economy in general have an important effect on creditworthiness. Therefore, the loan officer and credit analyst must be aware of recent trends in the borrower's industry and how changing economic conditions might affect the loan. A loan can look very good on paper, but one must understand that its value may change because of a decline in sales or income in recession or because of high interest rates occasioned by inflation. In this sense, in order to assess the industry and economic changes, most lenders maintain files of information such as newspapers clipping, magazines articles, and research reports on the industries represented by their major borrowing customers.

e. Collateral

This is anything of value that a borrower promises to give the lender if the borrower is unable to repay the loan. A loan for which collateral is held is said to be a secured loan and that which no security is held is called an unsecured loan. This is an asset pledged by the customer for security in case of default. In assessing the collateral aspect of a loan request, the loan officer must ask: Does the borrower possess adequate net worth or own enough quality assets to provide adequate support for the loan? The loan officer is particularly sensitive to such features as the age, condition and degree of specialization of the borrower's assets. Technology plays an important role here as well. If the borrower's assets are technologically obsolete, they will have limited value as collateral because of the difficulty of finding a buyer for those assets if the borrower's income falters.

f. Character

The loan officer must be convinced the customer has a well-defined-defined purpose for requesting credit and a serious intention to repay. If the borrower is not sure why the customer is requesting a loan, this purpose must be clarified to the lender's satisfaction. The loan officer must determine if the purpose is consistent with the lending institution's loan policy. Even with a good purpose, the credit expert must determine that the borrower has a responsible attitude toward using borrowed funds, is truthful in answering the questions, and will make every effort to repay what is owed. We must underline that responsibility, serious purpose and serious intention to repay all monies owed make up what the loan officer calls character. If the lender feels the borrower is insincere in promising to use borrowed funds as planned and in repaying as agreed, the loan should not be made, it may certainly become a problem credit.

g. Capacity

Here, the lender must be sure the customer has the authority to request a loan and the legal binding to sign a loan agreement. This characteristic is known as the customer capacity to borrow money. For example, in most areas, a minor (under age 18 or 21) cannot legally be held responsible for a credit agreement; lenders will have great difficulty collecting on such a loan. Similarly, the lender must be sure that the representative from a corporation asking for credit has proper authority from the company's board of directors to negotiate a loan and sign a credit agreement binding the company. Usually, this can be determined by obtaining a copy of the resolution passed by the corporate customer's board of directors, authorizing the company to borrow money. In case of a business partnership agreement, the loan officer must ask to see the firm's partnership agreement to determine which individuals are authorized to borrow for the firm. It is important to note that a loan agreement signed by unauthorized persons could prove to be uncollectible and result in substantial losses for the lending institution.

h. Financial statement analysis

This is the quantitative aspect of credit assessment. The financial statements usually required are the Income Statement, the Balance Sheet, Cash flow statements, cash budgets, etc. bankers are advised to ask for cash flows statement because they show the true liquidity position of a business. It is preferable to ask for statements prepared by independent accounting firms. When these statements have been presented by the customer, the banker will carry out a performance assessment by using trend analysis (comparing the figures over a number of years) and ratio analysis. If we are to use ratios, we must calculate ratios like profitability, liquidity, efficiency and stock markets (for listed companies).

iv. *Decision stage*

The decision on whether to give the loan lies in the hands of the credit officer, managers and sometimes the Board of Directors.

c) Empirical literature

Credit risk is the most serious danger or threat to commercial bank's profitability. In this regards, various researchers have examined the impact of credit risk with diverse aspects of banks. This part of our writing provides related empirical findings on the subject matter.

Various empirical findings, both from developed and developing countries have recorded mixed results. Some researchers have noted a negative relationship between either credit risk or credit risk management and profitability or performance of commercial banks; while some found a positive relationship.

Kargi (2011) evaluated the impact of credit risk on the profitability of Nigerian banks. Financial ratios as measures of bank performance and credit risk were collected from the annual reports and accounts of sampled banks from 2004-2008 and analyzed using

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descriptive, correlation and regression techniques. The findings revealed that credit risk management has a significant impact on the profitability of Nigerian banks. It conducted that banks' profitability is inversely influenced by the levels of loans and advances, non-performing loans and deposits thereby exposing them to great risk of illiquidity and distress.

Kithinji (2010) assessed the effect of credit risk management on the profitability of commercial banks in Kenya. Data on the amount of credit, level of non-performing loans were collected for the period 2004 to 2008. The findings revealed that the bulk of the profits of commercial banks are not influenced by the amount of credit and non-performing loans.

Hosna, et al, (2009), in the assessment of the effect of credit risk management and profitability in commercial banks in Sweden used two credit risk indicators (NPLR and ROE). The findings and analysis revealed that credit risk management has effects on profitability in all the 4 banks selected.

IndiaelKaaya and Dickson Pastory (2013), in their study "Credit risk and commercial banks performance in Tanzania", used a sample of 11 banks in Tanzania with secondary research methods and concluded that increase in credit risk tends to lower bank performance, which tends to lower profit level. He added that the bank need to maintain substantial amount of capital reserve to absorb credit risk in event of failure, moreover , the bank need to enhance lending criteria, grading and credit mitigation techniques to reduce chance of default. Meanwhile the adoption of sound practices and corporate governance will reduce credit risk.

Benedikt et al, (2006), examined credit risk management policies for ten banks in the US using a multivariate model and found that banks that adopt advanced credit risk management techniques (proxies by the issuance of at least one collateralized loan obligation) experience a permanent increase in their target loan level of around 50%. Partial adjustment of this target, however, means that the impact on actual loan levels is spread over several years. The findings confirm the general efficiency-enhancing implications of new risk management techniques.

Ngugi, (2010) postulates that in order to determine the needs of the local banking sector with regard to risk management, the central bank of Kenya conducted a survey in September 2004 that would provide a status position on the extent to which risk management is practiced in the financial institutions operating in Kenya. The survey revealed that there is a high level of awareness in banking institutions on the importance of employing systematic methods of identifying, analyzing, and controlling or mitigating risks.

d) Theoretical literature

i. *Portfolio Theory of Credit Risk Management*

According to Margrabe, (2007), since the 1980s, banks have successfully applied Modern Portfolio Theory (MPT) to market risk. Many banks are now using earnings at risk (EAR) and value at risk (VAR) models to manage their interest rate and market risk exposures. Unfortunately, however, even though credit risk remains the largest risk facing most banks, the practical of MPT to credit risk has lagged.

Banks recognize how credit concentrations can adversely impact financial performance. As a result, a number of sophisticated institutions are actively pursuing quantitative approaches to credit risk measurement, while data problems remain an obstacle. Significant progress are been made towards developing tools that measure credit risk in a portfolio context. Credit derivatives are also been used to efficiently transfer risk while preserving customer relationships. The combination of these two developments has precipitated vastly accelerated progress in managing credit risk in a portfolio context over the past several years.

ii. *Asset-by-asset Approach*

Traditionally, banks have taken an asset-by-asset approach to credit risk management. While each bank's method varies, in general this approach involves periodically evaluating the credit quality of loans and other credit exposures, applying a credit risk rating, and aggregating the results of this analysis to identify a portfolio's expected losses. The foundation of the asset-by-asset approach is a sound loan review and internal credit risk rating system. A loan review and credit risk rating system enable management to identify changes in individual credits, or portfolio trends in a timely manner. Based on the results of its problem, loan identification, loan review, and credit risk rating system management can make necessary modifications to portfolio strategies or increase the supervision of credits in a timely manner.

iii. *Portfolio Approach*

While the asset-by-asset approach is a critical component to managing credit risk, it does not provide a complete view of portfolio credit risk, where the term risk refers to the possibility that actual losses exceed expected losses. Therefore to gain greater insight into credit risk, banks increasingly look to complement the asset-by-asset approach with a quantitative portfolio review using a credit model.

Banks increasingly attempt to address the inability of the asset-by-asset approach to measure unexpected losses sufficiently by pursuing a portfolio approach. One weakness with the asset-by-asset approach is that it has difficulty identifying and measuring concentration. Concentration risk refers to additional portfolio risk resulting from increased

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exposure to a borrower, or to a group of correlated borrowers.

iv. *Traditional Approach*

It is hard to differentiate between the traditional approach and the new approaches since many of the ideas of traditional models are used in the new models. The traditional approach is comprised of four classes of models including:

a. Expert Systems

In the expert system, the credit decision is left in the hands of the branch lending officer. His expertise, judgment, and weighting of certain factors are the most important determinants in the decision to grant loans. The loan officer can examine as many points as possible but must include the five "Cs". These are; character, credibility, capital, collateral and cycle (economic conditions) in addition to the 5 Cs, an expert may also take into consideration the interest rate.

b. Artificial Neural Networks

Due to the time consuming nature and error-prone nature of the computerized expertise system, many systems use induction to infer the human expert's decision process. The artificial neural networks have been proposed as solutions to the problems of the expert system. This system simulates the human learning process. It learns the nature of the relationship between inputs and outputs by repeatedly sampling input/output information.

c. Internal Rating at Banks

Over the years, banks have subdivided the past/performing rating category, for example at each time, there is always a probability that some past or performing loans will go into default, and that reserves should be held against such loans.

d. Credit scoring systems

A credit score is a number that is based on a statistical analysis of a borrower's credit report, and is used to represent the creditworthiness of that person. A credit score is primarily based on credit report information. Lenders, such as banks use credit scores to evaluate the potential risk posed by giving loans to consumers and to mitigate losses due to bad debt.

Chapter Three

III. Research Methods

Research methodology is a vital part of the research dissertation because it is the background against which the reader evaluates the findings and draw conclusions. This chapter presents the research method adopted for the study and discusses the technique applied for the analysis of the data gathered.

a) Background to the area of study

The study sought to assess the effects of credit risk management on the performance of commercial banks in Cameroon with the case study of BICEC Bamenda branch. In this light, we are going to expand on the bank's historical evolution, its various products and services and its organizational structure.

BanqueInternationale du Cameroun pour l'Epargne et le Credit (BICEC) was set up on March 14, 1997 following the liquidation of BICIC (BanqueInternationale du Cameroun pour l'Industrie et le Commerce) that took place under particularly challenging economic circumstances. It was indeed necessary to restructure BICIC given that economic crisis of the 80's and 90's did not spare it.

Therefore, in March 1997, the Board of Directors of BICIC decided to establish BICEC. Its management was entrusted to GroupeBanquePopulaire, a French banking group that accomplished its mission namely: making the bank profitable and paving the way for its privatization in 3 years. In 2000, BICEC became a subsidiary of GroupeBanquePopulaire.

Since 2011, BICEC has continued benefiting from the extensive experience brought about by the merging of the BanquesPopulaires and Caissesd'Epargne (BPCE) Groups.Today, BICEC is the major stakeholder in the Cameroonian banking sector with a solid overall performance.

i. *Products and services*

BICEC provides a wide range of products and services to all its clientele. These products and services are classified according to the types of customers; private customer and civil servants, students, professionals SMEs, SMIs, farmers, corporate bodies, and institutions.

Therefore, the bank's products and services are as follows:

a. Bank cards

Visa Gold: This is a universal payment and withdrawal card accepted worldwide at any time. Holders of Visa Gold have privileged relationship with BICEC. It is BICEC most advanced premium card. The targeted clientele is therefore high-income private customers and it offers the holder exceptional services, recognition and quality reception.

Visa Classic: It is a universal payment and withdrawal card accepted worldwide at any time. It is a mid-range BICEC VISA product. The clientele is private customers with an income of more than or equal to 500,000FCFA. It guarantees the holder phone support 7days/week and 24h/day on the number 33 42 29 09.

Visa Electron: It is a universal payment and withdrawal card accepted worldwide at any time. The targeted clientele is customers with income between 200,000FCFA and 500,000FCFA and holders of checking accounts.

Express Card: This is a domestic withdrawal card that allows the holder to withdraw cash from ATMs of the

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BICEC network all round the clock. It is a low-end product that target customers with an income less than 200,000FCFA and are checking accounts holders.

Comfort Card: It is a domestic withdrawal card that allows the holder to withdraw cash from ATMs of the BICEC network all round the clock. Target clientele is private customers that are savings account holders.

MOOV Card: It is a domestic withdrawal card that allows the holder to withdraw cash from all the ATMs of the BICEC network. It is a low-end product with a targeted clientele of students basically.

b. Insurance

Schengen Travel Insurance: This is a contract that guarantees assistance and health insurance to all BICEC customers seeking entry VISAs to any country of the Schengen zone. It is a mid-range product aimed at private customers (both BICEC and non-customers).

Super Retraite: It is a life insurance plan with two components: Pension insurance coverage, that allows insured to constitute a supplementary pension. And supplementary pension coverage whereby the insured is covered by the insurance provider with regards to pension contributions left to be paid on such a person's date of death prior to the end of the contract.

Securicartes: This is a policy that covers the customers against:The fraudulent use of bank cards and cheque books, loss or theft of the official documents (National Identity Card, Passport, car registration documents, driver's license) and theft or cash withdrawal from BICEC counters.

Securitedecouvert: This is an insurance contract whereby an insurance pledges to pay back an overdraft granted to a customer (the insured) in case of death, up to a maximum nominal amount of 400,000FCFA.

c. Short-term financing

BICEC issues three types of short term loans that include: Reserve Leader (a credit facility, intended to finance daily common needs like equipment, family events and needs), school fee loan (granted to finance school resumption expenditures, land acquisition/home renovation loans(personal loans meant for real estate acquisition or improving security and purchasing equipment.) and overdraft facilities (to finance customers daily needs, shelter them from end of month financial difficulties and render their budget more flexible. It can be permanent or spontaneous).

d. Investment savings

BICEC Immo: It is the perfect way to add value to customers' savings and then finance their construction project. It is available to all customers, holders of checking accounts between 18 and 55 years.

Certificate of deposit: BICEC offers to all its customers the possibility to subscribe for certificates of deposits (CD). In return for this interest-bearing saving, BICEC issues the customer a negotiable instrument.

There are other types of credit facilities that the bank offers such as: BICEC Junior (it is the best way to maximize the customers' savings and assist them in preparing their children's future), remote banking for corporate bodies, professional SMEs and SMIs, international expertise, and other financing facilities for farmers.

b) Method of collecting data

The main source of data collection for this research is the secondary source because based on our research objectives, secondary data are more appropriate for the various analyses that were to be done. Data has been collected from the BICEC balance sheet, trading profit and loss statements, journals, annual reports and other related document.

BICEC has been used as a sample of a commercial bank from which a period of 5 years will be used for the study.

c) Method of data analysis

Data collected on deposits, loans and profits and losses and credits will be analyzed using inferential statistics. Variables will be analyzed based on the correlation that exists between them. Correlation is used because this research is out to study the relationship that exists between profitability and credit risk.

d) Sample design

The research design used in this study is the descriptive research design because we wanted to determine relationships between variables and on the longitudinal study basis, since we were investigating on sample elements that were measured repeatedly for 5 years. BICEC branch was chosen because BICEC is among the three best performing commercial banks of the Cameroonian banking sector.

e) Limitation of the study

Due to the limited time and availability of data, the researcher was unable to enter in possession of more recent financial statements from the bank.

Chapter Four

IV. Presentation of Results and Analysis

a) Presentation and analysis of secondary data results

i. *Presentation of trend analysis*

Ratios were calculated and inserted in Tables as follows.

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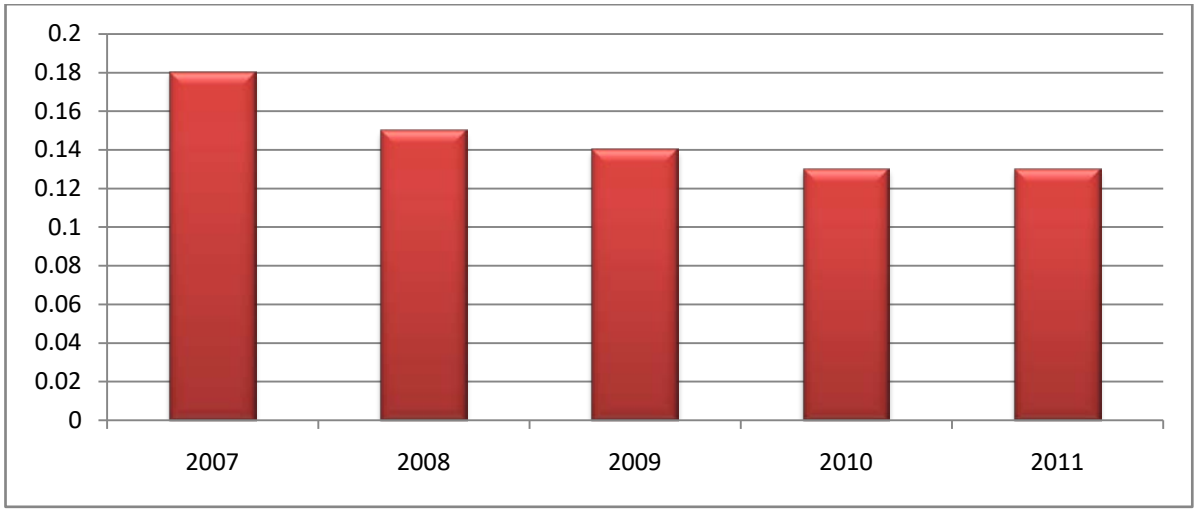
Table 1: BICEC NPL to total loans ratios (2007-2011)

Year	NPL to Total Loans Ratio
2007	0.18
2008	0.15
2009	0.14
2010	0.13
2011	0.13

Source: author (2014)



Source: author (2014)

*Figure 1:*Trend of NPL to total loan ratio

As seen from Table1 and Fig1 above, the bank's NPL to total loans ratio was at his pick in 2007 at 0.18 and it went lower from then till 2011 namely from 0.18 to 0.13. This indicates that the bank has been able to reduce the level of its NPL which is quite a good trend.

*Table 2:*BICEC total loans to deposits ratio (2007-2011)

Year	Total Loans to Deposits ratio
2007	0.56
2008	0.64
2009	0.73
2010	0.64
2011	0.70

Source: author (2014)

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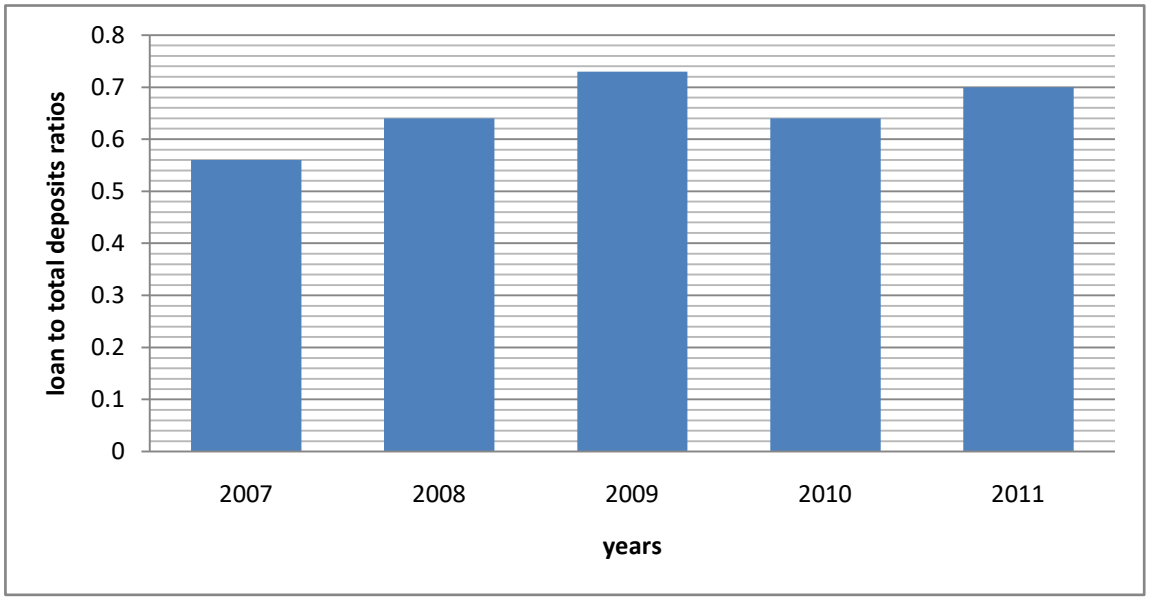


Figure 2: Trend of loan to deposits ratios

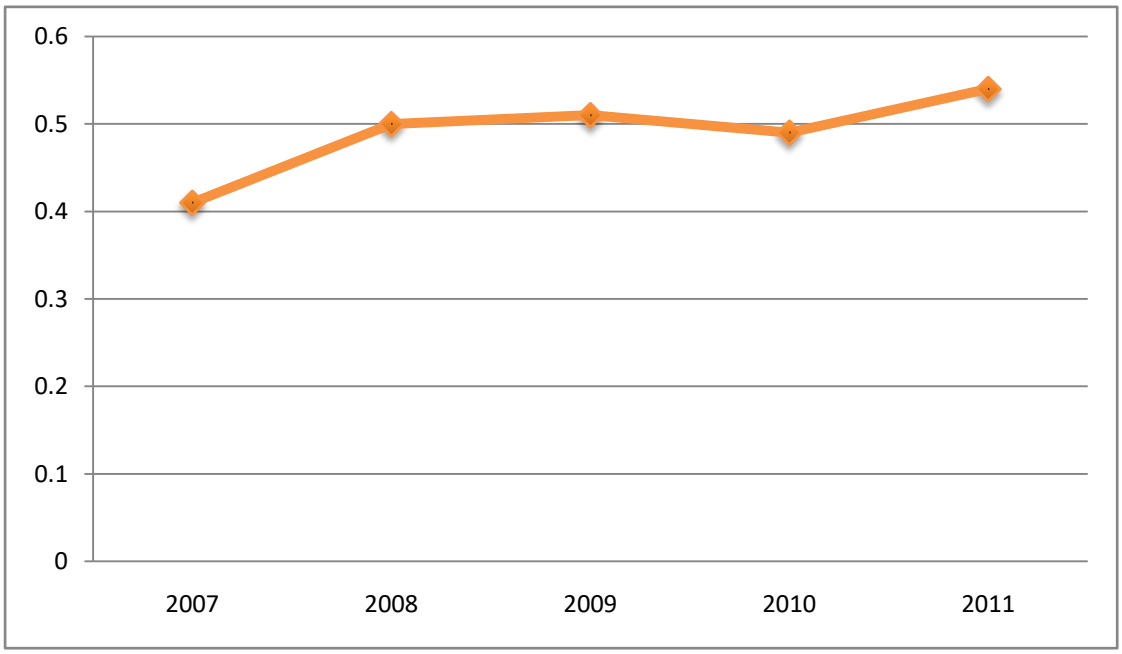
Source: Author (2014)

The loan to deposit ratio indicates the proportion of deposits that is constituted by loans. Therefore, from table2 and Fig2 above, we see that BICEC increased its loans to deposits ratio from 0.56 to 0.73 respectively in 2007 and 2009, indicating that more loans were given out that period only from deposits. But, in 2010, this dropped to 0.64 probably due to liquidity problems, the bank may have decided to lower it, and at 2011, it tends to rise again to 0.70 which may be a little risky.

Table 3: BICEC loans to total assets ratios (2007-2011)

Year	Loans to Total Assets Ratios
2007	0.41
2008	0.50
2009	0.51
2010	0.49
2011	0.54

Source: author (2014)



Source: author (2014)

Figure 3: Trend of loans to total assets ratios

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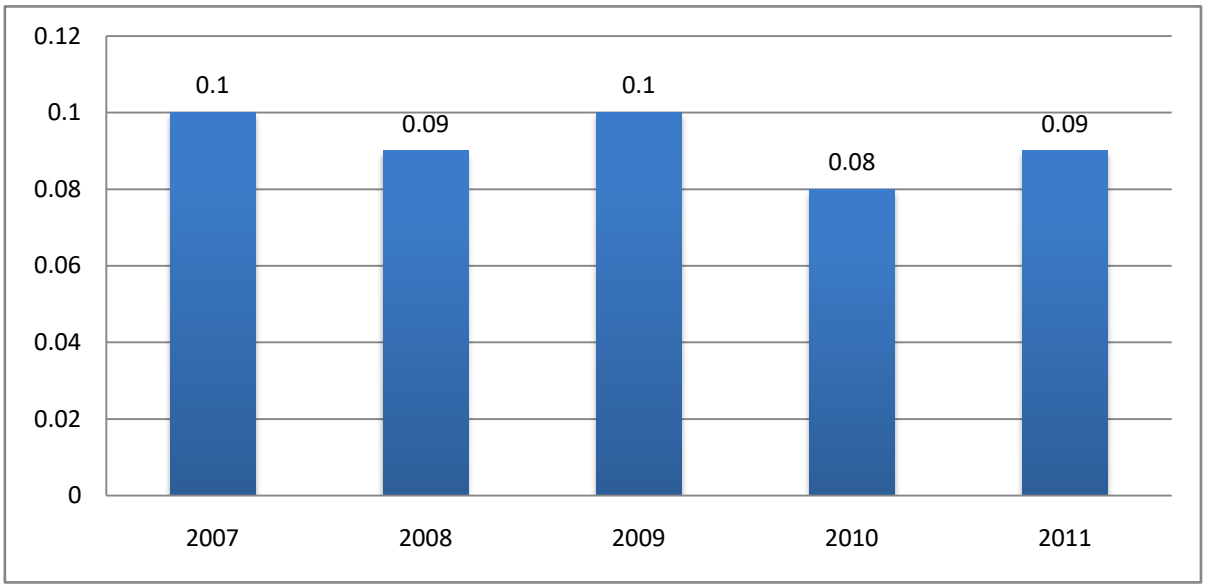
The loans to total assets ratio measures the extent to which total assets are composed of loans. Therefore, as seen in table 3 and fig 3 above, this ratio rises from 0.41 to 0.51 from 2007 to 2009. But, it felt to 0.49 in 2010 and rose back to 0.54 in 2011. This is because in 2010, there was a marginal increase in the bank's total assets due to its subscription to buy government bonds issued during that period and still maintained its loans at the current level.

Table 4: NPL to total deposits ratio of BICEC (2007-2011)

Year	NPL to Total Deposits ratios
2007	0.10
2008	0.09
2009	0.10
2010	0.08
2011	0.09

Source: author (2014)



Source: author (2014)

Figure 4: Trend of NPL to total deposits ratios

As seen in table 4 and fig 4 above, the NPL to total deposits which indicates the proportion of total deposits that are constituted by NPL, is quite fluctuating over the years but do not go lower than 8% nor greater that 10%. This shows that BICEC is able to maintain the amount of NPL to total deposits at a minimum.

Table 5: BICEC loan provision to NPL ratios (2007-2011)

Year	Loan Provision to NPL ratios
2007	1.09
2008	1.10
2009	1.03
2010	1.02
2011	0.95

Source: Author (2014)

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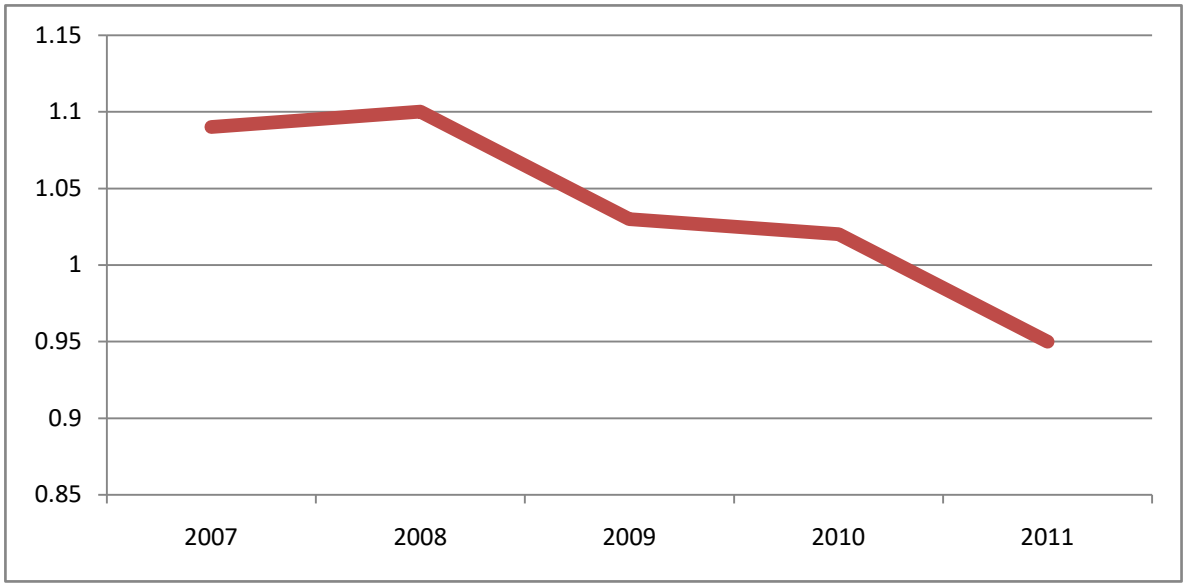


Source: author (2014)

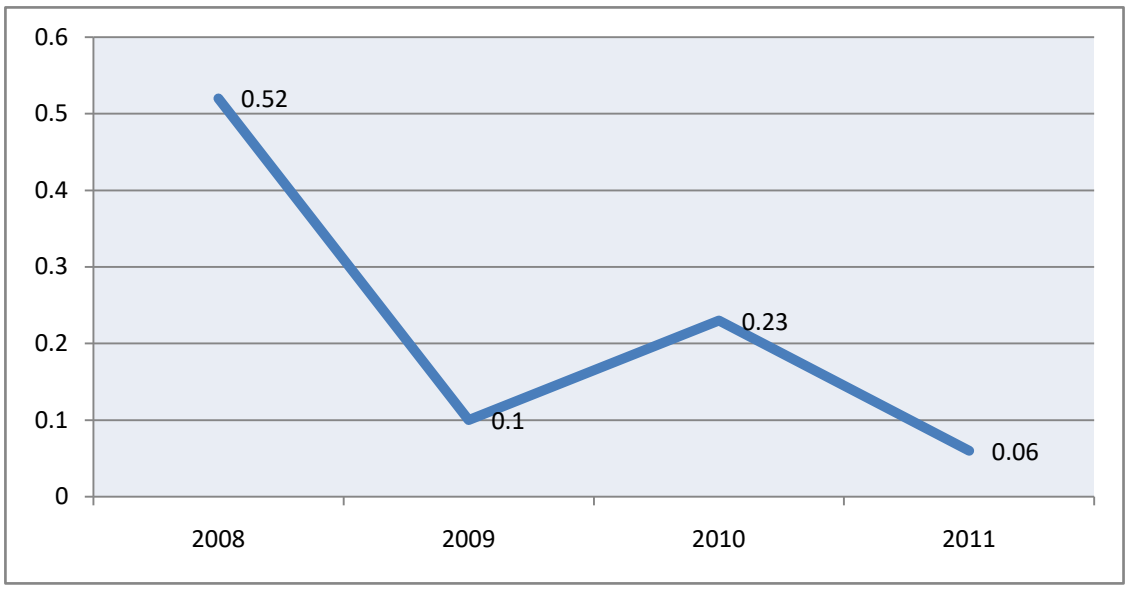
Figure 5: Trend of loan provision to NPL loan ratios

As seen above in both table 5 and Fig 5, there is a slim increase from 1.09 to 1.10 from 2007 to 2008. But from then, the ratio goes decreasingly right to 0.95 in 2011. This indicates that the institution has been able to cover its NPL from 2007 to 2010 because the ratios are greater than 1.00. On the other hand, this was not the case in 2011 where the ratio 0.95 shows that the loan provision for that year has just been able to cover up to 95% of the NPL which reveals an uncovered 5%.

Table 6: Percentage change in Profits (2007-2011)

Year	Percentage Changes
2007-2008	0.52
2008-2009	0.10
2009-2010	0.23
2010-2011	0.06

Source: Author (2014)



Source: author (2014)

Figure 6: Trend of percentage changes in profits

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As seen above from table 6 and Fig 6, the percentage change in profits of BICEC drastically dropped from 2008 to 2009, namely from 52% to 10%. This can be probably due to other factors such as investments undertaken during that period such as new branches creation and renovation of existing ones. But the ratio rose to 23% in 2010 and again dropped to the lowest in 2011 at 6%. This shows that the bank is not able to maintain certain constancy in the percentage changes in its profits.

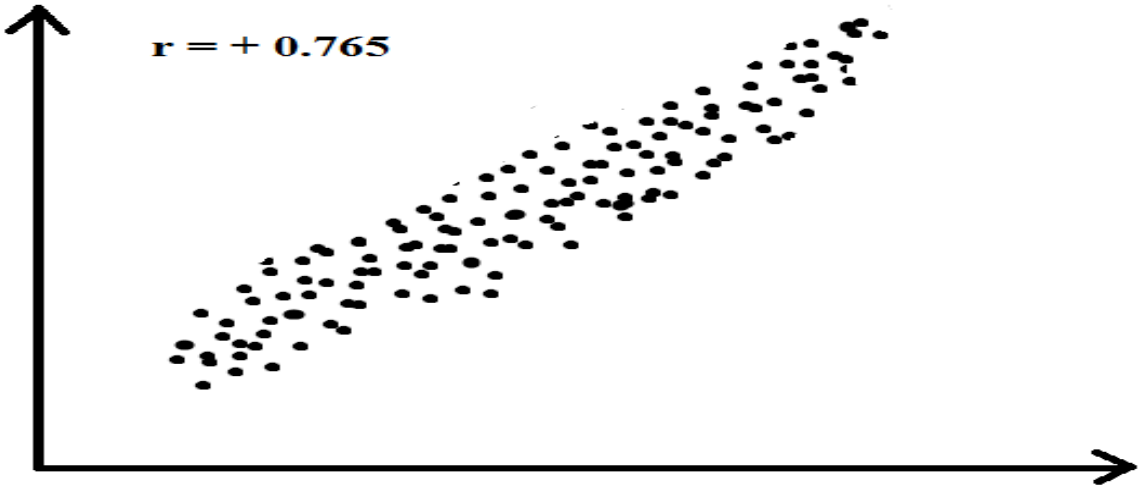
ii. *Presentation of correlation analysis*

In order to further the analysis to be more efficient, we will use the correlation between these variables so that we can have a better view of the ratios. The correlation was done over 4 years.

Table 7: Correlation results of NPL to total loans ratios (X) and percentage changes in profits (Y) for 2007-2011.

Year	X	Y	XY	X^2	Y^2
2008	0.15	0.52	0.0780	0.0225	0.2704
2009	0.14	0.10	0.0140	0.0196	0.0100
2010	0.13	0.23	0.0299	0.1690	0.0529
2011	0.13	0.06	0.0078	0.1690	0.0036
SUM	0.55	0.91	0.129	0.7590	0.8130

Source: Author (2014)



Source: author (2014)

Figure 7: Representation of the correlation between NPL to total loans ratios and percentages

Therefore, $r^2 = 0.585$, which means that there is a strong positive correlation between BICEC's percentage changes in profits and its NPL to total loans ratios. This means that the variation in percentage change in profit moves the same way as variations in NPL to total loans ratios. If one increases, it will cause the other to do such. This indicates that only 58% of the variation in percentage change in profitability is due to NPL to total loans ratio of BICEC.

Table 8: Correlation results of total loans to deposits ratios (X) and percentages change in profits (Y)

Year	X	Y	XY	X^2	Y^2
2008	0.64	0.52	0.3328	0.4096	0.2704
2009	0.73	0.10	0.0730	0.5329	0.0100
2010	0.64	0.23	0.1472	0.4096	0.0529
2011	0.70	0.06	0.0420	0.4900	0.0036
SUM	2.71	0.91	0.5950	1.8421	0.8130

Source: author (2014)

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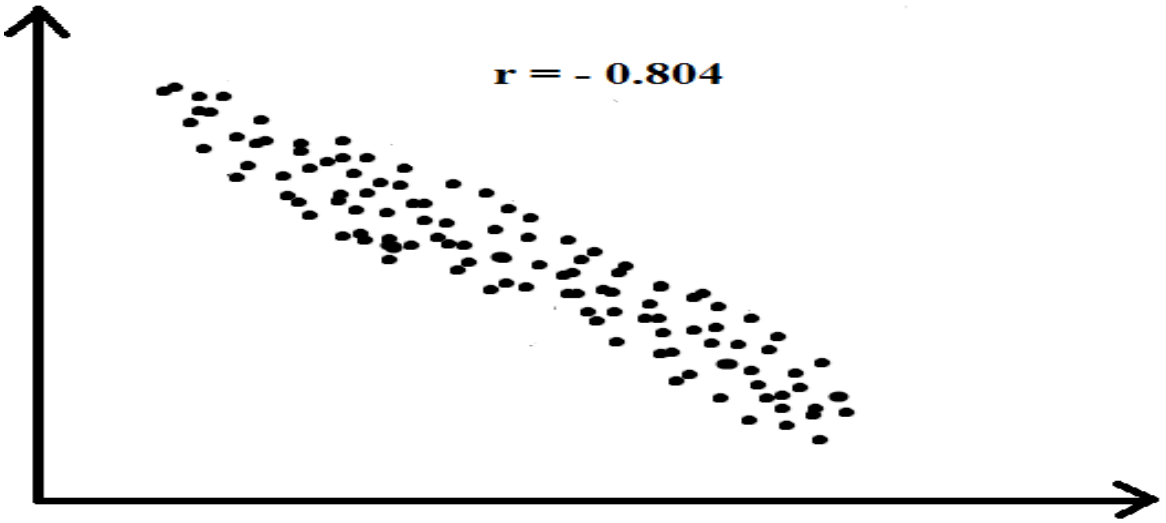


Source: author (2014)

Figure 8: Representation of the correlation between total loans to deposits ratios and percentages

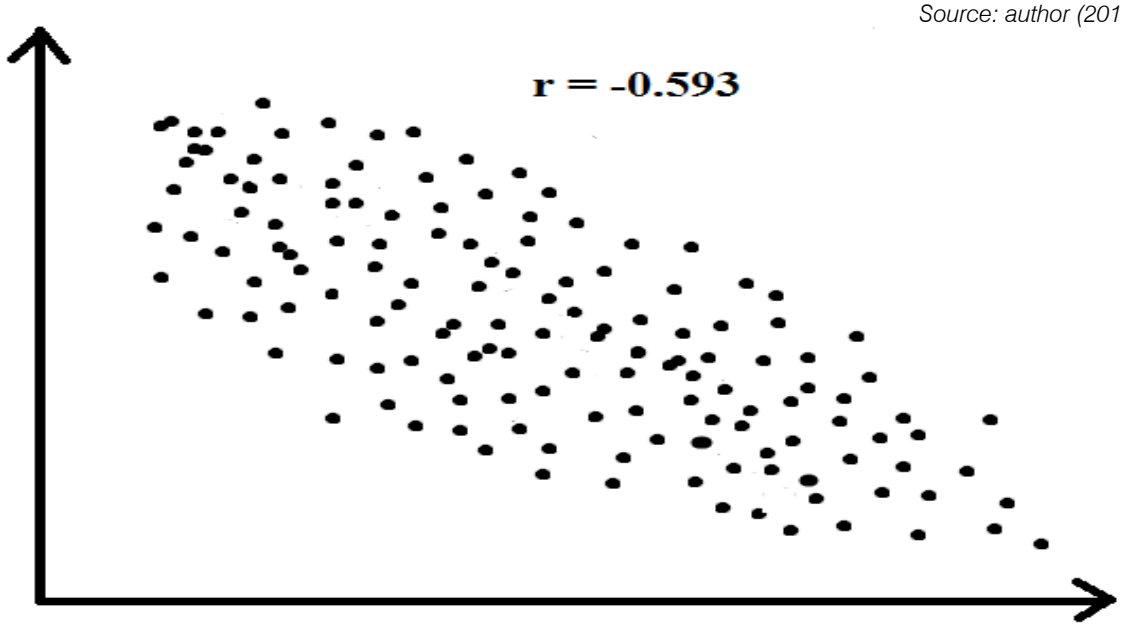
Using the formula, $r = -0.804$ thus, $r^2 = 0.65$, meaning that there is a strong negative correlation between X and Y which are the bank's Loan to deposit ratios and the percentage changes in its profits respectively. Any increase in loan to deposit ratio will lead to a decrease in the BICEC percentage change in profitability.

This implies that 65% of BICEC percentage change in profits is due to their loans to deposits ratio. Or put another way, 35% of variation of the percentage change in profit is due to factors other than loan to deposit ratios. In other words the more loans are taken from deposits, the lesser the profits realized.

Table 9: Correlation results of loan to total assets ratios (X) and percentages changes in profits (Y)

Year	X	Y	XY	X^2	Y^2
2008	0.50	0.52	0.2600	0.2500	0.2704
2009	0.51	0.10	0.0510	0.2601	0.0100
2010	0.49	0.23	0.1127	0.2401	0.0529
2011	0.54	0.06	0.0324	0.2916	0.0036
SUM	2.04	0.91	0.4561	1.0418	0.8130

Source: author (2014)



Source: author (2014)

Figure 9: Representation of the correlation between loan to total assets ratios and percentages

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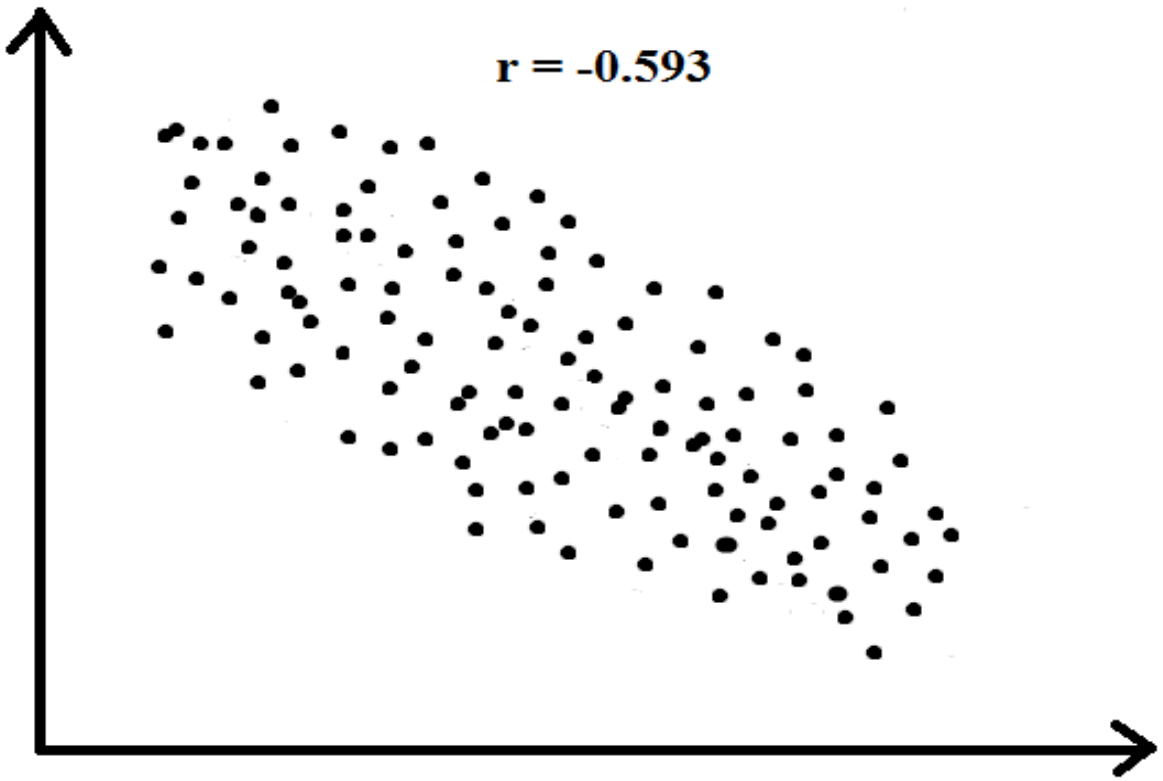
The correlation coefficient from these series is: $r = -0.593$ and $r^2 = 0.35$. This indicates that there is a strong negative correlation between BICEC's percentage changes in profits and its loan to total assets ratios over the years. This means that only 35% of variation of the percentage change in BICEC profits is not due to the value of its loan to total assets ratio.

Table 10: Correlation results of NPL to total deposits ratios (X) and percentages changes in profits (Y)

Year	X	Y	XY	X^2	Y^2
2008	0.09	0.52	0.0468	0.0081	0.2704
2009	0.10	0.10	0.0100	0.0100	0.0100
2010	0.08	0.23	0.0184	0.0064	0.0529
2011	0.09	0.06	0.0054	0.0081	0.0036
SUM	0.36	0.91	0.0806	0.0326	0.8130

Source: author (2014)



Source: author (2014)

Figure10: Representation of the correlation results of NPL to total deposits ratios and percentages

The correlation coefficient is $r = -0.255$ thus, $r^2 = 0.065$. This shows that there is a weak negative correlation between the bank's profit percentage changes and its NPL to total deposits ratios over the years, revealing also that only 6.5% of variation of the bank's profits percentage changes is due to its NPL to total deposits ratios.

Table 11: Correlation results of loan provision to NPL ratios (X) and percentages changes in profits (Y).

Year	X	Y	XY	X^2	Y^2
2008	1.10	0.52	0.5720	1.2100	0.2704
2009	1.03	0.10	0.1030	1.0609	0.0100
2010	1.02	0.23	0.2146	1.0404	0.0529
2011	0.95	0.06	0.0570	0.9025	0.0036
SUM	4.1	0.91	0.9466	4.2138	0.8130

Source: author (2014)

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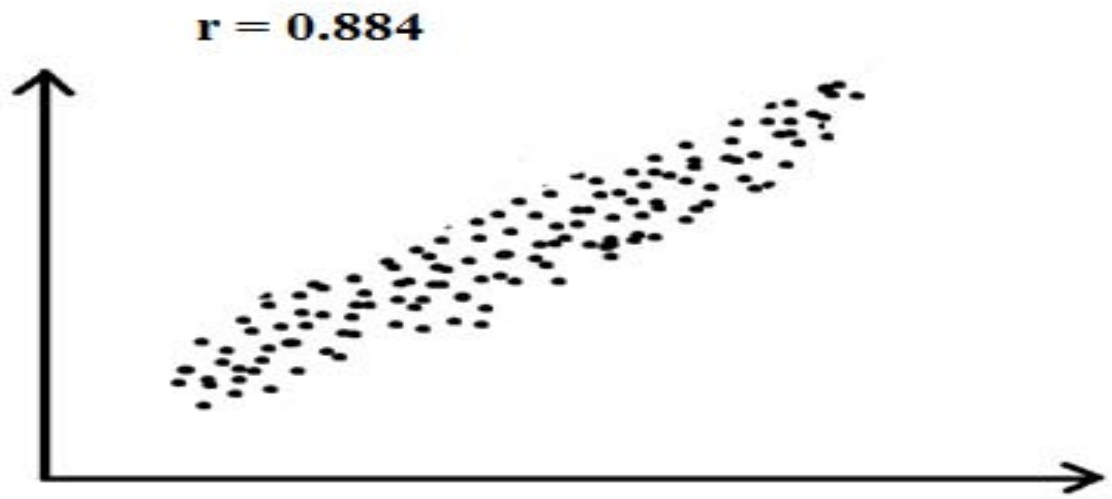

Source: author (2014)

Figure 11: Representation of the correlation between loan provision to NPL ratios and percentages

The correlation coefficient is $r = 0.884$ therefore, $r^2 = 0.781$. The results indicate that there is a strong positive correlation between BICEC's percentage changes in profits and its Loan Provision to NPL ratios over the years. It also reveals that 78% of variation in percentage changes in profits of BICEC is due to its loan provision to NPL ratio. An increase in loan provision to NPL ratio is associated with an increase in the percentage changes of profits.

Chapter Five

V. Summary, Conclusion and Recommendations

a) Summary of the study

The study sought to examine the impact of credit risk management on commercial banks performance. In order to achieve this, first, a good number of concepts were developed and discussed; also, other researchers' works on this area were brought forward to bring more light to the research. Our conceptual literature emphasized on the various concepts such as risk, loans, credit risk, credit risk management, commercial banks, performance and its determinants, bringing out for each concept various definitions and explanations from different authors. Then we went further to elaborate on the various types of risk that affect banks; they include: interest rate risk, market risk, liquidity risk, currency risk, operational risk, off-balance sheet risk, reputation risk, legal risk, strategic risk and capital risk. More so, we developed on credit risk management since it is the key area of focus of the study; where we gave the various tools and/or techniques used by banks such as avoidance, diversification in lending, screening, compensating balances and monitoring business transactions, long term customer relationship, loan commitments, collateral requirements, credit rationing, specialization and credit derivatives. After which, some empirical works were mentioned, followed by credit risk management theories and models including the portfolio theory, the asset-by-asset approach and the traditional approach.

Using a descriptive research design, we gathered secondary data from BICEC's financial statements extracted from its annual reports (2007-2011) and any other related document. The data collected on loans, deposits, total assets, NPL and profits over the period of study were then analyzed using inferential statistics and used to compute credit risk management ratios and correlation between those ratios and percentage changes in the bank's profitability values for the period and presented both in tables and charts and graphs.

In this section, the data collected for 5 years (2007-2011) from BICEC have been analyzed using ratio analysis and correlation coefficients between variables. Table 1 to 6 present descriptive statistics of the various ratios computed based on financial statements of the periods. The study revealed that: For BICEC's NPL to total loans ratios, the maximum was attained in 2007 at 18% and minimum in both 2010 and 2011 at 13%. This ratio indicates the proportion of the total loans that are not performing. On the other hand, total loans to total deposits reached their maximum value in 2009 at 73% and minimum in 2007 at 56%. This shows that BICEC increased its loans proportion from deposited funds. But it is worth to attend to it as it is rising back to 70% in 2011. This is almost the same regarding its total loans to

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total assets ratios which went increasingly from 2007 to 2011 respectively from 0.41 to 0.54. Regarding the institution's NPL to total deposits ratios, table 4 shows that there is an average ratio of 9% with a maximum of 10% attained both in 2007 and 2009, and a minimum of 8% in 2010. It shows that there is still a certain degree of default risk. Moreover, the bank has been able to cover its NPL over the first 4 years. But as seen in table 5 and Fig5, the trend of the loan provision to NPL loans ratio is decreasing over time as from 2008 revealing that there are not sufficient tools to monitor, control and cover those NPL because it even went worst in 2011 where the bank has not been able to cover all NPL as in the precedent years but just up to 95% of it.

The correlation matrices in Table 7 to 11 indicate the degree of correlation between each pair of variables. Therefore, Table 7 and 11 show a significant relationship and to be more precise, a strong positive correlation between percentages changes in profits to NPL to total loans ratios on one hand and loan provision to NPL ratio on the other hand. The findings indicate thus that all the risk management indicators have a direct relationship with performance. On the other hand, table 8 and 9 show the degree of correlation between each pair of variables; namely percentage changes in profits (dependent) and both total loans to total deposits ratios and loans to total assets ratios (both independent) and from correlation results obtained, the variables are negatively correlated. However, the findings indicate that these ratios are directly related to the bank performance but negatively. Thus, the lower these ratios, the more profits are made and vice versa. Furthermore, observations from Table 10 and Fig 10 reveal that there is a weak negative correlation between the dependent and independent variables respectively percentage changes in profits and NPL to total deposit ratios. However, this relationship is not significant which indicates that there is no any relationship between the bank's performance and the NPL to total deposits ratio.

b) Conclusion

The general objective of the study was to examine the effects of credit risk management on performance of commercial banks and our specific objectives were to find out the various risk management tools used by banks to manage credit risk and to evaluate loan assessment techniques used by the institution.

The results of the research showed that credit risk management is an important predicator of a bank financial performance; thus bank's performance depends on credit risk management.

The study also showed that the NPL to total loans ratio as one of the risk management indicators is a major predicator of the bank financial performance to the extent of 58%, and followed by both total loan to total deposits ratio and loans to total assets ratio which both affect financial performance negatively by respectively 65% and 35%.

Credit risk management is very crucial to the bank performance since it has a significant relationship with bank performance.

c) Recommendations

Based on the findings above, the following recommendations were made which can be used to improve the credit risk management of the institution so as to improve the financial performance:

First, the bank's loan to deposit ratio should be kept around 65% so that it will not put the bank at a liquidity risk situation; this is because if majority of loans are made from deposits, in case there is illiquidity due to non-repayment of the loans issued, it may lead to a bank run and thus create at the same time a reputation risk.

Then, the bank should as much as possible be able to maintain its loan provision to NPL ratio at about 1.25. This is to avoid any situation of uncovered loans. In the case NPL are not fully covered, obviously it implies a loss. Thus, the bank's provisions for bad debts should out raise the amounts of NPL as time goes.

Since credit risk management has an important contribution to the bank's performance, the institution should put more accent on its loan assessment techniques and accurately evaluate credit applications before issuing funds so that there will no longer be NPL in its financial statements, even though the risk is always present but it should be minimized to its fullest by minimizing the NPL to total loans ratio.

Banks must adhere to prudential banking practices and even diversify more in lending to avoid repetitive losses in particular types of loan issued to their customers.

BICEC should have adequate provision for doubtful debts and renegotiate loan terms for insolvent customers and even extend their credit maturity.

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Appendix

Appendix 1: Consolidated figures extracted from BICEC Balance sheets and Income statements.

YEAR	TOTAL DEPOSITS	TOTAL LOANS	TOTAL ASSETS	NPL	LOAN PROVISION	PROFITS
2007	326273	183097	441521	32819	35952	7023
2008	349081	224842	447854	33096	36585	7386
2009	356689	259632	505220	37112	38327	8141
2010	454434	286130	581037	37306	38001	10024
2011	472072	329475	602673	43050	40645	10644

Source: BICEC Annual reports 2007-2011

Appendix 2: Formulae used

Correlation

$$r = \frac{n(\Sigma XY) - (\Sigma X)(\Sigma Y)}{\sqrt{[n(\Sigma X^2) - (\Sigma X)^2][(n(\Sigma Y^2) - (\Sigma Y)^2]}}$$

Where (Y) dependent variable and (X) independent variable.

Ratios formulae:

NPL to total loans ratio = NPL / total loans

Loans to total deposits ratio = total loans / total deposits

Loans to total assets ratio = total loans / total assets

NPL to total deposits ratio = NPL / total deposits

Loan provision to NPL ratio = loan provision / NPL

Acknowledgements

I would like to express my immense thankfulness to my supervisor, ANSELM N. NIBA whose support, interest, encouragement and stimulating suggestions helped me during the research and writing process of this research project.

To my parents Mr. and Mrs. TCHAKONTE Alexis and Alice, and my entire family for their love, encouragements and financial and emotional support throughout my studies.

Also greatly indebted to Late Mr. MAIMO Denis, who was like a father to me during my studies, for his endless encouragements, support and incessant attention regarding my studies. May your soul rest in peace…

And finally, my gratitude goes to all my relatives and friends for their unconditional love and support always.

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