St. Mary's University School of Graduate Studies Masters in Business Administration

A thesis submitted to St. Mary's university school of Graduate studies in Partial Fulfillment of the Requirements for Master of Business Administration

Determinants of Non-performing loans: in the case of Construction and Business Bank

By

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By
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Abstract

The main purpose of conducting this study was to find out bank specific factors affecting the occurrence of NPLs in Construction and Business Bank. To accomplish this purpose 5 years (2011-2015) time series secondary data and also primary data through questionnaire have been collected. The explanatory and descriptive research methodology is used as and it is the most suitable for fulfillment of the study objectives. The results show that various bank-specific factors like credit assessment; credit monitoring, ROA has strong and significant effect for the occurrence Non-Performing Loans. On the other hand the finding of the document collateralized loan, lending interest rate, loan maturity, LDR and LGR has a weak significant effect and relationship with the occurrence of NPLs. This research with regard to Non-Performing Loans and its bank specific factors will be useful for CBE decision makers and other private banks.

Key words: Bank specific factors, Construction and Business bank, Non-performing Loans

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LIST OF ACRONYMS/ABBREVATIONS

CBB: Construction and Business Bank

CBE: Commercial Bank of Ethiopia

ECBs: Ethiopian Commercial Banks

GDP: Gross Domestic Product

IMF: International Monetary Fund

LDR: Loan to Deposit Ratio

LGR: Loan Growth Rate

NBE: National Bank of Ethiopia

NPL: Non-Performance Loans

RQ: Research Question

ROA: Return on Equity

REER: Real Effective Exchange Rate

SPSS: Statistical Package for Social Science

VIF: - Variance Inflation Factors

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DECLARATION

I, the undersigned, declare that this thesis is my original work; prepared under the guidance of Dr. Habtamu Berhanu. All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

Eshetu Abebe   _____

Name   Signature

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ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

Dr. HabtamuBerhanu   _____

              Advisor   Signature

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CHAPTER ONE

1. INTRODUCTION

1.1. Background of the study

Banks play intermediation function in that they collect money from those who have excess and lend it to others who need it for their investment. Lending represents the heart of the banking industry. Loans are the dominant asset and represent 50-75 percent of the total amount at most banks, generate the largest share of operating income and represent the banks greater risk exposure(Mac Donald and Koch, 2006). Moreover, its contribution to the growth of any country is huge in that they are the main intermediaries between depositors and those in need of fund for their viable projects (creditors) thereby ensure that the money available in economy is always put to good use. Therefore, managing loan in a proper way not only has positive effect on the banks performance but also on the borrower firms and a country as a whole. Failure to manage loans, which make up the largest share of banks assets, would likely lead to the episode of high level of non -performing loans.

According to the International Monetary Fund (IMF, 2009), a non- performing loan is any loan in which interest and principal payments are more than 90 days overdue; or more than 90 days worth of interest has been refinanced .On the other hand the Basel Committee1(2001) puts non performing loans as loans left unpaid for a period of 90 days.

Under the Ethiopian banking business directive, non-performing loans are defined as "Loans or Advances" whose credit quality has deteriorated such that full collection of principal and/or interest in accordance with the contractual

repayment terms of the loan or advances in question National Bank of Ethiopia (NBE directive No.SBB/43/ 2008).

Most unsound financial sectors show high level of non- performing loans within a country. The causes for loan default vary in different countries and have a multidimensional aspect both, in developing and developed nations. Theoretically there are so many reasons as to why loans fail to perform. Some of these include depressed economic conditions, high real interest rate, inflation, lenient terms of credit, credit orientation, high credit growth and risk appetite, and poor monitoring among others. Bercoff et al. (2002) categorizes causes of nonperforming loans to Bank specific and Macroeconomic conditions. Macroeconomic factors like real growth in GDP, and from bank specific factors like rapid credit expansion, bank size explain variation in non- performing loans.

Another similar study made by Rajan & Dhal (2003) by using regression analysis for Indian banks concluded that both macroeconomic and bank specific factors have significant impact over NPLs rate. From macroeconomic factors such as, GDP growth rate and bank specific factors like maturity, bank size, credit orientation, and credit terms were included.

Regardless of the implications of NPLs on smooth functioning of banks, for anticipating banking and financial crises, the leading causes of these loans remain unknown for most countries especially in Sub-Saharan Africa (Fofack, 2005). This is due to the fact that, most studies often used NPLs as an explanatory variable to other banking outcomes such as banks performance and failures. Consequently, there appears to be very limited number of studies investigated NPLs as an explained variable (Boudriga 2009).

Coming back to the case of Ethiopia, like other African countries and the rest of the world experienced, Ethiopian commercial banks (ECBs) were also suffered from serious financial fragility manifested by high proportion of NPLs (Mehari 2012).

Recently, the NPLs of ECBs have shown a substantial improvement and lowered to an average of 5 % (National Bank of Ethiopia 2011). However, NPLs of ECBs are still high as compared to the developing economy banks like, Namibia, Mozambique and Uganda. NPLs of Namibia, Mozambique and Uganda are an average of 1.9%, 2.3% and 2.5% of their total loans respectively (world bank 2012). Construction and Business Bank S.C. (CBB) were granting long-term loans for residential housing and commercial building construction. Hence, Construction and Business Bank like any commercial bank are still expected to reduce its NPLs as low as possible in order to achieve their optimal profit and ultimately improve the soundness of the financial system.

1.2. Statement of the problem

Lending is considered as the most important function for fund utilization of Commercial Banks and the major portion of their income is earned from loans and advances (Radha, 1980). The NPL problems are still a worldwide headache and a major concern for both international and local regulators (Boudriga 2009). Given the harmful effects of NPLs on countries economy, in recent years, the issue of preventing NPLs is highly emphasized on the agenda of banking supervisory institution and policymakers throughout the world (Socuvkova, 2012). As far as NPLs problems left unsolved, it can greatly jeopardized the smooth functioning of banks through erosion of banks asset and reduction of income through accumulation of losses and increased provisions to compensate

for these losses (Kunt and Detragiache1998). According to Fofack (2005), the fiscal costs of NPLs are also significant and the pressure on government revenues will be aggravated.

The most important problems that country's banking system face is increasing of banks NPLs and consequently, reduction of liquidity, disruption of resources' allocation and finally reduction of bank's profit (Ghasemi, 2010).

In Ethiopia, the banking environment has undergone many regulatory and financial reforms like other African countries with the aim of improving profitability, efficiency and productivity (Lelissa 2007). Despite these changes, currently, the banking industry in Ethiopia is characterized by operational inefficient, little and insufficient competition and perhaps can be distinguished by its market concentration towards the big government owned commercial bank, poor credit risk management practices and eventually less contribution to the GDP as compared to the developed world financial institutions (Abera 2012, Tefera 2011 and Tilahun 2010). These are far from the average 30% NPLs of Sub-Saharan Africa countries that recorded during the 1990's crisis (Fofack 2005).

Eventually, the government of Ethiopia being worried about the potential systemic crisis associated with credit risk and imposed restriction on the proportion of NPLs not to exceed 5% of their total loan outstanding (NBE SBB/43/2008).

Following the 2008 NBE declaration, NPLs of construction and Business Bank have shown a significant improvement and lowered below the average NPL ratio of 5 %. For instance, as of June 2011, 2012, 2013, 2014, and 2015 Fiscal years

NPLs of CBB was 4.3%,3.8%,2.7%,4.1% and 2.4% respectively(Annual report of CBB).

Despite the above discussion, Mehari (2012) in its recent work argued that, the exciting reduction of NPLs in Ethiopian Commercial Banks is not resulted from improved credit risk controlling, measuring and monitoring system. Rather, it is merely from writing off and restructuring of loans. As far as both writing off and restructuring of NPLs are a post active measurement (after the occurrence of NPLs), the issue of preventing NPLs in Ethiopian Commercial Banks is still in question.

Wondimagegnehu (2012) conducted a study on determinants of NPL, focusing only bank specific factors that cause NLPs by using mixed research method. The study conclude that poor credit assessment, failed loan monitoring, underdeveloped credit culture, lenient credit terms and conditions, aggressive lending, compromised integrity, weak institutional capacity, unfair competition among banks, willful default by borrowers and their knowledge limitation, fund diversion for unintended purpose, over/under financing by banks ascribe to the causes of loan default.

We have seen that in the studies of abroad countries loan maturity and NPL are negatively correlated and there is no as such more studies conducted that show the relationship between loan maturity and nonperforming loans in our country particularly in CBB as if it is well known in the past years in providing long term residential construction loans that have long maturity period .In addition to this there is also limited empirical study on the effect of collateralized lending on NPL. In addition to this for the last five years CBB met the minimum NPL requirement which is set by NBE (directive No. SBB/43/2008) i.e. below 5% still

it has to be lowered. These problems and gaps need an extensive research to understand the determining factor of nonperforming loans.

1.3 Objective of the study

3.1.1. General Objective

In the context of the problems highlighted above, the general objective of the study is to find out the bank specific determinants of NPLs in the case of Construction and Business Bank.

3.2.2. Specific Objective:

The specific objectives of this study are:

> ➢ To examine the trend of NPLs in Construction and Business Bank;

> ➢ To examine the impact of, financial performance, interest rate, credit growth loan monitoring and loan maturity on the growth of NPLs;

> ➢ To analyze the significance of the above bank specific NPLs determinants on Construction and Business Bank;

1.4. Research Question and Hypothesis

1.4.1. Research Question

RQ: what are bank specific determinants of non-performing loan in Construction and Business Bank?

1.4.2. Research Hypothesis

The hypotheses of this study formulated by referring the existing theories and past empirical studies that have been conducted on the bank specific determinants of NPLs. The hypotheses of this particular study are intended to catch the determinants of NPLs quantitatively through structured review of documents. In line with the broad objective of the study the following hypotheses were formulated.

.H1: There is a positive relationship between credit assessment and NPLs.

. H2: There is a positive relationship between lending interest rate and NPLs.

· H3: There is a negative relationship between credit monitoring and NPLs.

· H4: There is a positive/negative relationship between loan maturity and NPLs.

· H5: There is a negative relationship between collateralized loan and NPLs

·H6: There is a negative relationship between (ROA) and NPLs.

· H7: There is a positive relationship between loan growth rate and NPLs.

.H8: There is a positive relationship between loan to deposit ratio and NPLs

1.5. Scope of the study

The study concentrates only five years experience. Moreover the researcher wants to see only bank specific factors that affect the level of NPLs in Construction and Business bank. Therefore, the current study limited its coverage on the possibility of nonperforming loan and factor that determine the level of nonperforming loan in CBB for the past five consecutive years, that is, from 2011 to 2015. The research collected data through an intensive secondary data review and primary data through questioned some selected branches and processes of the bank that have relation with credit operations.

1.6. Significance of the study

The research expected to contribute a lot for different stakeholders. The following is the expected significance of this study:

➢ The study benefit to obtain new knowledge about problems and gives clear picture about the discipline and it enable the bank (lender) how to overcome and limit the potential factors that are highly affects the level of nonperforming loan.

1.7. Operational definitions

• *Loan or advance*: according to NBE Directive No.SBB/43/2008 "loans" or "Advances" means any financial assets of a bank arising from a direct or indirect advance (i.e. unplanned overdrafts, participation in loan syndication, the purchase of loans from another lender, etc.) or commitment to advance funds by a banks to a person that are conditioned on the obligation of the person to repay the funds, either on a specified date or dates or on demand, usually with interest.

• *Nonperforming loan*: according to NBE directive SBB/43/2008, "Nonperforming loan means loans or advances whose credit quality has deteriorated such that full collection of principal and/ or interest in accordance with the contractual repayment terms of the loan or advance is in question.

• *Lending interest rate*: Interest rate is the price a borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets. Interest can be thought of as "rent of money".

• *Loan Maturity*: Maturity of a debt instrument is the expiry date of the obligation between borrower and lender.

1.8. Limitations of the study

This thesis is adjusted to fit its objectives of examining the determinants of NPLs of Construction and Business Bank within the limits of specified time and possibility.

CHAPTER TWO

Review of Related Literature

In this section, review of theoretical and empirical literatures concerning on the area of NPLs(non performing loans) and factor that affect the level of NPLs i.e. internal (bank specific) factors as well as external(Macroeconomic) factors in the banking industry and finally deals with knowledge gap that inspire this study are presented.

2. Theoretical Review

2.1. Nature and Definition of Nonperforming Loan

The principal activity of commercial banks is making loans to its customers. In allocating funds, the primary objective of bank management is to earn income while serving the credit needs of its community. Lending represents the heart in banking industry. Loans are the dominant asset and represent fifty percent to seventy five percent to the total amount of banks assets. In most banks loans generate the largest share of operating income and represent banks greater risk exposure (Mac Donald and Koch, 2006).

Loans and advances are the most profitable of all assets of a bank. These assets constitute the primary source of income by banks. As a business institution, a bank aims at making a giant profit. Since loans and advances are more profitable than any other assets, it is willing to lend as much of its funds as possible. But banks have to be careful about the safety of such advances (M. Radha, and SV. Vasudevan. 1980) from management accounting point of view, bank asset quality and operating performance are positively related. Historically, the occurrence of banking crises has often been associated with a massive

accumulation of non-performing loans which can account for a sizable share of total assets of insolvent banks and financial institutions, especially during a period of systemic crises.

Nonperforming loans generally refers to loans, which for a relatively long period of time do not generate income; that is the principal and/or interest on these loans has been left unpaid for at least 90 days. The economic and financial costs of bad loan are significant. Potentially, these loans may negatively affect the level of private investment, increase deposit liabilities and constrain the scope of bank credit to the private sector through a reduction of banks' capital, following falling saving rates as a result of runs on banks, accumulation of losses and correlative increased provisions to compensate for these losses. Impaired loans also have potential for reducing private consumption, and in the absence of deposit guarantee mechanisms to protect small depositors can be a source of economic contraction, especially when coupled with declining gross capital formation in the context of a credit crunch caused by erosion of banks' equity and asset (Fofack, 2005).

Criterion for identifying non performing loans varies throughout the world even between African countries. Some countries use quantitative criteria to distinguish between "good" and "bad" loans (e.g., number of days of overdue schedule payments), while others rely on qualitative standards (such as the availability of information about the client's financial status, and perspectives about future payments). However, the Basel II Committee emphasizes the need to evolve toward a standardized and internal rating-based approach (Fofack, 2005). Accordingly, the Basel committee puts non performing loans as loans left unpaid for a period of 90 days.

The definition of NLP varies across countries; there is no global standard to define nonperforming loans at practical level. Saba I, et al. (2012) argues that non-performing loan (NPL) is a sum of borrowed money upon which the debtor has not made his or her scheduled payments for at least 90 days. Nonperforming loan is either in default or close to being in default. Once a loan is nonperforming, the loans that it will be repaid in full are considered to be substantially lower. If the debtor starts making payments again on a nonperforming loan, it becomes a re-performing loan, even if the debtor has not caught up on all the missed payments. This is why most countries provide their own rules regarding NPLs. Non-performing loans are further defined as loans whose cash flows stream is so uncertain that the bank does not recognize income until cash is received, and loans those whose interest rate has been lowered on the maturity increase because of problem with the borrower. Nonperforming loans are also commonly described as loans in arrears for at least ninety days and non performing loans have been widely used as a measure of asset quality among lending institutions and often associated with failures and financial crises in both developed and developing world.

The term "bad loans" is used interchangeably with non- performing and impaired loans. Despite ongoing efforts to control bank lending activities, non performing loans are still a major concern for both international and local regulators (Boudriga et al, 2009). Greenidge and Grosvenor (2010), again argue that the magnitude of non-performing loans is a key element in the initiation and progression of financial and banking crises.

According to the IMF(2009), a non-performing loan is any loan in which interest and principal payments are more than 90 days overdue; or more than 90 days' worth of interest has been refinanced, capitalized, or delayed by agreement; or payments are less than 90 days overdue, but no longer anticipated. Non - performing loans can also be defined as defaulted loans, which banks are unable to profit from it. Usually loans fall due if no interest has been paid in 90 days, but this may vary between different countries and actors. Under the Ethiopian banking business directive, non-performing loans are defined as "loans or advances whose credit quality has deteriorated such that full collection of principal and/or interest in accordance with the contractual repayment terms of the loan or advances in question" (NBE,SBB/43/ 2008). It further provides that:

Loans or advances with pre established repayment programs are nonperforming when principal and/ or interest is due and uncollected for 90 (ninety) consecutive days or more beyond the scheduled payment date or maturity.

Therefore, loans become nonperforming when it cannot be recovered within certain stipulated period of time that is governed by some respective laws.

Generally, from the above definition NPL is:

i. A loan that is not earning income;

ii. Full payment of principal and interest is no longer anticipated;

iii. Principal or interest is 90 days or more delinquent or;

iv. The maturity date has passed and payment in full has not been made.

In Ethiopia the criteria of NPL is in accordance with the Basel rules. If a loan is past due 90 consecutive days, it will be regarded as non- performing. The criteria used in Ethiopian banking business to identify non-performing loan is a quantitative criteria based on the number of days passed from loan being due.

2.2. Classifications of Loans and Advances

Loan can be classified as performing and non-performing. Performing loan is loan that Payments of both principal and interest charges are up to date as agreed between the creditor and debtor. Generally, loans those are outstanding in both principal and interest for a long time contrary to the terms and conditions contained in the loan contract are considered as NPLs. To identify the loans which are non- performing and to calculate and determine the amount of provisions according to loans directive number SBB/43/2008 loans are classified into five class.

1. *Pass*: Loans or advances that are fully protected by the current financial and the paying capacity of borrower and are not subject to criticism. In other word passed means loans paid back.

2. *Special Mention*: Past due for more than 30 days but less than 90 days. Special mention class of loans implies Loans to incorporations, which may get some trouble in the repayment due to business cycle losses.

3. *Substandard:* Past due for more than 90 days but less than 180 days. Substandard signify Loans whose interest or principal payments are longer than three months in arrears of lending conditions are eased.

4. *Doubtful*: Past due for more than 180 days but less than 360 days. Doubtful indicate that full liquidation of outstanding debts appears doubtful and the accounts suggest that there will be a loss.

5. *Loss*: Past due over 360 days, in other word loss imply that outstanding debts are regarded as not collectable. Non-performing loans comprise the loans in the last three categories (Substandard, Doubtful and Loss), and are further differentiated according to the degree of collection difficulties.

2.3. Determinants of Non-performing Loan (NPL)

Despite the fact that loan is major source of banks income and constitutes their major assets, it is risky area of the industry. That is also why credit risk management is one of the most critical risk management activities carried out by firms in the financial services industry. In fact, from all risks banks face, credit risk is considered as the most dangerous as bad debts would impair banks profit. It has to be noted that credit risk arises from uncertainty in a given counterparty's ability to meet its obligations. It is widely accepted that the quantity or percentage of non-performing loans (NPLs) is often associated with bank failures and financial crises in both developing and developed countries.

In fact, there is abundant evidence that the financial/banking crises in East Asia and Sub-Saharan. African countries were preceded by high non-performing loans. The current global financial crisis, which originated in the US, was also attributed to the rapid default of sub-prime loans/mortgages. Allocating loans has always been one of the central pillars of the banking business. Traditionally this marked the start of a long term relationship with the client, which would continue at least until the maturity of the loan. With the growth of deposits, banks are supposed to increase their lending. However, when non-performing loans (NPLs) are high, the willingness to expand loan reduces. This relationship will be distorted under high NPL condition (Dickinson D and Hou Y.2009). In any lending process, there is inherent risk of loans being defaulted which leads to the concept of non- performing loans. The literature identifies two sets of factors to explain the evolution of NPLs over time. One group focuses on external events such as the overall macroeconomic conditions, which are likely to affect the borrowers' capacity to repay their loans, while the second group, which looks

more at the variability of NPLs across banks, attributes the level of non-performing loans to bank-level factors.

2.4. Bank Specific Variables:

Apart from macroeconomic variables, there is abundant empirical evidence that suggests that several bank specific factors (such as, size of the Bank, profit margins, efficiency, the terms of credit (size, maturity and interest rate), risk profile of banks (measured by several proxies including total capital to asset ratio and loans to asset ratio) are important determinants of NPLs. For instance, Salas and Saurina (2002) showed for Spanish banks that, in addition to real GDP growth and credit growth, credit growth, capital ratio and market power also explained variations in NPLs. Bercoff, Giovanni and Grimard (2002) showed that asset growth, operating efficiency and exposure to local loans also helped explain NPLs.

This study only considers seven bank specific variables owing to data availability. These are: bank's profitability (ROA)), real interest rate, credit growth, credit monitoring, loan maturity credit assessment, and collateralize loan.

2.4.1. Financial performance (ROA):

ROA is one indicator that is often used to measure the efficiency of the bank's operations. Research conducted by Vatanseve & Hepsen (2013) on the banking industry in Turkey said that the level of banking efficiency has positive effect on the NPL. According to the their study, a bank with an efficiency rate lower costs will increase non-performing loans, due to inefficient banks which have bad management in managing their credit risk and it leads to increase non-

performing loans or NPL. According to Bank Indonesia regulation, if the ratio close to 100%, it means that the performance of the bank showed a very low level of efficiency. Godlewski (2004) use ROA as a proxy for performance, shows that banks profitability negatively impacts the level of NPL ratio.

2.4.2. **Lending Interest rate:**

According to some researchers high interest rate has a significant and positive relationship with Non- Performing Loans. The impact of real interest rates on NPLs is extensively documented in the literature. In fact, several studies report that high real interest rate is positively related to this variable (Jimenez and Saurina, 2005 and Fofack, 2005). There is a view that when banks increase interest rate, there is an additional payment burden on borrowers resulting in increased defaults (Fofack, 2005). The study of Sinkey (2002) shows that increase in interest rate negatively impacts the loan defaults. Rajan & Dhal (2003) indicates a significant association of high cost of borrowing and Non-Performing Loans (NPLs). The interest rate affects also the amount of bad debt in the case of floating interest rate. This implies that the effect of interest rates should be positive, and therefore, there is an increase in the debt caused by the increase in payments of interest rates and hence the rise of non-performing loans (Bofondi and Ropele, 2011).

2.4.3. **Loan Growth:**

Excessive lending by commercial banks is often identified as an important determinant of NPLs (Salas and Saurina, 2002; and Jimenez and Saurina, 2005; and Sinkey and Green walt, 1991). Literature shows that rapid credit growth is often associated with higher NPLs. Keeton (2003) also showed a strong

relationship between credit growth and impaired assets. Specifically the results showed that rapid credit growth was associated with lower credit standards contributed to higher loan losses.

The study of Jiménez, et al., (2007) points out that herd behavior, moral hazard, agency problems and disaster nearsightedness are the basic factors behind the lenient terms of credit. Furthermore they linked the lenient credit terms with Non-Performing Loans. When the economy is intensifying, bank managers are found to exercise leniency in giving credit because lower credit expansion means lesser income generation which indicates poor performance.

2.4.4. Credit Monitoring:

The banks, which incur more expenses on monitoring and assessing the borrowers, are less efficient in financial operations but these banks have lower NPLs (Hughes et al, 1996). Various studies show that state-owned banks are less efficient because they concentrate more on monitoring the NPLs. Salas and Saurina (2002) are of the view that inefficient bank management causes NPLs.

The loans are more secured if the banks keep a continuous check on the borrowers. The banks need to give their borrowers full attention, so they are not relaxed at any stage about repayment of their loans. It has been seen that less monitoring of borrowers lead to NPLs (Agresti et al, 2008). It has been seen that less monitoring of borrowers lead to NPLs. There are evidences in literature about poor monitoring, on the part of the banks, to be the main bank-specific factors behind creating NPLs. The banks carry on these practices in order to increase profit (Agresti et al, 2008; Salas and Saurina, 2002, for Spain).

2.4.5. Loan Maturity:

Jimenez and Saurina (2003) empirical study shows that loan maturity structure had a positive effect on default, i.e., short-term loans of less than 1-year maturity had a significant positive effect on default.

There is also evidence on loan maturity and NPL which was studied in Bangladish banks by Syeda Zabeen Ahmed (2006) shows that horizon of loan maturity has negative influence on non performing loans. Other study in pakistan by Kiran Jameel (2014) shows that maturity period of loan has a negative relationship with NPL ratio i.e. the lower the maturity period of loans leads towards high level of NPL ratio.

2.4.6. Credit Assessment:

Credit analysis constitutes the critical phase of bank lending process. Credit facility requests are analyzed by assessing the five Cs - Character, Capital, Collateral, Capacity and Condition. Thus failing to carry out proper risk assessment would lead to missing any or all of the mentioned issues, which has the potential for the occurrences of NPLs. Ning (2007) indicated the impact of poor risk assessment on loan quality. Furthermore, the survey results indicate the fact that banks pursue strong KYC principle lead to high loan quality. The fact that banks pursue a loose KYC before admitting a new customer indulge them to recruiting a borrower with poor track record, inadequate business management, excessively risky and/or unviable venture that would eventually led to poor credit performance.

2.4.7. Collateralized loans:

Collateral refers to assets that the Bank holds to mitigate default risk. It is a security that a borrower gives to a Bank to guarantee repayment of a loan. It depends on the Bank's policy that all loans shall be backed by acceptable collateral. It is a second way-out and it should never be a substitute for credit worthiness, which is the existence of adequate cash flow to repay the loan. Security is taken to mitigate the bank's risk in the event of default and is considered a secondary source of repayment (Koch & MacDonald, 2003). In the banking environment, security is required among others, to ensure the full commitment of the borrower, to provide protection should the borrower default from the planned course of action outlined at the time credit is extended, and to provide insurance should the borrower default.

2.5. Review of Related Empirical Study

The previous section presented theories of nonperforming loan focusing on definition, classification of NPL and determinant of NPL. This section reviews the empirical studies on the determinants of NPLs. There are a number studies that examined the factors that affect the level of banks NPL from the perspective of both developing and developed nations. As indicated in the above section, determinants of bank lending behavior may be classified into internal and external factors. External factors include gross domestic product, interest rates and inflation. Internal factors, on the other hand include capital, cost efficiency, loan to deposit ratio and deposit rate of banks. Both internal and external determinants studied by different scholars are reviewed in the following paragraphs. In the banking literature, the problem of NPLs has been revisited in

several theoretical and empirical studies. A synoptic review of literature brings to the fore insights into the determinants of NPLs across countries. A considered view is that banks' lending policy could have crucial influence on non-performing loans (Reddy, 2004 sited in Ranjan and Dhal, 2003.).

The internal determinants of banks NPLs are those management controllable factors which account for the inter-firm differences in NPLs, given the external environment. The distinctive features of the banking sector and the policy choices of each particular bank with respect to their efforts for maximum efficiency and improvements in their risk management are expected to exert a decisive influence on the evolution of NPLs (Daniel 2010). Numerous literatures have examined the connection between bank-specific factors and NPLs. The uniqueness of banking sector, banking polices, efficiency maximization efforts and risk reduction polices also have significant impact on the quality of loans.

Furthermore variables such as efficiency of the management, risk appetite and liquidity level, profitability, capital availability, size of banks, nature of operation, deposits and lending rates also have significant influence on the growth and decline of NPLs (Ahmad and Bashir, 2013.). The study of Salas and Saurina (2002) on Spanish banks showed that, in addition to real GDP growth and credit growth, bank size, capital ratio and market power also create variations in NPLs. In the same year the study done by Bercoff, et al., (2002) conclude that asset growth, operating efficiency and exposure to local loans also helped to explain the level of NPLs. There are around ten bank specific hypotheses found in different empirical study hypothesized by different researchers and believed to have impact on the level of nonperforming loan , among thus six of them are developed and tested by Berger and DeYoung(1997) and Louzis et,al.(2011)

whereas the rest hypotheses are developed and tested by others. Berger and DeYoung (1997) also investigate the existence of causality among loan quality, cost efficiency and bank capital using a sample of U.S. commercial banks for the period 1985-1994. They codified and tested four hypotheses concerning the flow of causality between the mentioned variables and NPL.

2.6. Empirical study in Ethiopia

In the context of Ethiopia, there appears to be limited studies on the determinants of bank's NPLs. Wonimagegnehu (2012) assessed the bank specific determinants of NPLs in Ethiopian commercial banking sector and the findings of the study shows that poor credit assessment, failed loan monitoring, underdeveloped credit culture, lenient credit terms and conditions, aggressive lending, compromised integrity, weak institutional capacity, unfair competition among banks, willful default by borrowers and their knowledge limitation, fund diversion for unintended purpose, over/under financing by banks ascribe to the causes of loan default.

However, the study outcome failed to support the existence of relationship between ROA, loan maturity, banks size, lending interest rate, collateralized loan and ownership type of banks and occurrences of nonperforming loans.

The study of Zelalem (2012), examined the bank-specific and Macro-economic determinants of Non-performing loans (NPLs) of commercial banks in Ethiopia. The study adopts a mixed methods research approach by combining documentary analysis (structured review of documents) and in-depth interviews. More specifically, the study reviews the financial records of eight commercial banks in Ethiopia and relevant data on macroeconomic factors considered for

the period from the year 2000 to 2011. The findings of the study show that, loan growth, financial performance, operational efficiency, effective exchange rate, inflation rate and gross domestic product have negative and statistically significant relationship with banks' NPLs. On the other hand, variables like bank size and state ownership have a positive and statistically significant relationship with banks' NPLs. The study fails to see some bank specific variables like interest rate, loan maturity, monitoring (Credit management), and collateralized loans.

The study of Anisa (2015) investigated the Determinants of Nonperforming Loan in Ethiopian Commercial Banks. The study aimed to test and confirmed the effectiveness of common commercial banks non-performing loan determinants and how it affects the level of nonperforming loan in Ethiopia commercial banks (two public owned and six private owned banks). Seven factors (four bank specific and three macroeconomic factors) affecting banks nonperforming loan were selected and analyzed. The results of balanced fixed effect panel data regression analysis showed that deposit rate, loan to deposit ratio and lending interest rate had positive and significant impact on banks nonperforming loan. Lending interest rate is a very important determinant of nonperforming loan in Ethiopia banking industry. Cost efficiency had negative and significant impact on banks nonperforming loan. Bank solvency ratio and gross Domestic product (GDP) growth rate and inflation rate had negative and statistically insignificant impact on banks nonperforming loan.

The study fails to see some bank specific variables like loan maturity, monitoring (Credit management), bank's profitability (ROA), profitability, collateralized loans, and credit assessment variables.

A very recent study of Gebru (2015), examined the bank-specific determinants of Non-performing loans (NPLs) of Ethiopian commercial Study. The study found that poor credit analysis and unsound lending practices, lack of focused loan monitoring and follow-up, lenient credit terms and conditions, compromised integrity, and fund diversion as the major factors that contribute to loan default. The study fails to see some bank specific variables like loan maturity, profitability and credit growth.

In summary, as we have seen there is no similar study on bank specific determinants of NPL in the context of Ethiopia. Thus, a research undertaken to explore the factors for NPLs in the case of Construction and Business Bank is something that would help addressing an important research gap.

2.7 . Identification of knowledge gap

In line with the above theoretical as well as empirical review there is no global standard to define non-performing loans at practical level. Nonperforming loan is loan either in default or close to being in default. Nonperforming loan is not only harm to banks, but also it is danger for the overall economy. It also revealed that banks nonperforming loan can be affected by different factors such as bank specific and macroeconomic factors.

In abroad country some research revealed that loan maturity and NPL which was studied in Bangladish banks by Syeda Zabeen Ahmed (2006) and shows that loan maturity and NPL are negatively correlated and other study in Pakistan by Kiran Jameel (2014) also shows that maturity period of loan has a negative relationship with NPL ratio i.e. the lower the maturity period of loans leads towards high level of NPL ratio.

We have seen that in the studies of abroad countries loan maturity and NPL are negatively correlated   and there is no as such study that indicates the relationship between loan maturity and nonperforming loans in our country particularly in CBB as if it is well known in the past years in providing long term residential construction loans that have long maturity period .In addition to this there is also limited empirical study in Ethiopia that included some bank specific factors like collateralized lending.

In summary, there are several studies exploring the factors contributing to NPLs. However, there is no similar study in abroad as well as in the context of Ethiopia. For instance the effect of bank specific factors like loan maturity, collateralizing loans on NPL have not further studied. Therefore, this research will contribute towards filling the research gap by identifying and analyzing bank specific factors that affect level of nonperforming loans particularly in the state owned bank of Construction and Business Bank.

2.8. Theoretical Frame Work

The theoretical frame works indicate the relationship between the determining bank specific factors and non performing loans.

Bank specific Factors

- *Credit Assessment*
- *Credit Monitoring*
- *Lending Interest Rate*
- *Loan Maturity*
- *Collateralized Loan*
- *Return on Asset*
- *Loan Growth Rate*
- *Loan Deposit Ratio*

NPL
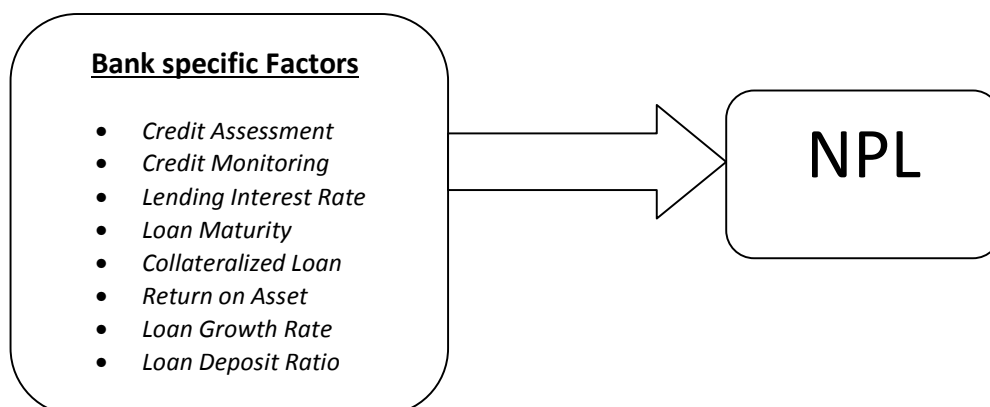
CHAPTER THREE

3. Research Design and methodology

3.1. Research Design

In order to achieve the objectives of the study, the research has undertaken both Explanatory and descriptive approach. The research study has explored the important bank specific determinants of NPL through descriptive statistics, regression model and correlation study has been used.

The main reason using explanatory approach is it nicely examines the cause & effect relationship between NPL and its determinants & enables to answer the RQ.

3.2. Sampling Method:

The study used purposive sampling or judgmental (non-probability sampling) method so as to get adequate and reliable information in relation to credit. Branches of the bank that has no loan outstanding and that have few number of loan customers were excluded from the sample. The sample size was 65 staffs of CBB that have direct relation with credit operations.

The main reason of using purposive sampling method is that the method enables us to get adequate or optimal, in-depth, and reliable, information about the determining factors of NPL in CBB.

3.3. Types of data:

Both primary and secondary data was collected and systematically presented and analyzed in this paper. Primary data collected through questionnaire to respondents and secondary data was obtained from annual reports of the bank and NBE reports.

3.4. Method of Data Collection

Primary data was collected through questionnaires and distributed to respondents that involve loan processing. Such group involves credit relationship officers, credit relationship managers, credit directors and vice president, internal audit and loan recovery and rehabilitation officers.

Secondary Data directly gathered from records of the bank and NBE. The data include aggregate loan outstanding balances, NPLs as at the annual closing date, as of June 30 of the period 2011 to 2015 was collected and considered.

3.5. Data Presentation and Analysis

In order to achieve the objective of the study and to test the proposed hypothesis, the collected data will be analyzed by using SPSS ver.20 and then correlation analysis between dependent and independent variables analyzed. Finally, descriptive statistics and multiple regression model employed in the study

3.6. Formulation of Empirical Model

So as to investigate the bank-specific determinants of the bank's NPLs, the following general multivariate regression equations used:

$$Y_{i,t} = \beta_0 + \beta X_{i,t} + \mu_{i,t} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.(1)$$

Where;

$Y_{i,t}$ - is the NPLs ratio of bank i at time t, with i=1… N, t=1… T or dependent variable

β_0 - is a constant term,

$X_{i,t}$ - is the explanatory variables(bank specific variables) of bank i at time t and

$\mu_{i,t}$ - the disturbance term.

As noted in Brooks (2008) the rational for the inclusion of disturbance term are: first, even in the general case where there is more than one explanatory variable, some determinants of $Y_{i,t}$ will always in practice be omitted from the model. Second, there may be errors in the way that $Y_{i,t}$ is measured which cannot be modeled. Finally, there are bound to be random outside influences on Y_i, t that again cannot be modeled.

$$NPL_{it} = \beta 0 + \beta 1 \,(LTD)it + \beta 2(LGR)it + \beta 3(ROA)it + \varepsilon \, it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1)$$

Where;

NPL= nonperforming loan ratio in year *t*

LTD= represent Loan to deposit ratio of bank '*i*' in year *t*

LGR=represent loan growth rate

ROA= return on asset of in year *t*

β0= an intercept,

$\beta 1$*, β2, β3, β4,* = estimated coefficient of explanatory variables 'i' in year *t*

εit= the error term for error terms for intentionally/unintentionally omitted or added variables. It has zero mean, constant variance and non- auto correlated

3.7. Organization of the Study

This study organized in to six chapters. The first chapter deals with introduction part, the second chapter includes literature review, and the third chapter Methodology. The fourth chapter consists of data presentation and analysis, the fifth chapter contains summary of finding results and lastly conclusion and recommendation.

CHAPTER 4

DATA ANALYSIS AND INTERRETATION

This chapter presents results relating to the bank-specific factors affecting the Non-Performing Loans in Construction and Business. Firstly, it presents the descriptive statistics (frequency, percentage, mean and Standard dev.) and regression analysis and then summarizes the importance of each factor.

4.1. Demographic Characteristics:

The structured questionnaire(Appendix 1) was distributed to sixty five (65) employees which related to the credit department including loan officers, credit relationship managers, Internal audit, credit analyst, loan rehabilitation and recovery officers ,credit directors, and vice presidents of the bank. Out of 65 questionnaires distributed 61 were completed and returned. So the overall response was 93.8% which is impressive if we see it in the context of the research culture.

Table 4. 1. Survey Response Rate.

No.	Particulars	
1	Sample Size	65
2	Completed and returned questionnaires	61
3	Response rate	93.8%

Source: *Survey outcome and own computation*

4.1.1. Respondent's position

The survey respondents included 19.67, % loan officers, 39.34% Credit relationship managers ,16.39 % credit analyst 9.84 % recovery officers, 11.48 % Internal audit , 1.64 % credit directors and 1.64 % vice president.

Table 4.2. Position Survey result.

No.	Position	Frequency	Percent (%)
1	Credit relationship officer	12	19.67
2	Credit Relationship Manager	24	39.34
3	Credit analyst	10	16.39
4	Loan recovery & rehabilitation officer	6	9.84
5	Internal audit officer	7	11.48
6	Credit director	1	1.64
7	Vice president	1	1.64

Source: *Survey outcome and own computation*

4.1.2. Respondent's experience

The survey indicated that 36.1% of the respondents had 6-10 years of banking experience and has got the highest number of respondents.

The second larger number of respondents belonged to the category of 1-5 years of experience as their percentage was 34.4%. Similarly 8.2% of the respondents belonged to the category of 11-15 years of experience which was the third larger percent of respondents.

The last category with lowest percentage 8.2% and 3.3% belonged to above 15 years and less that 1 year of experience respectively. This shows that respondents had vast experience in the banking service which increased the quality of the survey.

Table 4.3. Experience Survey result.

No.	Experience	Frequency	Percent (%)
1	Less than 1 year	2	3.3
2	1-5 year	21	34.4
3	6-10 year	22	36.1
4	11-15 year	11	18.0
5	Above 15 years	5	8.2

Source: *Survey outcome and own computation*

4.1.3. Respondent's Gender

Out of 61 valid responses, 62.3% was male and 37.7% was female. This shows that credit department dominated by male officers.

Table 4.4. Gender Survey result**.**

No.	Gender	Frequency	percent
1	Male	38	62.3
2	Female	23	37.7
	Total	61	100

Source*: Survey outcome and own computation*

4.1.4. Respondent's Educational level

We can see that almost majority of the bankers related to credit department are highly qualified and majority of the staffs have first degree (68.9 %) and 27.9% of the staffs have Masters Degree. This indicates that credit staffs of CBB are highly qualified.

Table 4.5. **Educational level Survey result.**

No.	Educational level	Frequency	Percent (%)
1	PhD	-	-
2	Masters degree	17	27.9
3	First degree	42	68.9
4	Diploma	2	3.3
5	12th Grade complete	-	-

Source: *Survey outcome and own computation*

4.1.5. Determinants of NPL in CBB are obvious.

Respondents express their agreement or disagreement on the statement that determinants of nonperforming loans in CBB are obvious. As a survey result, 77 percent of the respondents agreed to the statement while 3.3 percent were disagreed and 19.7 percent neutral. This indicates that determinants of NPL are

obvious by credit staffs and this enables us to know the determining factors of NPL in CBB.

Table 4.6. Determinants of NPLs in CBB are obvious

	Frequency	Percent (%)
Agree	47	77.0
Neutral	12	19.7
Disagree	2	3.3
Total	61	100

Source: *Survey outcome and own computation*

4.2. Descriptive Statistic results

The main objective of this study was to find out the bank-specific determinants of Non-Performing Loans in Construction and Business Bank. The study required respondents to show their agreement and disagreement to certain statements which were related with bank-specific factors of Non-Performing Loans and responses were reflected in various ways due to the fact that respondents may reflect their own feelings on the determining factors of NPL in CBB.

Descriptive statistics was employed to analyze qualitative data and the results were tested with non-parametric tests of significance. Besides, measures of central tendency (mean, standard deviation) were used to analyze the questionnaire survey result.

In context of the objective the following specific research questions and hypothesis have been developed and presented in the introduction part of this research paper.

. H1: There is a positive relationship between credit assessment and NPLs.

. H2: There is a positive relationship between lending interest rate and NPLs.

· *H3: There is a negative relationship between credit monitoring and NPLs.*

· *H4: There is a positive/negative relationship between loan maturity and NPLs.*

· *H5: There is a negative relationship between collateralized loan and NPLs*

The following table depicts responses on the relationship between credit assessment and Non-Performing Loans.

Table 4.7. Factors on relation between credit assessment and occurrences of NPLs.

Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Mean	Std. dev
Strong due diligence assessment decrease the tendency of loan to default/increase loan quality	42.60	55.80	1.60	-	-	4.41	0.528
Sharing credit information reduces occurrence on loan default.	37.70	52.50	6.60	3.20	-	4.25	0.722
Know Your customer (KYC) Policy of bank lead to high Loan quality	49.20	42.60	4.90	3.30	-	4.38	0.734
Poor credit analysis contributes to the occurrences of NPL.	54.10	41.00	3.30	-	1.60	4.46	0.721
Good loan underwriting ensures loan performance	18.00	37.70	31.20	9.80	3.30	3.57	1.008
Good credit assessment reduces loan default	37.70	59.00	3.30	-	-	4.34	0.544

Source: *Survey outcome and own computation*

As we see from the above table 98.4 percent of the respondents agree (mean 4.41 and standard deviation 0.528) that if the bank conducts Strong due diligence assessment it decrease the tendency of loan to default (increase loan quality) or lead to high loan quality. With regard to good credit assessment, 96.7 Percent (mean 4.34 and standard deviation 0.544) of the respondents agree that good credit assessment reduces loan default. On the other hand, Poor credit analysis believed (agreed) to contribute loan to default as responded by 95.1 percent

(mean 4.46 and standard deviation 0.721).As far as Know Your customer (KYC) Policy of bank (91.8%) and sharing credit information (90.3%) is concerned respondents agree that it is important in ensuring loan quality. However, 13.5 percent (mean 3.57 and standard deviation 1.008) of the respondents disagree on the assertion that good loan underwriting does not ensure loan performance or does not increase loan quality of the bank. In other words 98.4 percent of the respondents agree to the statement of strong due diligence assessment decrease the tendency of loan to default/increase loan quality and 96.7 percent of the respondents agree that good credit assessment reduces tendency of loan to default. When credit analysis and credit assessment is poor, the loans would be prone to default. Therefore credit assessment and NPL has a positive relationship.

In general, from the above table respondents strongly agree that banks who conduct Poor credit analysis will increase the tendency of loan to default or prudent credit analysis will increase the tendency of loan quality (decrease loan to default) and KYC Policy of bank would lead to have a better loan quality.

Table 4.8. Factors on relation between Lending interest rate and occurrences of NPLs.

Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Mean	Std. dev
Loans having big interest have more chances to turn to NPL.	18.00	34.40	26.20	19.70	1.60	3.480	1.058
If high interest rates are charged it can lead to loan default.	11.50	45.90	18.00	24.60	-	3.440	0.992
Interest charged on loan affects the performance of loans.	8.20	34.40	26.20	31.1	-	3.200	0.980
As compared to other private banks CBB offer lower lending interest rate.	11.50	49.20	16.40	19.70	3.30	3.460	1.042

The above table (4.8) shows responses on factors indicating the relation between lending interest rate and occurrence of the non-performing loans. Even though, many researchers investigate in their study that high interest rate is one of the internal factors that lead to loans to default but only 52.4 percent of the respondents agree and 21.3 percent disagree with the statement that Loans having big interest have more chances to turn to NPL. Likewise only 42.6% of the respondents agree interest charged on loan affects the performance of loans but 57.4% disagree on that interest charged on loan does not affect the performance of loan. On the other hand, 60.7 percent (mean 3.46 and standard deviation 1.042) of the respondents agree that as compared to other private banks CBB offer lower lending interest rate. Therefore, it can be concluded that interest has no a very strong relation with Non-Performing Loans and offering lower interest rate does not increase the performance of loan or reduce loan default of the bank.

Table 4.9. Factors on relation between credit monitoring and occurrences of NPLs.

Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Mean	Std. dev
In my bank (CBB), Poor Loan follow-up would leads to occurrence of nonperforming loans.	37.70	50.80	3.30	8.20	-	4.180	0.847
Strict credit monitoring in the bank would ensure loan performance.	32.80	57.40	4.90	4.90	-	4.180	0.742
Properly monitoring of a weak loan or advance can decrease the chances of its default.	32.80	54.10	4.90	8.20	-	4.110	0.839

Loan follow up is directly related with the occurrence of NPLs .	**26.20**	**44.30**	**11.50**	**18.00**	-	**3.790**	**1.035**
If the bank's CRM and CRO spends more on credit monitoring, it can lower the level of NPLs.	**24.60**	**54.10**	**16.40**	**4.90**	-	**3.980**	**0.785**

The above table shows responses on factors indicating the relation between credit monitoring and occurrence of the non-performing loans. As we see from the above table 90.2 percent (mean 4.18 and standard deviation 0.742) of the respondents believed that strict credit monitoring ensures loan performance and also 88.9 percent (mean 4.18 and standard deviation 0.847) of respondents agree on if the bank's Loan follow-up is Poor, it would increase the occurrence of nonperforming loans. Therefore, we can say that strict credit monitoring of loan can enhance loan quality and directly related to the performance of loans.

On the other hand 86.9 percent (mean 4.11 and standard deviation 0.839) of the respondents agree with the assertion that a properly monitored weak loan and advance can decrease the chances of its default. This indicates that loan follow-up can never substitute proper credit assessment and a proper credit assessment may decrease the level of monitoring and the occurrence of NPL.

On the other hand 78.7 percent (mean 3.98 and standard deviation 0.785) of the respondents agree that if the bank's CRM and CRO spend more on credit monitoring, it can lower the level of NPLs. If there is a continuous credit follow-up, it would decrease the chance of the loan to default.

In general, from the foregoing discussion it can be concluded that credit monitoring directly related to the performance of loan. If there is strict and continuous monitoring, the chance of the loan to default decrease and it perform

well. If proper credit assessment (analysis) conducted, loan follow up may be easy and decrease the chance of loan to default.

Table 4.10. Factors on relation between loan maturity period and occurrences of NPLs.

Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Mean	Std. dev
Loan maturity affects the tendency of loans to default.	21.30	54.10	18.00	6.60	-	3.900	0.810
Mostly loans having long maturity period will have higher tendency to default.	4.90	34.40	19.70	34.40	6.60	2.970	1.080
Mostly loans having medium maturity period will have moderate tendency to default.	30.00	49.20	21.30	23.00	-	3.390	0.918
Mostly loans having short maturity period loans will have lower tendency to default.	9.80	34.40	23.00	27.90	4.90	3.160	1.098

Source: *Survey outcome and own computation*

The above table shows responses on factors indicating the relation between loan maturity and occurrence of non-performing loans. As we see from the above table 75.4% of the respondents agree that loan maturity affects the tendency of loan to default.

Only 39.3% (mean 2.97 and standard deviation 1.080) of respondents agree and 41% of the respondents disagree on mostly loans having long maturity period loans will have higher tendency to default and 19.7% of the respondents are neutral. Therefore; we can say that in CBB loans that have long maturity period have no high tendency to default.

Similarly only 44.2 percent of the respondents agree mostly loans having short maturity period will have lower tendency to default and 32.8 and 23 percent of

the respondents disagree and neutral on it respectively. On the other hand 79.2 percent (mean 3.39 and standard deviation 0.918) of the respondents agree that loans having medium maturity period will have moderate tendency to default.

In general loans having long maturity period (long term loans) have no high tendency to default and short maturity period (short term loans) have no lower tendency to default. Loan maturity affects the tendency of loan to default to a lesser extent.

Table 4. 11. Factors on relation between collateralized loans and occurrences of NPLs.

Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Mean	Std. dev
Collateralized loans perform well	19.70	39.30	24.60	16.40	-	3.620	0.986
Securing loan by collateral minimize loan default	19.70	52.50	13.00	11.50	3.30	3.740	1.015
Most of the time non collateralized loans are defaulted	18.00	19.70	39.30	19.70	3.30	3.300	1.085
Proper/careful collateral estimation decreases the tendency of loan default.	21.70	41.70	13.30	20.00	3.30	3.580	1.139

Source: *Survey outcome and own computation*

With regard to the relation between collateralizing loans and occurrence of non-performing loans, 72.2 percent (mean 3.74 and standard deviation 1.015) of respondents agree with statement that securing loan by collateral minimize loan default and 63.4 percent agree on the statement that Proper/careful collateral estimation decreases the tendency of loan default. On the other hand 23 percent of the respondents disagree on the statement that most of the time non collateralized loans are defaulted. On the other hand 37.9, 39.3 and 23 percent

of the respondents agree, neutral and disagree on the statement that most of the time non collateralized loans are defaulted.

In general, respondent's agreement with the assertion that collateralizing loans would help loan performance indicates that the relation between collateralizing loans and loan default are moderate and negatively related. Moreover, the respondents are of the view that borrowers would service the loan if they have pledged collateral for fear that it would be foreclosed in case of default. Collateral valuations also affect the tendency of loan to default. Properly estimated collaterals would have fewer tendencies to collect the collateral value at the time of loan foreclosure.

4.3. Regression results

In the descriptive statistics part, the study shows the mean, standard deviation values of the dependent and explanatory variables based on collected questionnaires. However, this section provide test for the classical linear regression model (CLRM) assumptions such as heteroscedasticity, autocorrelation and multicolinearity tests.

• Heteroscedasticity Test

In the classical linear regression model, one of the basic assumptions is Homoskedasticity assumption that states as the probability distribution of the disturbance term remains same for all observations. That is the variance of each ui is the same for all values of the explanatory variable.

Accordingly, in order to detect the heteroscedasticity problems, Breusch-Pagan or Cook-Weisberg test was utilized in this study. This test states that if the p-value is significant at 95% confidence interval, the data has heteroscedasticity

problem, where as if the value is insignificant (greater than 0.05), the data has no heteroscedasticity problem.

• Auto correlation Test

Furthermore, the study tested the autocorrelation assumptions that imply zero covariance of error terms over time. That means errors associated with one observation are uncorrelated with the errors of any other observation. As noted by Gujarati (2004), the best renowned test for detecting serial correlation is Durbin Watson test. The Durbin – Watson statistics are equal to 2.48 indicating that there is no correlation between the variables and residual in this study, thus no autocorrelation problem. Thus, this implies that error terms are not correlated with one another for different observation in this study.

• Multicolinearity Test

The term Multicolinearity indicates the existence of exact linear association among some or all explanatory variables in the regression model. When independent variables are multi collinear, there is overlapping or sharing of predictive power. Merard (1995) tolerance should be more than 0.2 and VIF value should be less than 10 (Myers, 1990). Thus, the SPSS result shows that the tolerance value is above 0.2 and VIF value is below 10(see Annex 4).Therefore there is no multicollinearity problem in the variables.

Accordingly, the regression result was made and coefficients of the variables were estimated via SPSS version 20 software. Thus, the model used to examine the determinants of NPLs of Construction and Business Bank in this study was:

$NPL_{it} = \beta_0 + \beta_1(LTD)_{it} + \beta_2(LGR)_{it} + \beta_3(ROA)_{it} + \varepsilon_{it}$..(1)

Where;

NPL= nonperforming loan ratio of in year t

LTD= represent Loan to deposit ratio in year t

ROA= return on asset of in year t

$\beta 0$= an intercept,

$\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, , = estimated coefficient of explanatory variables 'i' in year t

εit= the error term for error terms for intentionally/unintentionally omitted or added variables. It has zero mean, constant variance and non- auto correlated.

Accordingly, table 4.12 below presents the result of regression model made to examine the impact of explanatory variables on NPLs. Hence, NPLs ratio is dependent variable whereas Loan to Deposit ratio (LTD), Return on Asset (ROA), Loan Growth Rate (LGR) are the explanatory variables.

Table: 4.12. Correlation matrix

	NPL	LDR	ROA	LGR
NPL	1			
LDR	-0.318	1		
ROA	0.965	-0.3	1	
LGR	-0.066	-0.736	-0.108	1

Source: *SPSS out come*

Table 4.12 indicates the result of correlation matrix of four variables (NPL, LDR ROA and LGR). NPLs ratio has negatively associated with LDR and LGR which is -0.318, and -0.66 respectively. This indicates that ROA has positively and strongly related with NPLs (0.965). While LGR and LDR have negative and weak relationship with NPL (-0.066) and (-0.318) respectively. Loan growth rate negatively and moderately correlated with loan to deposit ratio (-0.736).ROA has a negative relationship with LDR which is -0.3. It is clear that no two variables are highly correlated .Thus; there is no multicollinearity problem in this data set.

Table 4.13. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.965[a]	.932	.728	.48294	2.482

Source: SPSS ver.20 outcome

Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the Table 4.13, the value of adjusted R squared was 0.728, an indication that there was variation of 72.8% on the non-performing loans in CBB due to changes in LDR, ROA, and LGR at 95% confidence interval. This shows that 72.8% changes in non-performing loans in CBB could be accounted for by changes in LDR, ROA, and LGR. R is the correlation coefficient which shows the relationship between the study variables. The findings show that there was a strong positive relationship between the study variables as shown by 0.965. The Durbin – Watson statistics are equal to 2.482 indicating that there is no correlation between the variables and residual in this study. Thus there is absence of autocorrelation problem.

Table 4.14 Regression result

Model		Un standardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.307	5.250		.249	.845
	LDR	.000	.068	.002	.004	.997
	ROA	1.168	.383	.969	3.049	.202
	LGR	9.655E-005	.001	.040	.089	.943

Source: SPSS ver.20 outcome

Formulating the regression results based on the SPSS outcome:

$$NPL_{it} = 1.307 + 0.97(ROA)_{it} + 0.04(LGR)_{it} + 0.002(LDR)_{it}$$

Hypothesis:

H6: There is a negative relationship between financial performance (ROA) &NPLs.

H7: There is a positive relationship between loan growth rate and NPLs.

H8: There is a positive relationship between loan to deposit ratio and NPLs

Therefore; the finding based on the regression result shows that:

Return on Asset (ROA)

The study hypothesized that there is a negative association between ROA and NPLs of CBB. Contrary to the hypothesis, the estimated coefficient of ROA was 0.97. This reveals that ROA has a positive impact on the levels of NPLs and it implies that for one unit change in bank profitability measured in terms of ROA, keeping the other thing constant had resulted 0.97 unit change on the level of NPLs in the same direction. Therefore;

- *ROA is positively related (correlated) with NPLs ratio and beta coefficient is 0.97 but not statistically significant (0. 202) at 5% level of significance. Hence the Ho6 is rejected.*

This study is similar to research conducted by Vatanseve & Hepsen (2013) on the banking industry in Turkey said that the level of banking efficiency (ROA) has positive effect on the NPL. The result disagree with Godlewski (2004) that ROA as a proxy for performance shows that banks profitability negatively impacts the level of NPL ratio.

Loan growth rate (LGR)

The study hypothesized that there is a positive association between LGR and NPLs of CBB. Similar to the hypothesis, the estimated coefficient of LGR was 0.04. This reveals positive and statistically significant impact of LGR on the levels of NPLs and implies that for one unit change in bank loan growth rate, keeping the other thing constant had resulted 0.04 unit change on the level of NPLs in the same direction. Therefore; *NPLs ratio and LGR showing positive relationship*

.The beta coefficient is (0.04) and is statistically insignificant, hence the Ho7 is accepted.

The result is similar to most of researchers such as Jimenez et al. (2005); Lis et al. (2000) and Sinkey and Greenwalt (1991).However, similar findings are reported by Pasha and Khemraj (2009) and Al-Smadi and Ahmad (2009).

Loan to deposit ratio (LDR):

The study hypothesized that there is a positive association between LDR and NPLs of CBB. Similar to the hypothesis, the estimated coefficient of LGR was 0.02. This reveals positive and statistically significant impact of LGR on the levels of NPLs and implies that for one unit change in bank loan growth rate, keeping the other thing constant had resulted 0.02 unit change on the level of NPLs in the same direction. Therefore;

- *NPLs ratio and LGR showing positive relationship .The beta coefficient is 0.02 and statistically insignificant, hence the Ho8 is accepted.*

CHAPTER FIVE

SUMMARY OF THE RESEARCH FINDINGS

5.1. Summary of the descriptive result

After dimension reduction factor analysis on individual variables, data were transformed to compute mean of the mean for the factors on NPL as new variable as described below.

Credit Assessment is the new variable as a result of Poor credit analysis contributes to the occurrences of NPL & Strong due diligence assessment decrease the tendency of loan to default/increase loan quality mean. Loan maturity is the mean of new variable as a result of Loan maturity affects the tendency of loans to default. Collateral is the mean of new variable as a result of securing loan by collateral minimizing loan default and collateralized loans perform well.

Table 5.1: Summary of descriptive result

No.	Factors	Mean	Std.dev
CA1	Poor credit analysis contributes to the occurrences of NPL.	4.460	0.721
CA2	Strong due diligence assessment decrease the tendency of loan to default/increase loan quality	4.410	0.528
CM1	In my bank (CBB), Poor Loan follow-up would leads to occurrence of nonperforming loans.	4.180	0.847
CM2	Strict credit monitoring in the bank would ensure loan performance	4.180	0.742
LMAT1	Loan maturity affects the tendency of loans to default.	3.900	0.810
COL1	Securing loan by collateral minimize loan default	3.740	1.015
COL2	Collateralized loans perform well	3.620	0.986
LIT1	Loans having big interest have more chances to turn to NPL.	3.480	1.058
LIT2	As compared to other private banks CBB offer lower lending interest rate.	3.460	1.042

Source: Survey outcome and own computation

Accordingly, in the above table 5.1 CA1 scored mean of 4.46 with standard deviation of 0.721; CM1 has a mean of 4.18 and standard deviation of 0.847 and MAT has a mean of 3.9 and standard deviation of 0.81 where as Col1 and Lint has mean of 3.74 and 3.48 and standard deviation of 1.015, and 1.058 respectively.

This implies that credit assessment has the highest score as compared to the other five bank specific determinants which indicates that it is the most important factor in describing NPL in Construction and Business Bank based on the believe of credit related staffs.

The next most important factor that has highest score as compared to the rest is credit monitoring that indicates there is high relationship between the occurrence of non-performing loans and credit follow up as per the opinion or assertion of the credit staffs on the statement described. Following the above two factors loan maturity, collateralized loans and lending interest rates to some extent also contribute to the occurrence of nonperforming loan.

5. 1.1 Credit Assessment and NPLs

The study hypothesized that there is a positive relationship between credit assessment and NPLs in CBB. This study showed that 98.4 percent respondents agreed that strong due diligence assessment decrease the tendency of loan to default or increase loan quality and 96.7 percent agreed that good credit assessment reduces loan default and this shows that credit assessment and NPL positively related.

Furthermore the study also indicated that Poor credit analysis contributes to the occurrences of NPL as 95.1% of respondents agreed on the statement in the survey conducted. These survey results have been supported in the literature.

Ning (2007) pointed out that poor risk assessment has an impact on the quality of loan.

Therefore; the survey result and the hypothesis (*H1*) are similar that there is a positive relationship between credit assessment and NPLs in construction and Business Bank.

5.1. 2. Monitoring and NPLs

The study hypothesized that there is a negative relationship between credit monitoring and NPLs. The survey results showed that 92.7% of the respondents agreed that tight monitoring of loans enhance its quality. It has been seen that less monitoring of borrowers lead to NPLs (Agresti et al, 2008). It has been seen that less monitoring of borrowers lead to NPLs. There are evidences in literature about poor monitoring, on the part of the banks, to be the main bank-specific factors behind creating NPLs. The previous studies also support this as Salas and Saurina (2002) are of the view that the loans are more secured if the banks keep a continuous check on the borrowers. The survey results also show that if a loan poorly assessed and it would have a tendency to minimize or avoid from default by adequate monitoring.

To conclude, the survey result indicate that credit monitoring directly affects the occurrence of NPLs and there is a negative relationship between credit monitoring and NPL which is similar with the study conducted abroad.

Therefore; the survey result and the hypothesis (*H3*) are similar that there is a negative relationship between credit monitoring and NPLs in construction and Business Bank.

5.1. 3. Lending Interest rate and NPLs

The study hypothesized that there is a positive relationship between lending interest rate and NPL in CBB. The survey does not indicate a very strong relation between interest and NPLs as only 57.4 % of respondents agree that if high interest rate is charged it can lead to loan default, which is not strongly affect NPL as compared to credit assessment and monitoring.

Various researchers have different findings about the relationship between interest and NPLs. Some researchers find a significant and positive relationship between interest and NPLs (Khemraj and Pasha 2009; Fofack 2005). Some studies have shown a weaker or insignificant relationship between NPLs and interest (Kaplin et al 2009). The result of the study match with the literature that supports a weak relation between interest and NPLs (Kaplin et al 2009).

Therefore; the survey result and the hypothesis (*H2*) are not similar that lending interest rate not always positively related with NPLs in Construction and Business Bank.

5.1.4. Loan Maturity and NPL

The study hypothesized that there is a positive/negative relationship between loan maturity and NPLs. The study showed that 79.2% respondents agreed that mostly loans having medium maturity period will have moderate tendency to default and 75.4 % of the respondents agreed that Loan maturity affects the tendency of loans to default. The survey study shows that there is a positive relationship between loan maturity and loan default for medium term loans which is similar to Jimenez and Saurina (2003).

The survey result shows that short maturity loans has no lower tendency to default and long maturity loans has no higher tendency to default i.e. short term

loans has no lower tendency to default and long term loans has no higher tendency to default which disagree the research made by Jimenez and Saurina (2003) and Kiran Jameel (2014).

Jimenez and Saurina (2003) empirical study shows that loan maturity structure had a positive effect on default, i.e., short-term loans of less than 1-year maturity had a significant positive effect on default. There is also evidence on loan maturity and NPL which was studied in Bangladish banks by Syeda Zabeen Ahmed (2006) shows that horizon of loan maturity has negative influence on non performing loans. Other study in pakistan by Kiran Jameel (2014) shows that maturity period of loan has a negative relationship with NPL ratio i.e. the lower the maturity period of loans leads towards high level of NPL ratio.

Therefore; the survey result and the hypothesis (H4) are similar that there is a positive/negative relationship between loan maturity and NPL in construction and business bank.

5.1.5. Collateralized loan and NPL

The study hypothesized that there is a positive/negative relationship between loan maturity and NPLs in CBB. The survey results indicated that quite majority (72.2 percent) of the respondents are of the view that collateralizing loans helps protect loan default while, on the other hand, a significant majority (63.4 percent) and (59 percent) of the survey respondents agreed that proper/careful collateral estimation decrease the tendency of loan default and collateralized loans perform well respectively.

Security is taken to mitigate the bank's risk in the event of default and is considered a secondary source of repayment (Koch & MacDonald, 2003). In the

banking environment, security is required among others, to ensure the full commitment of the borrower, to provide protection should the borrower default from the planned course of action outlined at the time credit is extended, and to provide insurance should the borrower default.

Therefore; the survey result and the hypothesis (H5) are similar that there is a negative relationship between collateralized loans and NPL in construction and business bank.

5.2. Summary of the regression result

From the finding on the adjusted R squared, the study found that was variation of 72.8% on the non-performing loans in CBB is due to and accounted for by changes in return on asset, loan growth rate and loan to deposit ratio.

From the finding the study found that holding return on asset, loan growth rate and loan to deposit ratio, to a constant zero, non-performing loans in CBB would stand at 1.307, a unit increase in ROA would lead to increase in non-performing loans by a factor of 0.97, unit increase in LGR would lead to decrease by a factor of 0.04, a unit increase in LDR would lead to increase in non-performing loans by a factor of 0.02. The study revealed that ROA had the greatest effect on non-performing loans in CBB, followed by LGR and LDR .The study revealed that independent variables had a significant strong and positive correlation with ROA but negatively correlated with LGR and LDR. The variable ROA, LGR and LDR have a positive relationship but not significant to NPL.

CHAPTER SIX

6. CONCLUSSION, RECOMMENDATION & FUTURE RESEARCH PERSPECTIVE

6.1. CONCLUSSION:

The study concludes that Nonperforming loans have associated with bank's specific indicators in CBB. In this study, primary data collected through questionnaire and described through descriptive statistics and secondary time series data are regressed by using multiple linear regression model from 2011 to 2015 using SPSS ver.20. From the views of respondents, the results show the following factors affecting the occurrence of Non-Performing Loans (NPLs) in CBB: The study has indicated that Strong due diligence assessment and Know Your customer (KYC) Policy of bank increase loan quality and Poor credit analysis contributes to the occurrences of NPL of the bank. Credit assessment and NPL are negatively related. The research also shows that strict monitoring of loans has an impact on NPLs and negatively related. The results also point out that if a loan is not properly assessed then it can turn into NPLs even if it is appropriately monitored. The study further explained that interest rate, loan maturity and collateralized loans have a weak relation with NPLs and not an important factor affecting NPL.

From the regression and correlation analysis the study found that the correlation provides that ROA has strong and positive relationship with NPL ratio but LDR and LGR has weak and negative relations with NPL ratio. Coefficient of determination is 72.8 %. It means that 72.8% changes in Non-performing Loans in CBB could be explained by changes in changes in return on asset, loan to

deposit ratio and loan growth rate of the bank. Same is the case for adjusted R-squared. It shows the overall goodness of fit for the model. The standard error of the estimate of 48.3% is showing that model used is of good statistical health. The study also found that 72.8% changes in Non-performing Loans in CBB could be explained by changes in return on asset, loan to deposit ratio and loan growth rate of the bank.

Thus the study concludes that credit assessment and credit monitoring (follow up) have negative and strong significant effect to the occurrence of NPL while interest, loan maturity and collateralized loans have less effect to the occurrence of NPL. However, return on asset, loan to deposit ratio and loan growth rate have positive relationship with NPL but have insignificant effect on the level of NPLs in Construction and Business Bank.

6.2. RECOMMENDATION:

From detailed analysis of the determining factors of NPL in CBB during the period 2011-2015GC the following recommendation are forwarded.

- ➤ Provide training and development to employees involved in credit operations to enhance the aptitudes and abilities of the credit staffs.
- ➤ Banks should have to have enough space for credit assessment as it shows the primary root and base for healthy loan.
- ➤ Banks should ensure adequate and continuous monitoring system.
- ➤ Bank should have such mechanisms that can ensure the verification of five C's before lending loans. These five C's include condition, collateral, capital, capacity and character.

➢ The Banks should have sound credit policies and procedures that govern bank loans and reduce the occurrence of NPL.

6.3. FUTURE RESEARCH PERSPECTIVE

The study limited only on the determinants of bank specific factors in CBB but further research needed to know the root-causes of the major determinants of NPL such as:

➢ Social factors like corruption practice

➢ Political interference

➢ Banker's inefficiency/incompetence is still needed to be explored.

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St. Mary's University

School of Graduate Studies

Masters in Business Administration (MBA)

Dear respondent,

Thank you very much for your willingness to take time to respond to this research questionnaire. The study is being conducted by a postgraduate student at St. Mary's University, MBA Program.

It is all about questions pertaining to **Bank specific determinants of Non-performing Loans** and related practices in Construction and Business bank.

To this end, it intends to gather information from pertinent bank employees involved in credit and related activities (i.e.; credit Relationship managers and officers, loan rehabilitation and recovery officers, credit Analyst etc).

The participation is fully on voluntary basis, and your accurate and frank responses are imperative for the successful accomplishment of the study.

Kindly, therefore, return the questionnaire upon completing each item appropriately.

Thank you in advance.

For any enquiry please contact me ;

Section One – General Information (Please tick √ in the appropriate boxes)

1. Your current position in the Bank.

1.1. Loan Officer ☐   1.2. Credit Relationship Manager ☐

1.3. Credit analyst ☐   1.4. Loan Recovery& Rehabilitation officer ☐

1.5. Internal Audit ☐   1.6. Vice president/Director ☐

Other, Please specify...

2. **Indicate your experience in the position you mentioned above.**

2.1. Less than 1 year ☐   2. 2.   1-5 years ☐

2.3. 6- 10 years ☐   2.4.   11-15 years ☐

2.5. Above 15 years ☐

3. Gender: Male ☐   Female ☐

4. Educational Level

4.1. 12th Grade complete ☐   4.4.Masters Degree ☐

4.2. Diploma ☐   4.5.PhD ☐

4.3. First Degree ☐

5. Would you say that determinants of nonperforming loans in CBB are obvious.

5.1. Agree ☐   5.**2.** Neutral ☐   5.3. Disagree ☐

Section Two – Questions on Determinants of Non-performing loans.

1. Which bank specific factors do you think are causing the occurrences of NPLs in Construction and Business bank most?.You can choose more than one.

A).Credit Assessment

B).Lending interest rate

C).Credit growth

D).Credit Monitoring

E).Loan maturity period

F).Collateralized loans

G).If there are other determinants that affect non performing loans please list down:

    ....
    ....
    ....
    ....

2. Please indicate your degree of agreement or disagreement to the statement pertaining to **credit assessment** and the occurrence of NPLs**.**

No.	Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
2.1	Strong due diligence assessment decrease the tendency of loan to default/increase loan quality					
2.2	Sharing credit information reduces occurrence on loan default.					
2.3	Know Your customer (KYC) Policy of bank lead to high Loan quality					
2.4	Poor credit analysis contributes to the occurrences of NPL.					
2.5	Good loan underwriting ensures loan performance					
2.6	Good credit assessment reduces loan default					

3. Please indicate your degree of agreement or disagreement to the statement pertaining to **lending interest rate** and the occurrence of NPLs**.**

No.	Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
3.1	Loans having big interest have more chances to turn to NPL.					
3.2	If high interest rates are charged it can lead to loan default.					
3.3	Interest charged on loan affects the performance of loans.					
3.4	As compared to other private banks CBB offer lower lending interest rate.					

4. Please indicate your degree of agreement or disagreement to the statement pertaining to **credit monitoring (follow up)** and the occurrence of NPLs**.**

No.	Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
4.1	In my bank(CBB), Poor Loan follow-up would leads to occurrence of nonperforming loans.					
4.2	Strict credit monitoring in the bank would ensure loan performance.					
4.3	Properly monitoring of a weak loan or advance can decrease the chances of its default.					
4.4	Loan follow up is directly related with the occurrence of NPLs .					
4.5	If the bank's CRM and CRO spends more on credit monitoring, it can lower the level of NPLs.					

III

5. Please indicate your degree of agreement or disagreement to the statement pertaining to **loan maturity** and the occurrence of NPLs**.**

No	Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
5.1	Loan maturity affects the tendency of loans to default.					
5.2	Mostly loans having long maturity period will have higher tendency to default.					
5.2	Mostly loans having medium maturity period will have moderate tendency to default.					
5.3	Mostly loans having short maturity period loans will have lower tendency to default.					

6. Please indicate your degree of agreement or disagreement to the statement pertaining to   **collateralized loans** and the occurrence of NPLs**.**

No	Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
6.1	Collateralized loans perform well					
6.2	Securing loan by collateral minimize loan default					
6.3	Most of the time non collateralized loans are defaulted					
6.4	Proper/careful collateral estimation decrease the tendency of loan default.					

7. If you have further comments on the bank specific factors affecting NPLs in Construction and Business Bank, please write some details in the space provided below:

....
....
....
....
....
....
....
....
....
....

Thank you once again for your participation.

Appendix.2.Raw data

in.(000,000)

Particulars	2010	2011	2012	2013	2014	2015
			Year			
Deposit	2,354.50	2,509.11	3,521.84	4,099.10	5,077.64	5,401.31
Equity	320.2	363	479	665.3	731.2	804.32
Outstanding loans and advances	1,748.30	1,727.80	2,059.00	2,410.50	3,201.30	3,947.90
Total Asset	3,165.20	3,491.65	6,037.09	7,804.90	7,897.86	7,320.04
Profit before tax	132	124.45	160.01	156.4	129.32	46.18
Profit after tax	92.4	87.11	112	109.5	90.52	32.32

Appendix.3   **Correlation Matrix**

	NPL	LDR	ROA	LGR
NPL	1			
LDR	-0.318	1		
ROA	0.965	-0.3	1	
LGR	-0.066	-0.736	-0.108	1

Appendix .4   **Collinearity Test**

Collinearity Statistics	
Tolerance	VIF
.312	3.206
.674	1.485
.339	2.952

V