DETERMINANT OF NON PERFORMING LOAN IN ETHIOPIAN PRIVATE COMMERCIAL BANKS: WITH EMPHASIS ON MANUFACTURING SECTOR

A THESIS SUBMITTED TO
THE DEPARTMENT OF ACCOUNTING AND FINANCE

FOR PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE
(MSC) IN ACCOUNTING AND FINANCE

January, 2017

BY; Mesay Tamiru

ACCONTING AND FINANCE DEPARTMENT

COLLEGE OF BUSINESS AND ECONOMICS

ADDIS ABABA UNIVERSITY

DECLARATION

I hereby declare that the work which is being presented in this project paper entitled "**Determinant of non-Performing Loan in Ethiopian Private Commercial banks, with Emphasize of Manufacturing Sector**" is my original work, has not been presented for a degree in any other university and The work is original in nature and is suitable for submission for the reward of the M.Sc Degree in Accounting and Finance.

_____	_____
Mesay Tamiru	**Date**
_____	_____
Habtamu Birhanu (Phd)	**Date**
(Advisor)	
Approved by Board of Examiners:	**Signature**
Dr.	_____
Internal Examiner	
Dr.	_____
External Examiner	

Acknowledgements

First and for most I would like to thank the Almighty God who gave me power and patience in every endeavor of my life. Next, I would like to extend my deeper indebtedness to my advisor, Habtamu (PhD) for his invaluable comments, encouragements and guidance at various stage of the study.

Next I am thankful to Addis Ababa University for their help provided to me during my thesis work through the Department of Accounting and Finance. My special gratitude also extended to the management and staff members of the all Ethiopian private Commercial Banks, the National Bank of Ethiopia and the Ministry of Finance & Economic Development for their cooperation in providing me all the necessary data required for the study. Finally, I would also like to express my sincere thanks to all designated parties who help me for my thesis work in every circumstance.

Abstract

The main goal of Ethiopian private commercial banks (EPCB) is to operate profitably in order to maintain its stability and improve growth and sustainability. However, EPCBs experience high levels of non-performing loans. This trend threatens viability and sustainability of banks and hinders the achievement of their goals. This study was aimed at assessing the determinants of non-performing loan growth rate. Specifically the study sought to establish the effect of microeconomic variables (deposit Interest rate, exchange rate and annual inflation rate), bank specific (loan to deposit ratio, credit monitoring and follow-up and loan growth rate) and business characteristic (business profit margin and nature of business). The study was used both primary and secondary data. The study target population comprises six Ethiopian private commercial banks and 12 manufacturing sub sectors (food and beverage and textile). 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 six private commercial banks in Ethiopia and relevant data on macroeconomic factors considered for the period from the year 2000 to 2015. The sampling of the study includes six private commercial banks, from 16 private commercial banks based on their share of total outstanding loan. The collected panel data is analyzed using descriptive statics, correlation matrix and multiple linear regression analysis. The findings of the study show that business profit margin, deposit interest rate, loan growth rate, loan to deposit ratio, credit monitoring and follow-up and nature of business statistically significant relationship with banks' NPLs. On the other hand, variables like exchange rate and inflation rate were found to be statistically insignificant. Base on the finding the study recommended that Loan growth, business profit margin, loan to deposit ratio and deposit interest rate were significant driver of NPLs, hence focusing and engendering the institution alongside these indicators could reduce the probability of NPL in Ethiopian private commercial banks.

TABLE OF CONTENTS

List of table

List of Figures

Abbreviations

AACCSA	Addis Ababa Chamber of Commerce and Sectoral Association
AIB	Awash International Bank
BOA	Bank of Abyssinia
BUPM	Business profit Margin
CLRM	Classical Linear Regression Model
CSA	Central statistical agency
DIR	deposit interest rate
EXR	Exchange Rate
EPCBs:	Ethiopian private commercial bank
GVP	Gross Value of Production
IDSP	Industrial Development Strategic Plan
IMF	International Monetary Fund
INFR	Inflation rate
LDR	Loan Deposit Ratio
LGR	Loan Growth Rate
NBE	National Bank of Ethiopia
NIB	Nib International Bank
NPLs	Non Performing Loan
OLS	Ordinary Least Square

UB	United Bank
WB	Wegagen Bank

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Ethiopia has experienced strong economic growth in recent years, with real GDP growth at or near double digit levels since 2003/04, the country has consistently outperformed in economic growth. Real GDP growth averaged 11.2% per annum during the 2003/04 and 2014/15 period, placing Ethiopia among the top performing economies in Sub-Sahara Africa, (Industrial Development Strategic Plan (IDSP), 2013 - 2015). This growth performance is well in excess of the population growth rate and the 7 percent rate required for attaining the goal of halving poverty on 2020. Yet, a number of issues warrant the attention of policy makers.

Yet from number of issues warrant the attention of Ethiopia‟s policy makers, the manufacturing sector had been the key productive sectors of the economy identified under GTP I (2010-2015) which can spur economic growth and development because of its immense potential for wealth creation, employment generation and poverty alleviation. The manufacturing sector makes an important contribution to the Ethiopian economy and employs about 190 thousand people in the year 2014/2015 (AACCSA, 2015).

Total value of fixed capital assets in Ethiopian manufacturing sector estimated to reach 40 billion birr in 2014/2015 and the new investment in fixed capital for the same fiscal year worth around 5.7 billion and investment in food and beverage industries have the highest (2.6 billion birr) ratio in the industries and it is followed by textiles. Domestic banks were major sources of finance for most projects in Ethiopian manufacturing industries. The survey result of (AACCSA, 2015) revealed that out of the total 270 manufacturers about 62% of them reported that domestic banks are their main financier.

Banks play a very important role in manufacturing industries and for the overall economic development of every nation. They have control over a large part of the supply of money circulation and stimulus for the economic progress of a country. The financial sectors contribution to growth lies in the central role, they play in mobilizing savings and allocating the resources efficiently to the most productive uses and investments in the real sector (Joseph Et al, 2004).

It is also generally known that financial institutions play a crucial role of financial intermediaries between lenders and borrowers. The role of intermediaries eases the flow of credit in the economy and additionally boosts the productivity by revitalizing the investment (Farhan, Sattar, Chaudhry and Khalil, 2012).The increase in production implies economic growth and economic growth will not take place in the absence of a sound financial sector. Therefore, good performance exhibited by the financial institutions symbolizes good prospects of economic growth (Khan et al, 2011).

The traditional role of a bank is lending and loans make up the bulk of their assets (Njanike, 2009). According to the research by (Havrilesky and Boorman, 1994), interest on loans contributes significantly to interest income of commercial banks. (Reed and Gill, 1989) pointed out that traditionally 85 percent of commercial banks‟ income is contributed by interest on loans. Loans therefore represent the majority of a bank‟s asserts (Saunders and Cornett, 2005). Lending is not an easy task for banks because it creates a big problem which is called non performing loans (Chhimpa J, 2002) as cited in (Upal, 2009). Due to the nature of their business, private commercial banks expose themselves to the risks of default from borrowers.

Nevertheless, Ethiopian private commercial banks (EPCBs) were also suffered from serious financial fragility manifested by high proportion of NPLs (Mehari, 2012). Recently, the NPLs of EPCBs have shown a substantial improvement and lowered to an average of 5 % (National Bank of Ethiopia 2011). However, NPLs of EPCBs are still high as compared to the developing economy banks like, Namibia, Mozambique and Uganda (Fofack, 2013). Hence, EPCBs are still expected to reduce their NPLs as low as possible in order to achieve their optimal profit and ultimately improve the soundness of the financial system.

In light of the above points, limited empirical work has been done on this problem and specifically as per the researcher knowledge there is a limited paper that work in private banks non performing loan, also any paper is not analyze the manufacturing sector loan repayment performance separately, beside to this the general objective of the study is to examine the determinants of nonperforming loan (NPLs) in Ethiopia private commercial banks, specifically the macroeconomic factor, bank specific factors and the borrower specific factors that determine the performance of loan repayment in manufacturing production sector.

1.2. Background of the Study Area

1.2.1. Overview of Banking Industry in Ethiopia

The history of modern banking in Ethiopia started in 1905 with the establishment of Abysinian Bank.Later, in 1931, the Bank of Abyssinia was replaced by Bank of Ethiopia. As described by Thitina (2009), the Bank of Ethiopia was in operation for a few years until 1935 and ceased to function because of the Italian invasion. However, during the period of the Italian occupation (1936-41), Italian Banks were operational in the main towns of Ethiopia. After the evacuation of Italians, the State Bank of Ethiopia was established on November 30, 1943.

In 1974 due to change of government and the declaration of socialism as the guiding ideology the government nationalizes all private banks and commercial bank of Ethiopia by proclamation no .184 of August 2, 1980 to form commercial banks in the country till the establishment of private commercial banks in 1995. The first private commercial Bank, Addis Ababa Bank was established in 1964 (Habtamu, 2011). In 1975, The Monetary and Banking proclamation No.83/1994 and the Licensing and Supervision of Banking Business proclamation No.84/1994 had allowed the establishment of private commercial banks.

Following the proclamation of private bank establishment the first private commercial bank Awash international bank (AIB) establish 1994 GC and the rest five banks covered in the study established consequently up to 1997 GC. According to annual report of National Banks of Ethiopia, the total numbers of commercial banks reached 19, but there is still huge unbanked population in the country (www.nbe.et).

1.2.2. Overview of Manufacturing Industry in Ethiopia

As per the country growth strategies the manufacturing industry sector is one of a target focus area in order to attain the objective, the manufacturing sector Gross value of production worth about 130 billion birr in 2014/2015; and value added generated is estimated to reach 41 billion birr in the same year, which was about 4% of the value addition to the entire economy in the same year. The largest value addition was come from the food and beverage subsector, according to table 1.1 which was around 40.8 billion birr in 2014/2015, followed by textile (32.1 billion birr) and leather and leather products industry (24.7 Billion birr), (AACCSA, 2015). Besides this due to the impact of each sub sector on GDP food and beverage and textile record the first and the second high percentage than other sub sector, so to limit the scope of the study the researcher only focus on the two sub sector related data (i.e. food and beverage and textile).

On the another side, when we observe other country manufacturing production and non performing loan attachment, The study conducted by Nguta, and Guya (2013) in Kenya showed that one of the causes of loan default is the characteristic of the business. According to table 1.3, high cases of default of loan repayment were common (26% average of all six bank) in the manufacturing sector. This was followed by the building and construction industry (23%) then by the agriculture (18%). In line with this the study is initiated to discuss the sector that records the highest NPL, which is manufacturing sector (NBE annual report and EPCBs data).

Table :1.1 Summary of All Manufacturing Sector Contribution to GDP

Manufacturing Sub Sectors	Coverage from Total Manufacturing sector to GDP	Total Contribution to the Country GDP per year
food and beverage products industry	36%	40.8 Billion birr
Textiles	25%	32.1Billion birr
leather and leather products industry	19%	24.7 Billion birr
metal and engineering products industry	9%	11.7 Billion birr
Other	11%	14.3 Billion birr
TOTAL	100%	130 Billion birr

Source: AACCSA, 2014

1.2.2.1. Sources of Finance for the Manufacturing Sector

Total value of fixed capital assets in Ethiopian manufacturing sector estimated to reach 40 billion birr in 2014/2015 and the new investment in fixed capital for the same fiscal year worth around 5.7 billion and investment in food and beverage industries was the highest (2.6 billion birr). Beside to this domestic banks were major sources of finance for most projects in Ethiopian manufacturing industries. The survey result of Addis Ababa Chamber of Commerce and Sectoral Association (AACCSA) discussed in table 1.2 revealed that out of the total 270 manufacturers about 62% of them reported that domestic banks are their main financier specifically the sub sector discussed in this study, the highest source of finance of food and beverage and textile is domestic banks at 60% and 55% respectively.

Table :1.2 Summary of All Manufacturing Sector source of Finance

Source of finance	Food and beverage	Textiles
Domestic bank	60%	55%
Domestic capital market	4.9%	-
Foreign investment/partner	9.8%	23%
Savings	18%	12%
Other source	6.6%	10%

Source: AACCSA, 2014

1.2.2.2. Ethiopian Manufacturing Sector Current Status

The Ethiopian government has initiated a new push towards creating framework to ensure economic and social development. The International Monetary Fund (IMF) ranks Ethiopia as among the five fastest growing economies in the world. After a decade of continuous expansion (during which real GDP growth averaged 11.5% per annum), in 2014/15 the economy grew for it‟s the consecutive year posting 10.3% growth (IMF 2013/14 report).

Ethiopia‟s economy is based on agriculture, which accounts 40.2 % of GDP, 60 % of the export earning, and 80 % of total employment. The industrial sector accounts 14.3% of GDP, 9.5 % of total employment, and 21.2 % of export earnings. While the service sector accounts for 46.2% of GDP Ethiopian manufacturing sector contribute for export, employment and national output. The sector accounts for 70% of the industrial sector. Within the manufacturing sector, the agro-processing subsector (food and beverage subsector here in after) is the largest subsector, accounting for 36% of the total gross value of production (GVP) and 38% of the value added on large and medium scale manufacturing industry (CSA, 2014).

1.2.2.3. Investment Incentives in Manufacturing sector

Despite due focus given to the large, medium, and small scale manufacturing industries in government development plan, the performance registered so far is unsatisfactory suggesting that the dire need for examining the sector‟s growth constraining factors that hamper it from playing a leading role. Towards this end, the economic policy of the country obliged the EPCBs to give a priority regarding foreign exchange, loan disbursement and other banking service to the sector. According to GTP (2010-1015) food and beverage and textile Products Industry cover the most share of the manufacturing industry in Ethiopia, regarding the value added to GDP and the total capital in the industry.

- **Food and Beverage Products Industry**

The food and beverages sector is one of the main components of Ethiopia‟s manufacturing sector. The first round GTP (2010-1015) ranked agro processing industries among top priority industries. Gross value of production in this subsector was almost 40.8 billion Birr in 2014/2015 while value added generated amounts of Birr 10.2 billion, equivalent to 1.2% of the entire GDP in the same year.

Annual wage and salary expenditure worth 1.9 billion Birr. Funds to finance all these establishment costs come from different sources. According to, this sub-sector relies highly on domestic banks long term and short term loan to meet its financial resource demand. The survey result indicates that 60.7% of the companies use domestic banks as the main source of finance.

- **Textiles and Apparel Products Industry**

According to table 1.1 textile and apparel have the second sub sector that have more coverage in the manufacturing industry Textile and apparel subsector is among the priority subsector identified by the Ethiopian government in transforming the country‟s traditional agricultural based economy to industrialization. The gross value of production of textiles and apparel industry in 2014/15 was around 15.4 billion birr out of these firms owned by the private produce

8.2 billion birr and the government firms produce 16.61 million birr. The value added of the industry in 2014/15 was 32.1 million birr (GTP (2010-1015)).

Total value of fixed capital assets of textiles products and wearing apparel industry was around 5 billion Birr and the new investment in fixed capital for the 2014/2015 fiscal year worth around 148 million Birr. In the same year, annual wage and salary expenditure reached around 2.8 billion Birr. Formal local financial institutions, is the major sources of finance for the industry (AACCSA, 2014).

1.3. Statement of the Problem

Our country Ethiopia is characterized by under utilization of land capital and abundant manpower resources. Beside to this finance is a major mobilize of the resource and the man power. However, there is scarcity of capital, lack of investment opportunity and unemployment. Considering this fact, Ethiopian private commercial banks provide credit for establishment and expansion of manufacturing production, agricultural, industrial and other services with the objective of economic development in the country. In line with the above point, the loan extended to various sectors of the economy must be recovered in full, if the objective of circulating more and more financial resources to meet the increase demands for credit and to keep the bank in sound financial health (Boudriga, 2009).

Loan portfolio constitutes the largest operating assets and source of revenue of most financial institutions. However, some of the loans given out become non-performing and adversely affect the profitability and overall financial performance of the lending institutions. This situation will paralyze the investment program as well as the economy as a whole. Non-performing loans are one of the determinant factors for the soundness of the banking sector.

At the same time nonperforming loan rate is the most important issue for banks to survive. The issue of non-performing loan has, therefore, gained increasing attentions since the immediate consequence of large amount of NPLs in the banking system is a cause of bank failure. It is accepted that the quantity or percentage of non-performing loan (NPLs) is often associated with

bank failures and financial crises in both developing and developed countries (Caprio and Klingebiel, 2002 cited in Wanjau K et al., 2011).

As per council of ministers regulation No. 270/2012, In our country Ethiopia country economic policy context manufacturing production is one the major sector which obtain different incentive from the country economic policy, the manufacturing production sector receive greater ratio to get loan from EPCBs. However, according to the annual loan performance report of private commercial banks, manufacturing sector is lead way regarding NPLs.

According to table 1.3, among different loan type sub sector manufacturing sector is gone be a lead the way of NPL form 2000-2015 Hence, the objective of this paper is to identify and analyze the factors influencing effective loan repayment behavior in the financial institutions that determine successful loan repayment performance of borrowers in manufacturing production sector specifically in food and beverage and Textiles and Apparel Products Industry from three broad perspectives. These are; the effect of micro economic variable, specific impact of the bank and the sector or borrower characteristic.

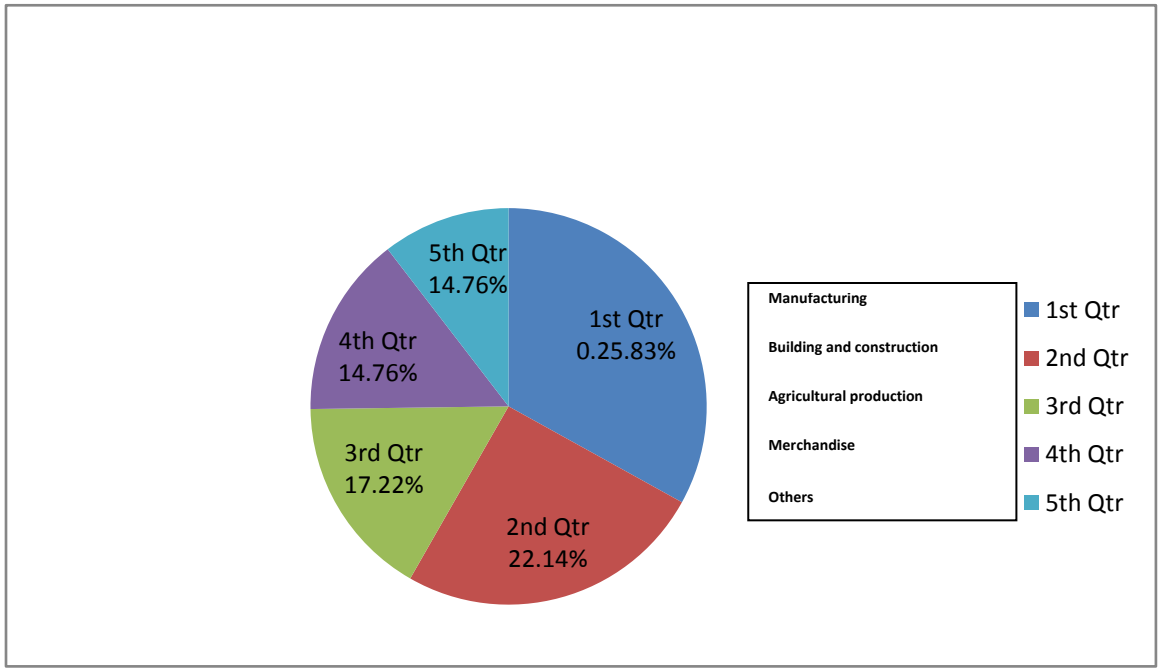


Table: 1.3 Summary of All Banks Loans and Advances and NPL in all type of loan (in millions of birr) from 2000-2015

S.NO	Name of banks	Type of loan	Average loan granted	Non performed loan	NPL %
1	Awash International Bank	Agricultural production term loan	13,048	1565.76	0.12
		Manufacturing production	18,719	3930.99	0.21
		Building & construction term loans	15,316	2910.04	0.19
		Merchandise	6,241	748.92	0.12
		Others	3,405	374.55	0.11
2	Dashen Bank	Agricultural production term loan	16,682	2168.66	0.13
		Manufacturing production	23,934	5504.82	0.23
		Building & construction term loans	19,582	4112.22	0.21
		Merchandise	7980	1436.4	0.18
		Others	4348	565.24	0.13
3	Bank of Abyssinia	Agricultural production term loan	9582	1533.12	0.16
		Manufacturing production	13,746	3024.12	0.22
		Building & construction term loans	11,247	2474.34	0.22
		Merchandise	4584	687.6	0.15
		Others	2491	274.01	0.11
4	Wegagen Bank	Agricultural production term loan	8631	1380.96	0.16
		Manufacturing production	12,382	2476.4	0.2
		Building & construction term loans	10,130	1620.8	0.16
		Merchandise	4129	536.77	0.13
		Others	2245	246.95	0.11
5	United Bank	Agricultural production term loan	8288	911.68	0.11
		Manufacturing production	11,891	2259.29	0.19
		Building & construction term loans	9729	1264.77	0.13
		Merchandise	3966	515.58	0.13
		Others	2171	303.94	0.14
6	Nib International Bank	Agricultural production term loan	8832	1501.44	0.17
		Manufacturing production	12,670	2660.7	0.21
		Building & construction term loans	10,367	2177.07	0.21
		Merchandise	4225	760.5	0.18
		Others	2304	276.48	0.12
	Total		**282,865**	**14,840**	

Source: MIS of private Commercial Banks, NBE reports (2015) and an own computation

1.4. Objective of the Study

General Objective

The general/overall objective of the study is to find out the causes of non-performing loans in Ethiopian private commercial banks with special reference emphasis on manufacturing sector and to examine the relationship between these factors with the growth rate of banks NPLs.

Specific Objective

Moreover the study aims to achieve the following specific objective;

i. To examine the impact of borrowers specific factors such as; which are business profit margin and nature/characteristic of the business on the growth of NPLs.

ii. To analyze the impact of the bank specific variables, like credit monitoring and follow-up, loan growth and loan to deposit ratio on growth of NPLs determinants on Ethiopian private commercial banks;

iii. To examine the impact of macroeconomic variables such as; inflation rate, deposit interest rate, foreign exchange rate, on the growth of NPLs;

1.5. Research Question and Hypothesis

1.5.1 Research Question

1. What are the major determinants of banks‟ non-performing loans in Ethiopia private commercial banking sector specifically the manufacturing production sector?

2. Which variables are more important in determining the loan repayment performance, among the microeconomic variables, bank specific variable and borrower specific characteristic?

1.5.2. Research Hypothesis

The hypotheses of this study were formulated by referring to the existing theories and past empirical studies that have been conducted on the determinants of banks loan repayment performance. However, from the review of empirical literature, the researcher perceived as there is no consistency in the results for the determinants of nonperforming loans, beside to this the study formulated the following hypotheses.

H1.There is a positive relationship between deposit interest rate and NPLs.
H2.There is a positive relationship between inflation rate and NPLs.
H3.There is a positive relationship between foreign exchange rate and NPLs
H4.There is a positive relationship between nature of the business and NPLs.
H5.There is a Negative relationship between business profit margin and NPLs
H6.There is a positive relationship between loans to deposit ratio and NPLs.
H7. There is a positive relationship between loan growth rate of banks and NPLs.
H8. Credit monitoring and follow-up has negative relation with NPLs.

1.6. Scope of the Study

This thesis is adjusted to fit its objectives of examining the determinants of NPLs of private commercial banks in Ethiopia within the limits of specified time. The research decided to limit this study to the private commercial banks found in Ethiopia namely Awash international bank, bank of Abyssinia, Wegagen bank, United bank, Nib International bank and Dashen bank that were registered by NBE before 2000/01. These banks were selected since they are senior banks and are expected to have more experience on the lending activities. According to table 1.4 the percentage of these sex private bank constitute 84% out of the total loan granted by 16 private commercial banks to manufacturing sector within the study period (2000-2015). Yet, this study covers a panel data of these banks over the period 2000 to 2015 of the six private banks and regressed by linear regression model. Hence, this study is limited to bank specific (LDR, LGR and credit monitoring and follow-up), macroeconomic determinant (EXR, INFR and DIR) and borrower specific characteristics (BUPM and business characteristic) specifically the manufacturing production sector of NPLs in private Commercial banks in Ethiopia between the above mentioned periods.

Table 1.4 list of disbursed loan to Mag. From all private banks loan (in millions of birr) from 2000-2015

Private banks	Year of Est.	Loan disbursed by Private commercial bank in Each Year																Total loan disburse to mfg sector	% Each Banks from total
		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015		
AIB	**1994**	153	178	253	297	308	425	617	828	905	895	1,038	1,315	1,816	2,544	3,028	4,119	**18,719**	**16.87**
DB	**1995**	180	258	322	395	527	736	1,044	1,316	1,446	1,469	1,666	2,051	2,680	2,924	3,111	3,803	**23,928**	**21.57**
BOA	**1996**	212	266	297	326	414	407	648	761	930	894	1041	1094	1286	1552	1670	1949	**13,747**	**12.39**
WB	**1999**	198	231	266	297	326	331	526	711	774	697	816	960	1177	1548	1519	2004	**12,381**	**11.16**
UB	**1998**	116	129	164	165	217	196	331	465	614	710	862	1081	1348	1555	1673	2264	**11,890**	**10.72**
NB	**1999**	164	196	253	318	313	374	487	600	698	733	840	913	1224	1499	1785	2275	**12,672**	**11.42**
LIB	**2006**								7	38	47	78	92	129	172	305	263	**1130**	**1.02**
CBO	**2004**						1	42	79	107	197	238	265	456	698	1202	2167	**5451**	**4.91**
ZB	**2009**										62	127	213	334	452	472	712	**2371**	**2.14**
OIB	**2009**										37	122	218	336	535	835	1553	**3637**	**3.28**
BUIB	**2010**												4	79	151	201	342	**776.9**	**0.70**
BRIB	**2010**											51	109	165	323	391	619	**1658**	**1.49**
AB	**2011**												52	149	278	487	763	**1729**	**1.56**
ADIB	**2011**													51	108	169	252	**579**	**0.52**
DGB	**2012**														33	88	111	**231**	**0.21**
EB	**2013**															10	24	**33**	**0.03**
TOTAL LOAN																		**129,652**	

Source: MIS of private Commercial Banks, NBE reports (2015) and an own computation

1.7. Significance of the Study

The finding of this study which details with the determinants of nonperforming loan of private commercial bank in Ethiopia it will have beneficial for different stakeholders such as;

- The finding of this study might be used as policy input in developing regulatory standards regarding the lending policies of private commercial banks of Ethiopia.
- Furthermore, the outcomes of the study may minimize the literature gap in the area of study particularly in Ethiopia.
- The outcome of this project would enable private commercial bank adopt workable strategies to control the problem of a growing non-performing loan portfolio in the institution and thereby improve its financial performance and profitability.
- The study might serve as a source of reference for other related research works in the future.

1.8. Organization of Research Report

The research paper is organized according to the following chapters. The first chapter starts with presenting background of the study, statement of the problem, objective of the study, significance of the study, scope and limitation of the study. Chapter two shows both theoretical and empirical literature review conducted on relevant studies. Chapter three describes the research methodology that used for this study. Chapter four discuss the finding of the study, finally followed by chapter five conclusions and recommendation based on the findings.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2. Introduction

This chapter reviews the existing literatures related to the research problem, different people at different country assess the problem of nonperforming loan impact on the performance of banks, more over on the overall economy. Beside to this the outers are views that Non-Performing Loans are a big threat not only for a single country but for the whole world as it has been witnessed in case of US financial crisis in recent times. Therefore, it is necessary for the economy for any country that factors of Non-Performing Loans are identified.

It is quite natural that banks try to lend in safe ventures at one hand and to increase the profitability on the other. Therefore, the banks must be extremely vigilant when it comes to giving loans at a riskier avenue. The study of Ayalew (2009) indicates that the borrowers, even in a developed country, wish to be stated as defaulters. The reason for this is the financial crisis all across the globe adversely affects the capacity of borrowers to repay their loans. In this way the borrowers find a legal way of not returning their debts, thus may increasing the amount of Non-Performing Loans. NPLs are realized, as an important factor, being responsible for this financial crisis.

The purpose of this chapter is also to review the existing literatures concerning on the area of NPLs and factor that affect the level of NPLs i.e. internal (bank specific), external (macroeconomic) factor in the banking industry and the impact of borrower characteristics in manufacturing sector. At last the chapter presents knowledge gap that inspire this study.

2.1. Theoretical Review of Non-Performing Loans

2.1.1. Definition Non-performing Loans

There is no specific definition of NPLs to be found in literature. Previous studies have defined NPLs according to their needs. As per Basel committee (2001) NPLs are defined as loans which are not paid and their overdue time period is 90 days after maturity date. NPLs are also explained as ,“Loans or advances whom credit quality has deteriorated such that full collection of

principal and interest in accordance with the loan or advances in repayment terms of the loan or advances in question" (National Bank of Ethiopia). According to Obamuyi (2007) a loan is considered to be as non-performing loan (NPL) if its principal and markup is not being paid by the borrower in accordance with the agreed terms and conditions of loan payment.

Non-performing assets are a very sensitive element of a bank"s operations. Non- performing loan assets are also a leading indicator of credit quality (Machiraju, 2003). Studies previously discussed indicated that loans and advances have constituted the primary source of income for the banks. Like any business establishment, a bank also seeks to maximize its profit. As loans and advances are more profitable than any other assets, a bank is willing to lend as much of its funds as possible.

It is widely accepted that the magnitude of non-performing loans and advances is often associated with bank failures and financial crises in both developing and developed countries. Historically, the occurrence of banking crises has often been associated with a massive accumulation of non-performing assets which can account for a sizable share of total assets of insolvent banks and financial institutions. Indeed, there is abundant evidence that the financial/banking crises in East Asia and Sub-Saharan African countries were preceded by high non-performing loans and advances. The previous global financial crisis, which originated in the US, was also attributed to the rapid default of sub-prime loans/mortgages. In view of this reality it is therefore understandable why much emphasis is placed on non-performing loans and advances when examining financial vulnerabilities (Sorge, 2004).

2.1.2. Nonperforming loan and its Classification in Ethiopia

Under the Ethiopian banking business directive, Banking Business Proclamation No. 592/2008 non-performing loan assets 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 loans or advances is in question" (NBE, 2008). The directive

under article 7 and 8 further classified non-performing loan and advances to three categories based on aging criteria.

1. Substandard; Non-performing loans and advances at a minimum are classified as substandard when loans or advances with pre-established repayment programs past due 90 days or more, but less than 180 days.

2. Doubtful; The directive determines that non-performing loans and advances are classified as doubtful when loans or advances with pre-established repayment programs past due 180 days or more, but less than 360 days.

3. Loss Non-performing loans and advances shall be classified as loss status when non-performing loans or advances with pre-established repayment programs past due 360 days or more.

The Ethiopian Banking Business directive requires all banks to maintain a provision against expected bad and doubtful loans. Article 8 of directive number SBB/43/2008 states that: All banks shall maintain a provision for loan losses account which shall be created by charges to provision expense in the income statement and shall be maintained at a level adequate to absorb potential loss in the loans or advanced portfolio. In determining the adequacy of the provisions for loan loss account, provisions may be attributed to individual loans or advances or groups of loans and advances.

2.1.3. Laws relating to Control of Non- Performing Loans in Ethiopia

In order to create a climate of confidence conducive to private sector business activities, appropriate laws that provide the necessary environment are necessary. Current theories on which economic development policies are based, as well as the guidelines of international financial institutions that provide technical assistance to developing countries are pursuing free market economic policies, emphasize the critical importance of having a modern commercial law infrastructure. The legal infrastructure should enable the developing or

transitioning economy to have in place properly functioning credit and other financial systems that stimulate domestic and foreign investment.

NBE‟s surveillance mechanisms require banks to submit key financial data such as the composition of lending and the scale of non- performing loans on a regular basis, in order to identify all the risks to which each bank is exposed. Commercial banks are legally required to make 100 percent provision against "bad" loans (those with no collateral) and 50 percent provision of "doubtful" (those for which repayment is more than one year late, and for which there is no adequate security).

The National Bank of Ethiopia also is given a power under Article 22 of the proclamation to issue directives concerning the conditions and limitations on investments of banks and a loan, advance or other credit facility, financial guarantee or any other commitments or contracts given by a bank, directly and indirectly to a person. The NBE issued directives on loan provision requirements and the responsibility of the banks to maintain their capital adequacy. This helps the banks not to make any decision which results in financial distress.

2.2. The Role of Banks in Supporting Manufacturing Sector

The role of bank is financial intermediation by mobilizing savings, managing bank business risk management, evaluation of projects before financing, financing and monitoring the business, and facilitating transactions, allocation of available resources for capital formation that helps technological improvement and growth of nation. (American Bankers Association, 2014) The manufacturing sector also requires financial assistance of banks for expansion of existing business, acquisitions and investment on new projects. The contemporary manufacturing sectors involve in high standards of quality production, innovation and require computer supported machinery and continuous expansion to satisfy demand that needs intermediation of bank as it involves high initial capital investment. (http://www.lloydsbank.com).

According to table 2.1, it discusses the total outstanding loan and the percentage of the manufacturing loan from the total outstanding loan in private and state banks as a whole. The table also discusses the coverage of private and governmental banks from the total loan, yet as

shown from the table private banks share from the total outstanding loan is vary among the study period (2000-2015) the private banks enrolment in the period 2000 to 2015 fluctuates in different times. It is maximum 48% up to minimum 31%, The private commercial banks role in supporting manufacturing sector is increasing from time to time. In 2000 the credit financing was 16,269.96 million birr and later reached birr 185,879.81 Million in the year 2015 which showed significant increment within 16 years‟ time.

This proves that private commercial bank‟s involvement in financing the manufacturing is growing immensely in recent periods. After the bank targeted its credit financing towards priority sector; its allocation of fund for manufacturing sector has increased aggressively and as per table 2.1, its share from banking industry for manufacturing sector has reached 40% in 2015.

Table 2.1. Summary of All Banks Loans and Advances, Credit Financed for Manufacturing Sector (in millions of birr)

Year	Total loan& advance granted	Loan granted for Mfg*	% of loan growth for Mfg	share of loan for Mfg	Private bank to mfg (6)	Private bank % on mfg
2000	17,464.90	2,987.34		0.17	1194.936	35%
2001	22,989.89	3,167.88	0.06	0.14	1267.152	37%
2002	25,784.36	3,546.80	0.11	0.14	1418.72	41%
2003	29,684.89	5,675.90	0.38	0.19	2270.36	39%
2004	31,597.60	4,207.60	-0.35	0.13	1683.04	38%
2005	29,106.50	5,135.60	0.18	0.18	2054.24	48%
2006	39,631.20	6,320.10	0.19	0.16	2528.04	42%
2007	44,317.50	6,996.50	0.10	0.16	2798.6	49%
2008	48,241.80	7,897.00	0.11	0.16	3158.8	40%
2009	51,633.50	9,081.60	0.13	0.18	3632.64	39%
2010	62,280.70	12,718.40	0.29	0.20	5087.36	35%
2011	77,690.50	20,650.50	0.38	0.27	8260.2	41%
2012	116,346.10	33,557.30	0.38	0.29	13,422.92	32%
2013	151,344.30	48,739.00	0.31	0.32	19,495.6	36%
2014	176,545.67	51,786.67	0.06	0.29	20,714.67	39%
2015	210,675.09	61,988.21	0.16	0.29	24,795.28	40%

Source: MIS of private Commercial Banks, NBE reports (2015) and an own computation

As indicated in the above table both private and public owned banks have contributed for financing of manufacturing sector. However, the depth of each bank‟s financial allocation varies due to the purpose the banks are established, stakeholder‟s interest, the mission in which the banks are formed, the source of fund and the purpose of the fund is allocated. The total loan granted by all banks at national level for manufacture sector is increasing from time to time.

2.3. Determinants of Non-performing loans

2.3.1. Micro economic factors

Banks has a major role in economic activity of every country through provision of different financial service. In addition to bank influence on economic activity, macroeconomic factor also affect activity of commercial bank in given country, macroeconomic variable which were found to affect NPLs in literature include GDP, exchange rate, Interest rate, inflation rate and others. The following macroeconomic factors are reviewed from different banking area study.

- **Deposit Interest Rate**

The level of interest rates has a direct effect on a consumer's ability to repay a loan. For example, Thordsen and Nathan (1999), assert that when interest rates are low, people are willing to borrow because they find it relatively easy to repay their debt. When interest rates are high, people are reluctant to borrow because repayments on loans cost more. Some consumers may even find it difficult to meet their existing loan repayments, especially if interest rates increase faster than the rise in a consumer's income. If interest rates rise sharply and stay high for a long period, some consumers will default on their loans.

From the main factors of banks NPL every country central bank regulation is the prominent factor that determined the level banks NPL. Regulation in the financial sector is aimed at reducing imprudent actions of banks with regards to charging high interest rates, insider lending and reducing asset defaults. The central banks have achieved this through interest rate ceilings and other monetary policies. Fofack (2005) argues that economic growth and the real interest rate are important determinants of bad loans in the sub-Saharan African countries. He attributes the relationship between macroeconomic factors and doubtful accounts to the undiversified environment of some economies and their high exposure to external shocks.

There is an empirical evidence of positive correlation between the interest rate and non-performing loans (Nkusu 2011; Adebola, Yusoff, & Dahalan, 2011; Louzis, Vouldis and Metaxas, 2011; Berge and Boye, 2007). An increase in interest rate weakens loan payment capacity of the borrower there for non-performing loans and bad loans are positively correlated with the interest rates (Nkusu, 2011).

As far as interest rate policy is concerned it plays very important role in NPLs growth rate in a country/economy, Hoque and Hossain (2008) examined this issue and according to them non-performing loans are highly correlated with the high interest rates which enhances the debt burden of the borrowers and causes loan defaults. Espinoza and Prasad (2010) examined the macroeconomic determinants of non-performing loans in the GCC banking system, according to them high interest rates increases loan defaults but they did not find statistically significant relationship.

Bloem and Gorter (2001) studied causes and treatment of NPLs, according to them frequent changes in the interest rate policy causes an increase in the bad loans. Asari, et al. (2011) also found significant relationship between loan defaults and interest rates they also found that an increase in loan defaults also causes asset corrosion of banks and subsequently capital erosion. According to Dash and Kabra (2010) the banks with aggressive lending policies charging high interest rates from the borrowers incur greater non-performing loans. Collins and Wanjau (2011) also found interest rate as a primary factor boosting non-performing loans.

- **Inflation Rate**

Inflation can be defined as a sustained or continuous rise in the general price level or, alternatively, as a sustained or continuous fall in the value of money. There is an empirical evidence of positive relationship between the inflation in the economy and non-performing loans (Khemraj and Pasha, 2009, Fofack 2005). While Nkusu, (2011) has explained that this relationship can be positive or negative according to the author inflation affects loan payment capacity of borrowers positively or negatively, higher inflation can enhance the loan payment capacity of borrower by reducing the real value of outstanding debt; moreover increased inflation can also weaken the loan payment capacity of the borrowers by reducing the real income when

salaries/wages are sticky, Nkusu further explains that in this scenario inflation reduces the debt servicing capacity of the loan holders as lenders adjust the lending interest rates to adjust their real return. So according to literature relationship between inflation and non-performing loans can be positive or negative depending on the economy of operations.

The researcher also provides evidence of a positive relationship between inflation rate and non-performing loans. He shows that inflationary pressures contribute to the high level of impaired loans in a number of Sub- Saharan African countries with flexible exchange rate regimes. According to this author, inflation is responsible for the rapid erosion of commercial banks‟ equity and consequently higher credit risk in the banking sectors of this African count.

The impact of inflation, however, may be ambiguous. On one hand, higher inflation can make debt servicing easier by reducing the real value of outstanding loan, but on the other hand, it can also reduce the borrowers‟ real income when wages are sticky. In countries where loan rates are variable, higher inflation can also lead to higher rates resulting from the monetary policy actions to combat inflation (Nkusu, 2011). Finally the authors do not find strong evidence of feedback effects from the soundness of banks‟ balance sheets to economic activity. The authors also found that banks which charge relatively higher exchange rate has a significant positive impact and lend excessively are likely to incur higher levels of non-performing loans. Finally, their result reveals that inflation is not an important determinant of NPLs in the Guyanese banking system.

- **Exchange Rate**

Exchange rate can affects borrowers‟ debt servicing capacity through different channels and its impact on NPL can be positive or negative (Nkusu 2011). For the Spanish banking sector, Jimenez and Saurina (2006) present evidence that the NPL ratio is explained by GDP growth, real interest rates and credit conditions. Based on their model, Khemraj and Pasha (2009) try to find the determinants of NPL in the Guyanese banking sector. They found that the real effective exchange rate (REER) has a positive effect on impaired loans. The result indicates that whenever there is an appreciation of the local currency, the NPL portfolios of credit institutions are expected to be high.

As far as relationship of the exchange rate is concerned literature provides mixed reviews. According to Khemraj and Pasha (2009) there is a positive relationship between real effective exchange rate and non-performing loans. An appreciation in exchange rates may have different implications i.e. it can adversely affect the loan payment capacity of export oriented firms (Fofack, 2005) on the other hand it can positively affect the loan payment capacity of those borrowers who borrow in foreign currency, the relationship between Nominal effective exchange rate (includes inflation) and non-performing loans is indeterminate. Fofack (2005) by using a pseudo panel based model for several Sub-Saharan African countries finds evidence that economic growth, real exchange rate appreciation and the real interest rate are significant determinants of nonperforming loans in these countries.

2.3.2. Bank Specific Factors

The existence of NPLs for some borrower under the same macro environment show the micro economic factors, which are viewed as exogenous forces influencing the banking industry are not the exclusive determinant of NPLs. On contrary, the distinctive features of banking sector and the policy choice of each particular bank with respect to their effort for maximum efficiency and improvement in their risk management and expected to exert a decisive influence on the evolution of NPLs. (Onchomba, 2014). Three bank specific variable will use in this study are discussed below in detail.

- **Credit monitoring and follow-up**

This hypothesis developed to see the effect of bank efficiency on the level of non-performing loans in the banking industry. The proposed justification links behind this hypothesis is bad management with poor skills in credit scoring, appraisal of pledged collaterals and monitoring borrowers. Managers in such banks do not follow the standard practices of loan monitoring, controlling and underwriting. Thus as “bad managers” they have poor credit scoring, collateral evaluating and loan monitoring and controlling skills. When mangers are inefficiently managing the current banking operations then it will lead to future growth in NPLs (Berger and DeYoung, 1997).

A weak Risk assessment can also play a role in increasing NPLs. The repute of borrowers to repay loan and the market value of securities are not adequately assessed while giving loans which become key reasons behind NPLs (Petersson, 2004). The study of Ning (2007) shows that the banks use their personal experiences in giving loans rather than using historical data, mature credit portfolio management skills and centralized information system. The banks should access information about creditability of the customers, so that NPLs can be reduced. In this regard responsibilities of banks should be clearly defined. It should be ensured that banks exercise effective policies and adequate risk management (Basel, 2001).

The study made by Podpiera and Weill (2008) examine empirically the relation between poor credit risk management and NPL. They conclude that there is strong evidence in favor of the bad management hypothesis and propose that regulatory authorities in emerging economies should focus on managerial performance in order to enhance the stability of financial system (by reducing nonperforming loans).

Hassan S.et. al,.(2010) by using the stochastic cost frontier approach and by applying normal-gamma efficiency distribution model to investigate the relationship between non-performing loans and bank efficiency in Malaysia and Singapore. There result also support the hypothesis of bad management proposed by Berger and DeYoung (1997), which suggests that poor management in the banking institutions results in bad quality loans, and therefore, escalates the level of non-performing loans. Banks‟ inefficiencies might lead to higher non-performing loans.

- **Deposits to Loans Ratio Effect Hypothesis**

According to Ferreira, C. (2008) deposits to loans ratio can be used as rough estimate of profitability on the deposits or as rough estimate of banking reserve ratio or can be used to measure national savings. The growth in deposits to loans ratio can predict the decline in the NPLs ratio. The theoretical justification of the relation is that the growth in deposits to loans ratio means the greater increase in the deposits as compared to the loans. As the deposits of the banks are growing and loans are not, it shows that banks are risk averse and lend only to those customers who have good credit history and are able to repay the loan.

On the contrary, study done by Fawad and Taqadus (2013) rejects the validity of the deposits to loans ratio effect by suggesting significant positive association between NPLs and reserve ratio. There finding is opposite to the findings of the above researchers. The study suggests that banks has already lend funds to the low quality borrowers in order to utilize idle funds because of the bad management and deviation from standard loan allocation practices, wrong evaluation of collateral and lack of loan monitoring and controlling skills (bad management hypothesis) and expect that in future the borrowers will not repay loans, banks stop lending with the fear of further increase in the riskiness of loans, thus deposits to loan ratio increases because of the expected increase in the future NPLs. Thus it can be concluded that the deposits to loan ratio increases because of the current lending to the low quality borrowers because of the bad management and stop current lending to prevent further growth in future NPLs.

Credit growth

The variable discussed the growth of rate in different period of time and country, the study of Keeton (1999) shows relationship between loans and speedy credit growth. The author has used a vector auto regression model on commercial banks in United States for the periods 1982-1996. Empirical studies show that lenient credit terms is one of the factors which increases NPLs. To expand credit, banks have to ease the standards of credit terms, monitoring of borrowers and decrease the interest rates (Keeton, 1999). The study of Sarlija and Hare (2012) indicates that in case of developed countries, lending is at a much speedy pace.

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.

Through the research period our country Ethiopia does not exercise difficult financial crisis but in other country before the financial crisis there was significant credit growth. This was largely thanks to the deregulation of financial markets and the development of information technologies in the banking industry (Rinaldi & Sanchis-Arellano, 2006). Since the financial crisis, the trend has been reversed and banks are now less willing to lend. This has led to an academic focus on bank lending behavior (Micco & Panizza, 2006; Olokoyo, 2011).

Keeton (1999) emphasizes the close relationship between the business cycle and loan growth; in particular that loan growth tends to be high during business expansion, while loan losses tend to be high during business contraction. Keeton (1999) also shows that faster loan growth leads to higher loan losses. This is because during a good business cycle, banks are more likely to grant loans to clients with weaker credit histories even when collaterals are low.
Borio et al. (2002), in a study based on a sample of Spanish banks, highlight that during recession, problem loans increase as a result of firms‟ and households‟ financial distress. When the economy is growing, firms request more loans and can repay them more easily, but when the economy stalls, firms show greater distress and difficulty in repaying debts. Borio et al. (2002) show that in Spain, bank lending is strongly procyclical, and that in periods of expansion, banks are more likely to lend credit to firms with low credit quality. This leads to future problems and default, typically during downturns, with an estimated time lag of approximately three years.

Interest income, which suggests that loan growth, is an important drives of the riskiness of banks Amador et al. (2013) underline the relationship between abnormal loan growth and banks‟ risk-taking behavior. They find that abnormal credit growth over a prolonged period of time leads to an increase in banks‟ riskiness, accompanied by a reduction in solvency and an increase in the ratio of NPL to total loans.

Several studies find that excessive credit growth can lead to the development of asset price bubbles. Borio et al. (2002) and Borio and Drehmann (2009) show that excessive credit growth is the main leading indicator of a financial crisis in a twelve-month horizon, in cases where it appears that the flow of loans would remain high for the remainder of the year on the basis of forward-looking indicators.

Another important contribution on Italian credit growth is the paper published by the Bank of Italy in 2013. In this study, Panetta (2013) finds that the main obstacle to the growth of loans is the deterioration of the credit risk caused by the prolonged recession. In the first quarter of 2013, the annual rate of input non-performing loans rose to 2.8% of total credit and to 4.5% for business loans. Panetta (2013) shows a positive relationship between non-performing loans and credit reduction by banks, or bank lending behavior. He underlines that uncertain economic prospects, the high default risk and the difficulty of assessing the soundness of each debtor generate adverse selection and aversion to rising risk among banks, which thus adopt policies of lending restrictions (Stringlitz and Weiss, 1981).

With regard to cooperative banks, Panetta (2013) shows that cooperative bank activity expanded significantly between 1995 and 2008, and their market share increased. He also shows that in the early years of the financial crisis (2008-2009), cooperative banks gave stability to the loan supply thanks to their financial soundness and funding stability. In the second half of 2011, cooperative bank liquidity suffered the effects of the sovereign debt crisis, and in October 2011 the net interbank position of the cooperative movement was in debt for the first time. In addition, cooperative banks are experiencing deterioration in credit quality. In 2012, the stock of non-performing loans increased by a quarter, and other impaired loans by almost a third. There is thus almost unanimous evidence that banks‟ risk appetite is compromised by experiences related to loan losses. An increase in NPL is expected to lead to a reduction in banks‟ credit lines, hence the negative relationship between NPL and loan growth rate.

2.3.3. Business Characteristic Factors

In addition to the above microeconomic variables and bank specific factors borrower have its own impact on the non performing loan in Ethiopia private commercial banks, in this study three borrower impact will assessed in manufacturing loan. Yet according to our country Ethiopia developing plan (GTP I (2010-2015), the manufacturing industry development is a major target to attain the predetermined objective, in line with this the sector have different incentive like tax exemptions, loan, infrastructure facilities and others (AACCSA, 2014). However the loan disbursed to the sector have to repay in full, but now days the sector gone be a primary defaulter

due to different internal and external reasons , beside to this paper use the following two variable to assess the impact of the business characteristic on the NPLs.

- Profit Margin of the Business

According to Mpunga (2004), the level of business income is important factor that would determine the credit worthiness of a client. Because secured lenders do not wish to become general creditors, they usually seek security with a market value sufficiently above the amount of the loan to minimize the likelihood of their not being able to sell the security in full satisfaction of the loan. The degree of security protection a lender seeks varies with the credit worthiness of the borrower, the security the borrower has available, and the financial institution making the loan.

- Nature/characteristic of the business

Ethiopia laying a ground to smooth the environment for both local and foreign investors, under council of minster regulation no 270/2012 investment incentive for manufacturing, especially in current situation our country had been build an industry zone in different region and number of foreign and local investors are participate in the industry zone. Beside to this especially the local firms source of finance are local commercial banks, the banks are obliged to give a priority for the firms. However, this easily availability of the loan may erode the paying ability of the firms.
As explained in the literature review, the major challenge of manufacturing sector in most developing countries is lack of educated and trained workforce, innovation, research and development, and global competitiveness.

In addition to these financing manufacturing sectors have also challenge of fulfilling requirement of cumbersome documentation process, inadequate long-term finances, lack of data base, rent seeking in both banking industry and borrowers side. Some of common challenges of financing this sector are indicated here below. The borrowers fail to pay their commitment due to internal and external factors; some of them are natural calamity, government policy changes, mismatch of demand and supply, fail to meet computation in price and quality, the integrity of lender and borrower, on the other side if the business is new or it is new project the business profit is raise gradually at decreasing rate. However, the in Ethiopian private bank trained the grace period is

only one year, so as per the nature of the business the sector cannot generate profit within that period. (Embiale Bitew October 2015)

According to Munene, and et al, (2013) the study was assesses out in order to establish the causes of such repayment defaults in Kenya North District. Using a descriptive survey design, collected using both structured and unstructured questionnaires were analyzed using descriptive and inferential statistics. The study concludes that there are various factors influencing non-repayment of loans which could arise from businesses characteristics.

Kefyalew Endale, (2012) assess business Climate and Manufacturing Performance in Ethiopia In sum, business climate constraints affect the loan repayment capacity negatively. The magnitudes of negative effects are high in the small size firms. Though the data used were 6 years prior to the current analysis, attempts are made to complement analyses with other studies and reports to examine whether there exist major changes in investment climates have occurred, CSA (2009), Kefyalew and Tsegabirhan (2010).

Our Country Empirical

As per the problem impact there is limited papers were done in the subject and this section discuss some empirical evidence in our country. The study made by Wondimagegnehu N (2011), intends to assess determinants of NPLs, the researcher only see bank specific factors of NPLs in Ethiopian commercial banks by adopting mixed research approach. The researcher 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.

Daniel .T (2010), focusing on management of non-performing loan on private commercial banks in Ethiopia. The study employed the mixed type of research. The result showed that credit policy

and supervision by the management has less contribution to the NPLs and most of the NPLs are caused by factors after the loan released, like Moral hazard of the borrower, ineffective monitoring, and operational loss of the borrower has created high NPLs in private commercial banks in Ethiopia.

Anisa U. (2015) conducts study on the determinants of nonperforming loan, in commercial banks of Ethiopia by using balanced fixed effect panel regression on eight commercial banks. The study assesses the impact of seven factors (four bank specific and three macroeconomic factors) affecting banks nonperforming loan were selected and analyzed, the finding showed that deposit rate, loan to deposit ratio and lending interest rate had positive and significant impact on banks nonperforming loan. According to the regression result 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 national product (GDP) growth rate and inflation rate had negative and statistically insignificant impact on banks nonperforming loan.

Another study also conducted by Gadise G. (2014) on determinants of nonperforming loans: in case of commercial banks in Ethiopia, study was conducted to examine both bank specific and macroeconomic determinants of NPLs. The finding revealed that inflation rate had negative, but insignificant effect on NPLs. however, bank profitability, banks capital adequacy ratio and lending rate had negative and statistically significant effect.

Zelalem T. (2013) made an empirical study on Ethiopia commercial banks; the study examines the bank-specific and macro-economic determinants of Non-performing loans (NPLs). The study adopts a mixed methods research approach by combining documentary analysis (structured review of documents) and in-depth interviews. 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. However, the relationship for average lending rate and income diversification were found to be statistically insignificant.

The current result indicated that lending interest rate has a strong positive coefficient and it is statistically significant at 1% significant level (0.0000). The result is in line with the fifth research hypothesis. The coefficient value of the variable (i.e. 5.198001) indicated a percentage rise/decline in banks lending interest rate, resulted in 5 times rise/decline in the NPL of banks in Ethiopia on the same direction. The coefficient value may suggest that from all determinants of NPL (from seven explanatory variables mentioned in this study) the most important one is interest rate and also NPLs rate highly influenced by lending interest rate. Lending interest rate had positive and significant impact on banks nonperforming loan. According to the regression result lending interest rate is a very important determinant of nonperforming loan in Ethiopia banking industry.

Theories argue that inflation rate and non performing loan have positive relationship. Unexpected rise in inflation under cyclical downturns is likely to negatively affect the performance of the banking sector and recovery of loans to private operators and investors. In the extreme case, hyper-inflation may erode banks assets and equity and weaken banks position through the interest rate channel (Piloiu.A et.,al.2013).

2.4. Empirical study On other Country

The authors like Sinkey and Greenwalt (1991) by employing a simple log-linear regression model and data of large commercial banks in the United States from 1984 to 1987 investigate the loan loss-experience of large commercial banks in the US; they argue that both bank specific and macro economic factors explain the loan-loss rate (defined as net loan charge offs, charge off rate which is also known as NPL rate) plus NPLs divided by total loans plus net charge-offs of these banks. The authors find a significant positive relationship between the loan-loss rate and internal factors such as high interest rates, excessive lending, and volatile funds. Similar to other study, the authors further report that depressed regional economic conditions also explain the loss-rate of the commercial banks.

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. From bank specific variables some of them are efficiency of the management, risk appetite and liquidity level, profitability, deposits and lending rates, bank size etc. have significant influence on the NPLs. From the external or macro level factors, unemployment rate, real GDP growth rate, inflation rate, real exchange rate, real interest rate etc. have a significant impact on the rate of NPL.

Makri, Tsagkanos and Bellas (2014) study examined the factors affecting the non-performing loans rate (NPL) of Eurozone‟s banking systems for the period 2000-2008. A dynamic panel regression method for our analysis specifically, a Generalized Method of the Moments (GMM difference) technique was applied. The variables used include both macro-variables (e.g. annual percentage growth rate of gross domestic product, public debt as percent of gross domestic product, unemployment) and micro-variables (e.g. loans to deposits ratio, return on assets and return on equity). The findings reveal strong correlations between NPL and bank-specific (capital adequacy ratio, rate of non-performing loans of the previous year and return on equity) factors.

2.4.1. Empirical study's on Microeconomic Factors

The literature suggests a big and strong association between micro economic variables NPLs. These are annual growth in *GDP*, credit growth, real interest rates, the annual inflation rate, real effective exchange rate annual unemployment rate, broad money supply (*M2*) and GDP per capital etc. (Saba et al., 2012:129). The external or Macroeconomic factors that determine bank NPL are those factors which are external to the commercial banks and hence outside the control of management.

Most empirical studies examine the influence of the macroeconomic environment on non performing loans (Louzis et al, 2011). Rinaldi and Sanchis-Arellano (2006) analyze household non performing loans for a panel of European countries and provide empirical evidence that disposable income, unemployment and monetary conditions have a strong impact on non performing loans. Berge and Boye (2007) find that problem loans are highly sensitive to the real interest rates and unemployment for the Nordic banking system over the period 1993–2005.

According to Olomola (1999), loan disbursement lag and high interest rate can significantly increase borrowing transaction cost and can also adversely affect repayment performance. After surveying different banks in India, Berger and De Young (1995) identified the main causes of default of loans from industrial sector as improper selection of an entrepreneur, deficient analysis of project viability, inadequacy of collateral security/equitable mortgage against loans, unrealistic terms and schedule of repayment, lack of follow up measures and default due to natural calamities.

The study conducted by Okorie (1986) in Ondo state in Nigeria revealed that the nature, time of disbursement, supervision and profitability of enterprises, contributed to the repayment ability and consequently high default rates. Furthermore macroeconomic instability which is mostly manifested by high inflation rate also makes loan appraisal more difficult for the bank, because the viability of potential borrowers depends upon unpredictable development in the overall rate of inflation, its individual components, exchange rates and interest rates. Moreover, asset prices are also likely to be highly volatile under such conditions. Hence, the future real value of loan security is also very uncertain that banks do poorly both when product and asset price prudential policy, inflation accelerates unexpectedly and when inflation decelerates unexpectedly, unemployment increases, and/or aggregate output and income decline unexpectedly.

It was found that macroeconomic variables, specifically the real GDP growth rate, the unemployment rate and the lending rates have a strong effect on the level of NPLs or it shows that NPLs in the Greek banking system can be explained mainly by macroeconomic fundamentals (GDP, unemployment, and interest rates). On the same year the finding of Greenidge and Grosvenor (2010) showed that GDP growth, inflation and interest rates are common macro-economic factors that determine the level of NPLs.

According to Shu (2002), the study uses a single-equation time series model to examine the impact of macroeconomic developments on loans quality in Honk Hong for the period 1995–2002. The results show that the ratio of bad loans to performing loans falls with higher real gross domestic product growth, higher consumer price inflation rate and higher property prices growth, whereas it rises with increases in nominal interest rates. The unemployment rate and

performance of equity prices growth are not significant. Interest rates were also found to be significant in several studies.

Causes and treatment of non-performing loans were analyzed in detail by Bloem and Gorter (2001). They agreed that “bad loans” may considerably rise due to abrupt changes in interest rates. They discussed various international standards and practices on recognizing, valuing and subsequent treatment of non-performing loans to address the issue from view point of controlling, management and reduction measures.

A study conducted by Espinoza and Prasad (2010) focused on macroeconomic and bank specific factors influencing non-performing loans and their effects in GCC Banking System. After a comprehensive analysis, they found that higher interest rates increase non performing loans but the relationship was not statistically significant.

The relationship between the macroeconomic environment and loan quality has been investigated in the literature linking the phase of the business cycle with lending institutions stability. For instance Fofack (2005) analyze the macroeconomic implication on loan default in Sub-Saharan countries. Fofack showed that, macroeconomic stability and economic growth are associated with a declining level of default; whereas adverse macroeconomic shocks coupled with higher cost of capital and lower interest margins are associated with a rising scope of nonperforming loans

Nkusu (2011) who focus on 26 advanced economies in the period of 1998–2009, investigate the macroeconomic determinants of loan defaults through panel regressions and panel vector autoregressive models found that adverse shocks to asset prices, macroeconomic performance and credit to the private sector lead to a worsening of loan quality. The author suggests that increase in interest rates result in deterioration of borrower‟s repayment capacity and hence, cause of increase in non-performing loans.

2.4.2. Empirical Study on Bank Specific Factors

Podpiera and Weill (2008) examine empirically the relationship between cost efficiency and non-performing loans in the context of the Czech banking industry for the period 1994 to 2005. They conclude that there is strong evidence in favor of the bad management hypothesis and proposed that regulatory authorities in emerging economies should focus on managerial performance in order to enhance the stability of financial system (by reducing nonperforming loans).

The study period covered from 2004 to 2013. 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. According to the regression result lending interest rate is a very important determinant of nonperforming loan in Ethiopia banking industry. Bank solvency ratio and gross national product (GDP) growth rate ad inflation rate had negative and statistically insignificant impact on banks nonperforming loan. The study then suggests that banks loan officers should constantly monitor each borrower‟s circumstances to detect loan problems before they become uncorrectable.

Messai and Jouini (2013) evaluated the determinant non performing loan for a sample of 85 banks in three countries (Italy, Greece and Spain) for the period of 2004-2008. A method of panel data was employed on the following bank specific variable, return on asset, the change in loan and the loan loss reserve to total loan. The result show the non performing loan varies negatively with profitability of banks‟ asset and positively with the loan loss reserves to total loans. Warue (2013) investigate the relationship between NPLs and bank specific and microeconomic factor and establish and the extent to which the factor affect the occurrence of NPLs in commercial bank in Kenya.

2.4.3. Empirical on Business Characteristic Impact

The size of business relates to the amount of income obtained from it. Mpunga (2004) asserts that the level of business income is important factor that would determine the credit worthiness of a client. At low levels of income, business have little money to save while at higher levels much can be saved and even used to purchase collaterals which can be used as loan securities. Such securities can be sold to repay loans.

Munene, and et al. (2013) There was a significant relationship between the type of business ($p=0.000<0.05$), age of the business ($p=0.000<0.05$), number of employees ($p=0.011<0.05$) and business profits ($p=0.000<0.05$) and loan repayment default. We therefore accept the null hypotheses that the type of business operated, age of the business, number of employees and business profits influence the loan repayment default. However, the strength of the relationship between type of business and loan default is a fairly weak (Phi=.277, Cramer's V=.277 &Contingency Coefficient=.267). Strength of the relationship between profits and loan default and age of business and loan default was equally weak.

While, in terms of relationship between default borrower with good borrower, the findings has shown that, age, business sector, year of establishment, distance, business area, total loan, repayment schedule, repayment period, monthly installment and loan monitoring have positive coefficient while, business experience, education level, religious education level, total income, business status, register with SSM, total sales, loan type and transaction cost have negative coefficient.

The borrower fail to pay their loan regularly due to the economic meltdown that lead to the business activities slowdown, internal business management failure and other external factors. As a result of these factors borrower fail to satisfy their commitment and bank suffer with non performing loan and loss of credit market. The external factors include natural disaster, government policy and the integrity of the borrower as a major factor that caused non performing loan. (Joseph, 2012).

2.5. Conclusion and Identification of Knowledge Gap

As per the empirical analysis of our country and other countries researchers, plenty of variables were assessed. However still there is not a standard variable to determine non performing loan, rather they agree on its greater impact on the overall economy. Yet as per its danger still there is a few papers were done, in our country as to the researcher knowledge, there is no empirical study on the determinant of NPLs, which shows all three major determinants of NPLs (bank specific, microeconomic and business characteristic factors). Specifically there is lack of papers that are done determinant of NPLs from business characteristic perspective.

Besides, most of the related literatures reviewed cover different studies made both in developing and developed countries‟ banking industries. Even if quite numbers of studies have investigated on the determinants of NPLs, most of these studies have been done in developed countries with few being done in developing countries. As per the report of NBE and the private commercial banks data manufacturing sector is a pioneer sector that faces more NPL than other sector.

Due to governmental economic policy there is incentive to obtain more ratio of loan to the manufacturing sector than other sectors and the loan arrears of manufacturing sector gone be risen through out period of time, as per the researcher knowledge there is not any paper in the determinant of nonperforming loan in Ethiopian private commercial bank manufacturing sector. Therefore, this research will contribute towards filling the gap by identifying and analyzing the factors that affect level of nonperforming loans in Ethiopia private commercial banks, specifically the manufacturing sector.

CHAPTER THREE

RESEARCH METHODOLOGY

3. Introduction

Based on the research empirical evidence this chapter is organized to provide brief outline of the broad objective of the study and hypotheses, the underlying principle of research methodology and the choice of the appropriate research method for the study.

3.1. Variable Specification

As discussed earlier the objective of the study is to find out the determinant of NPLs in EPCBs. In line with this the first section discusses the dependent variable (NPLs) and the explanatory variables are discussed based on their category (microeconomic, bank specific variable and borrower specific variables).

3.1.1. Dependent Variable

Non Performing Lon

According to NBE "Loans or an advance is that credit quality has deteriorated, such that full collection of principal and interest in accordance with the loan or advances in repayment terms of the loan or advances in question". As per Basel committee (2001) NPLs is loans which are not paid and their overdue time period is 90 days after maturity date. In line with this the economic impact of NPL may gone be source of bank failure; this crisis will have effect on the country overall economy. beside to this objective of the paper will be to analyze the impact of microeconomic, manufacturing industries business characteristics and bank specific factors on the loan repayment performance and as far as this study intends to investigate the determinates of NPLs in ECPBs. The dependent variable NPLs measured or indicated by the amount of NPLs to gross loans.

3.1.2. Independent Variables

Independent variables are explanatory variables that explain the dependent variables. In case, independent variable included in this study are macroeconomic factors deposit interest rate (DIR), inflation rate (INFR), and exchange rate (EXR), the other bank specific independent

variables are credit monitoring and follow-up (CM), loan to deposit ratio (LDR) and loan growth rate (LGR) and on the another side the variable included on the borrower characteristic are Business profit margin (BUPM) and (BC) business characteristic/nature. Majority of these variables are modified and adopted from previously done studies based on the extent of their effect on nonperforming loan.

3.1.2.1. Microeconomic variable

The existing literature provides evidence that suggests a strong association between NPLs and several bank microeconomic variables. The microeconomic variables that are theorized and may used in this study will include lending interest rate, inflation rate and exchange rate Hence, the following part of this subsection presents the microeconomic variables may used in this study.

- **Lending Interest Rate**

As per the theories and researchers lending interest rate is positively related with NPLs, (Adebola, Yusoff, & Dahalan, 2011, Berge and Boye, 2007, Bloem and Gorter, 2001, Fofack, 2005, Thordsen and Nathan, 1999, Nkusu 2011 , Louzis, Vouldis and Metaxas, 2011;. The basic argument here is that an increase in interest rate weakens loan payment capacity of the borrower and some consumers may even find it difficult to meet their existing loan repayments. In line with this lending interest rate have positive correlation with NPLs but some researchers are argued on the significance of the variable to determine the NPL, (Espinoza and Prasad 2010). On another side Collins and Wanjau (2011) found interest rate as a primary factor boosting non-performing loans, specifically in sub-Saharan African countries interest rate are important determinants of bad loans in the sub (Fofack, 2005).

- **Inflation Rate**

As the same as the lending interest rate inflation erode the repayment capacity of borrower, it implies that there are sustained and pervasive increments in aggregate price of goods and services resulting decline in purchasing power of money, beside to this inflation and NPL have positive correlation (Fofack, 2005, Khemraj and Pasha, 2009,). specifically in the manufacturing sectors the value of input (row material) gone be risen but in line with the price appreciation the

cost of production is risen and as per the inflation impact the consumer paying capacity will fall dawn so the factories in the sector loan repayment capacity may fall down.

On the other side inflation reduces the debt servicing capacity of the loan holders as lenders adjust the lending interest rates to adjust their real return. So according to literature relationship between inflation and non-performing loans can be positive or negative depending on the economy of operations Nkusu, (2011). Smadi (2010) also found a negative association between inflation and NPLs in Jordanian commercial banking sector.

.

- **Exchange rate**

Another microeconomic determinant exchange rate appreciation in local currency can adversely affect the loan payment capacity of borrower, (Fofack, 2005). specifically it can positively affect the loan payment capacity of those borrowers who borrow in foreign currency, on the other side in our country perspective the manufacturing sector is more export oriented firms, according to the domestic currency depreciated they are obliged to focus on the international market and can dominate the international market at lower price (since their production cost is covered in domestic currency which has lower value than foreign currency and their revenue is collected in foreign currency which has higher value as compared to the domestic currency Hence, depreciation of exchange rate can improve the debt-servicing capacity of manufacturing sector borrowers. accordingly exchange rate have positive or negative correlation with NPL based on the nature of the business.

3.1.2.2.Bank Specific Variables

The existing literature provides evidence that suggests a strong association between NPLs and several bank specific variables. The bank specific variables that consider in this study as determinates of NPLs are include credit monitoring and follow-up, loan to deposit ratio and loan growth ratio yet, the following part of this subsection presents the bank-specific variables used in this study.

- **Credit monitoring and follow-up**

It is the process loan follow up and monitoring of loan commences from the application of loan until the final repayment of the disbursed loan, generally it shows that the management efficiency the cost exert to the loan follow-up, if it is well and enough they can to reduce the rate of NPLs. However if it is "bad managers" that have poor credit scoring, collateral evaluating and loan monitoring and controlling skills, have a weak Risk assessment that can play a role in increasing NPLs (Berger and DeYoung, 1997, Podpiera and Weill (2008), Hassan S. et al., 2010**)**. As per the previous outer the variable has a negative correlation with NPLs.

- **Loan to Deposit Ratio**

Loan to deposit (LTD) ratio examines bank liquidity by measuring the funds that a banks has utilized into loans from the collected deposits. It demonstrates the association between loans and deposits. Besides, it provides a measure of income source and also measures the liquidity of bank asset tied to loan (Makri et al. 2014). This ratio also measures customer friendliness of banks implies that relatively more customer friendly bank is most likely face lower defaults as the borrower will have the expectation of turning to bank for the financial requirements (Ranjan and Chandra, 2003). Thus, it represents a bank"s preference for credit. It is credit culture that represents a bank"s preference for credit. It is measured in terms of loan to deposit ratio. There is empirical evidence that shows as LTD ratio has significant effect on the level of NPLs of banking sectors in different aspects. In this study, this ratio is expected to have positive relation with NPLs.

- **Loan growth rate**

Loan growth examines the lending behavior of the bank at different economical situation and period of time. According to Jiménez, et al. (2007), they linked the lenient credit terms with Non-Performing Loans i.e. 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. Keeton (1999) emphasizes the close relationship between the business cycle and loan growth; in particular that loan growth tends to be high during business expansion, while loan losses tend to be high during business contraction. In Ethiopia private commercial bank there is no consistent growth rate during the research

period,(2000-2015) that is vary based on their capital and other condition and the paper may want to analyze the effect of the growth rate on the increment of NPL, the paper expect a negative correlation between loan growth rate and NPL.

3.1.2.3.Business characteristic

This section discusses the significance relationship between borrowers characteristic on loan repayment. This implies that the way borrowers handle the accessibility of loan or after acquiring credit from the bank, had a lot of effect on determining the relationship that is formed during the lending process which would in turn affect effectives an efficiency of loan repayment.

- **Business profit margin**

As mentioned in the literature review part of this study, there is no general consensus on the business profit. In this regard, vast empirical literature found both a significant positive 2006) and negative association between business profit and NPLs. As per real world situation and previous theoretical evidence, when the profit earned from the business raise up the paying ability also goes up, so the rate of NPLs fall dawn. Yet this study expects the business profit margin and NPLs have negative correlation.

- **Nature of the business**

According to (Embiale Bitew, 2015), the grace period given by the bank (six bank used for the study is only one year, in line with this if the company is just at establishment the first year will be used to plant the machine and the nature of the business profit is not raise as soon as the establishment of the company, Nevertheless the repayment of the loan gone be arrears for the first two three years, after the loan disbursement. The manufacturing business is more affected by the external force, like suppliers the set up of the domestic and foreign market and also the government policies have a great impact on the development of the sector. The development of infrastructure has a core role on the growth of the sector. However, the infrastructure of the country has an appreciation but still is not well enough with the demand. In line with this according to the nature of business the performance of the sector is not calculated by the company itself i.e. external forces have more roles on the performance of the sector.

3.2. Research Method Adopt

Depending on the research problem carried out research method can be qualitative, quantitative or mixed. The study applies mixed methodology by combining between quantitative data and qualitative data, the study was used qualitative method for two variables (monitoring and follow-up and nature/characteristic of the business and the quantitative approach for six variables (inflation, deposit interest rate, exchange rate, deposit to loan ratio and loan growth rate). According to Creswell (2002), the mixed methods design can be used to generalize findings to a population and develop detailed views of the meaning of a phenomenon or concept for individuals.

3.3 Nature of Data and Instruments of Data collection

This study use panel data. The study was used panel data since panel data can take heterogeneity among different units into account over time by allowing for individual-specific variables. Besides, by combining time series and cross-section observations, it gives more informative data. Furthermore, panel data can better detect and measure effects that simply cannot be observed in pure cross-section or pure time series data (Gujarati, 2004).

Accordingly, the study used both primary and secondary sources of data. A primary source of data is prefer as per the nature of the two variables, the study need to have the raw data to have understanding on the perception of the designated party‟s perception on the research area. A secondary source of data may preferred by the study since it is less expensive in terms of time.

Secondary data is either being published or unpublished data (Kothari, 2004). Accordingly, primary data is obtained by in depth semi structured interview with the responsible parties, three persons in each bank banks (one loan head manager and two loan officers) and selected manufacturing companies managers.

Secondary data is obtained from the audited annual financial statements of the concerned private commercial banks in Ethiopia. These data includes both bank specific and macroeconomic factors. The bank specific variable data is obtained from the country‟s central bank, National bank of Ethiopia, head office of each bank and from the central statistical agency (CSA).

3.4. Population and Sampling Design

The total population of the study was private commercial banks in Ethiopia (sixteen private and two public owned banks) NBE 2014/15. The sampling frame for drawing sample included those commercial banks having at least 15 years working experience in Ethiopia (i.e. from 2000 to 2015). Yet, commercial bank of Ethiopia (CBE) is one of senior and covers the largest market share portion, but as per the ownership structure and the frame of the bank loan structure is differ than private commercial banks and further more the prior research is done before are totally assess only the Commercial bank of Ethiopia (CBE) data.

Accordingly there are sixteen Private commercial bank listed on table 1.4, the table discus outstanding loan disbursed by private banks from 2000-2015. It showed that out the total outstanding loan 84.13% of manufacturing loan was disbursed by the six private banks (AIB, DB, BOA, WB, UB and NB) and the total coverage of the banks is more than 50% so the finding of the study can to explain the problem of the Private commercial banks.

Beside there is not any paper which is done only on the Ethiopian private commercial banks and the study intend to focus only on six private commercial banks having at least fifteen years experience which include: Dashen Bank S.C (DB), Awash International Bank S.C (AIB), Wegagen Bank S.C (WB), United Bank S.C (UB), Nib International Bank S.C (NIB) and Bank of Abyssinia S.C (BOA) but other private banks have not 15 year experience, yet the study needs to assess 15 years data of the bank. Therefore, the matrix for the frame is 16*6 that includes 96 observations.

In this case, since the numbers of private commercial banks in our country which have 15 years experience are small, the study assumed the data of all banks without taking sample. Therefore, the sampling frame and the sample was the same. According to Brooks (2008), while there is no definitive answer for an appropriate sample size for model specification, it should be noted that most testing procedures in econometrics rely on asymptotic theory. This theory says that as the sample size approaches to the population, the results from the sample estimates are more appropriate for generalizing to the general population and for primary data from the bank, the

study can to interview two senior loan officer and the manager of the department in each bank and the study totally can to interview 12 senior loan officers and 6 loan department managers.

Regarding the firms in manufacturing sample selection was based on stratified sampling where borrowers were selected in such a way that it comprises a diversified activity and in proportion to the population classification in terms of their loan status but It excludes borrowers whose repayment installment has not yet matured. In line with this the study was first identify the manufacturing companies that face NPL in each sub sector (food and beverage and textile) in each bank. Out of the total outstanding loan in average 3 manufacturing face NPL in each sub sector (for privacy case the name of the company is not disclose) and totally 36 companies face NPL in the final research period (2015) in all six banks, out of 36 the 18 designated persons are interviewed. Therefore the study can to contact of 50 % of the total population (36).

3.5. Data Presentation and Analysis Techniques

The data collected from different sources is coded, checked and entered to simple excel program to make the data ready for analysis, Then the stated objective of the study is achieved, the collected panel data is analyzed using descriptive statistics, correlation matrix and multiple linear regression analysis. The descriptive statistics (Mean values and standard deviations) might use to analyze the general trends of the data from 2000 to 2015 based on the sample of 6 banks, and the correlation matrix may also use to examine the linear relationship between the dependent variable and independent variables. Finally, a multiple linear regression model is used to determine the relative importance of each independent variable in explaining the variation of NPLs in EPCBs.

Accordingly, a two step multiple linear regression equations were run. In the first step (general) regression equation, all the proposed independent variables were regressed with respect to the dependent variable (NPLs). To this end, only the significant variables that are found from the first step regression equation are regressed once again. .

The multiple linear regressions model was conducted by the ordinary listing square (OLS) method using EVIEWS 6 econometric software package. The rational for choosing OLS is that, if the Classical Linear Regression Model (CLRM) assumptions hold true, then the estimators

determined by OLS will have a number of desirable properties (Brooks 2008). In addition, as noted in Petra (2007) OLS outperforms the other estimators when the following holds; the cross section is small and the time dimension is short. Therefore, as far as both the above facts hold true in this study it is rational to use OLS.

Furthermore, various diagnostic tests such as normality, heteroscedasticity, and autocorrelation and multicolinearity test were conducted to decide whether the model may use in the study is appropriate and to fulfill the assumption of classical linear regression model. Finally, a multiple linear regression model was used to determine the relative importance of each independent variable in explaining the variation of NPLs in EPCBs.

3.6. Model Specification

The aim of this study is to examine the determinants of NPLs of private commercial banks in Ethiopia. Accordingly, this study examined the determinants of NPLs of commercial banks in Ethiopia by adopting a model that is existed in most literature. The regression model which is existed in most literature has the following general form;

$$Y_{it} = \beta_0 + \beta X_{it} + \varepsilon_{it}$$

Where: - Y_{it} is the dependent variable for firm „**i**" in year „**t**", β_0 is the constant term, β is the coefficient of the independent variables of the study, X_{it} is the independent variable for firm „i" in year „**t**" and ε_{it} the normal error term. Thus, this study is based on the conceptual model adopted from Fawad and Taqadus (2013).

Accordingly, the estimated models used in this study are modified and presented as follow;

$$NPL_{it} = \beta_0 + \beta_1(DIR)_{it} + \beta 2(INFR)_{it} + \beta_3(EXR)_{it} + \beta_4(LDR)_{it} + \beta_5(BUPM)_{it} + \beta_6(LGR)_{it} + \varepsilon_{it}$$

Where;

Where: DIR_{it}=deposit interest rate of bank *i* at time *t*, $INFR_{it}$ = Inflation rate *i* at time *t*, EXR_{it} = Exchange Rate *i* at time, LDR_t = Loan Deposit Ratio at time *t* , $BUPM_{it}$ = Business profit Margin of the sector at time *t*, LGR_{it} = Loan growth rate *t,* ε_{it} = the error term.

Table 3.1: Expected Sign (+/-) of Explanatory Variables in this Study

Explanatory Variable	Expected Sign (+/-)	Measures	Source of data
Inflation Rate	+/-	The annual inflation rate	Bank-specific data from Income statement and Balance sheet held by NBE and the banks and macroeconomic data from the records held by NBE and MOFEC
Exchange Rate	-	Annual effective Exchange rate of Ethiopian birr in terms of other country currency	
Interest Rate	+	The average deposit rate of banks	
Loan to Deposit Ratio	+	Total loans to total deposit	
Loan growth rate	+	Average annual loan growth rate	
Business Profit Margin	-	Annual average business profit	Income statement and Balance sheet held by the manufacturing company
Credit Risk Management Tech.	-		In-depth semi structured face-to-face interviews with senior Ethiopian bank officials
Nature and characteristic of the business	+/-		In-depth unstructured face-to-face interviews with senior Ethiopian bank officials and the manufacturing sector leadership

Notes: A positive sign "+" indicates direct impact; whereas a negative sign "–" indicates an inverse impact of explanatory variables on dependent variable.

CHAPTER FOUR
RESULTS AND DISCUSSIONS

4. Introduction

In this chapter of the study, the panels data, which is collected from the financial statements, are analyzed through E-view software and other information gather from semi structured in-depth interview, are discussed in this chapter. The results from the regression and correlation analysis are presented in table and discussed one by one. The regression model is used to analyze the panel data collected and to test the effect of the independent variables on the dependent variable so that the research hypotheses are fully tested. Multiple regression analysis is employed to test whether one or more independent variables (predicators) influence the dependent variable (outcome variable) and to identify whether the effect is positive or negative. Generally the purpose of this chapter is to present results and analysis of data obtained from different methods involved in this study.

4.1. Research Hypotheses and Questions

As mentioned in chapter one the broad objective of this study is to investigate the determinants of NPLs in ECBs. So as to achieve this broad objective the study developed the following ten hypotheses and two specific research questions:

H1.There is significance and positive and relationship between deposit interest rate and NPL.
H2.There is significance and positive relationship between inflation rate and NPL.
H3.There is significance and positive relationship between foreign exchange rate and NPLs
H4.There is significance and positive relationship between nature of the business and NPLs.
H5.There is significance and Negative relationship between business profit margin and NPLs
H6.There is significance and positive relationship between loans to deposit ratio and NPLs.
H7. There is significance positive relation with loan growth rate of banks and NPLs.
H8. Credit monitoring and follow-up has significante negative relation with NPL of banks.

4.2. Choosing Random effect (RE) Versus Fixed Effect (FE) Models

According to Gujarati (2004), if T (the number cross sectional unit) is large and N (the number of independent variable) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model/FEM and random effect model/REM. Hence the choice here is based on computational convenience. According to Brooks (2008); Verbeek (2004) and Wooldridge (2004), it is often said that the REM is more appropriate when the entities in the sample can be thought of as having been randomly selected from the population, but a FEM is more plausible when the entities in the sample effectively constitute the entire population/sample frame. On the other hand random effect is used when the number of entities is greater than the independent variable, if independent variable is less than or equal to with entities the researcher is obliged to use fixed effect models. Hence, this study chose to use FEM since the entities (banks) and variable is equal.

4.3. Results

The purpose of this section is to present the results of data obtained from different data sources. Accordingly, the results of the documentary analysis (structured reviews of documents) and in depth interviews are presented in the following subsections.

4.3.1. Descriptive Statistics

This section presents the descriptive statistics of dependent and explanatory variables used in this study. The dependent variable used in this study was NPLs ratio while explanatory variables are BUPM, DIR, EXR, INFR, LDR, and LGR. Accordingly, the following table 4.1 reports mean, median, maximum, minimum, standard deviation and number of observation for each variables used in this study. In case, the following table 4.1 shows that all variables have 96 observations.

Table 4.1. Descriptive Statistics of Dependent and Independent Variables

Variable	Mean	Median	Maximum	Minimum	Std.dev.	Observation
NPL	0.100417	0.07	0.45	0.02	0.097516	96
BUPM	0.278958	0.29	0.6	0.07	0.129383	96
DIR	0.041875	0.04	0.06	0.03	0.010791	96
EXR	1.0525	0.955	1.3	0.91	0.147762	96
INFR	0.115938	0.081	0.364	-0.106	0.118194	96
LDR	0.722813	0.71	1.16	0.49	0.155409	96
LGR	0.175313	0.16	1	0.00	0.128128	96

Source: Financial Statements of banks, MOFEC reports and own computation

The mean value for NPL of banks was 10 percent with a standard deviation of 9.75% the mean indicates that private commercial banks in Ethiopia incurred 10% NPLs on averages from its total loan. The average value of nonperforming loan for fifteen consecutive years was above the average requirement of national bank of Ethiopia (5%) and there were a big variation across the sample banks NPL ratio. NPL for the sample period was ranged from 2 percent to 45 percent, the minimum and maximum value respectively.

When we come to the explanatory variable BUPM it range from minimum of 7% up to maximum 60% and its mean value 27.89% and it shows there is a great variation in BUPM within the research period. The second variable DIR was minimum of 3 percent and maximum 6 percent and the standard deviation was 1 percent this indicate that there is no difference in deposit interest and the average percentage of interest is 4%.

Regarding to the annual average exchange rate in the research year the maximum exchange rate in the country was 1.3 (logarithm result) and the minimum exchange rate was 0.91 (logarithm result). The standard deviation of EXR was 14%, which shows that the variation of exchange rate among sample is high; it implies that there is a fluctuation of currency in the country. The rate of inflation was highly dispersed over the periods under study towards its mean with standard deviation of 0.11. The maximum inflation rate was recorded in the year 2009 (i.e. 0.36) and the minimum was in the year 2012 .

Regarding LDR ratio that measured by total loans divided by total deposits, it ranges from a minimum of 0.49 to a maximum of 1.16%. It has a mean of 0.72% with highest deviation (0.15) from its mean value. Finally the LGR of Ethiopian banks have a minimum 0 growth rate, which shows it have no change on consecutive years and the maximum 1 with the third highest standard deviation of 0.12, it implies that average annual loan have great variation in EPCBs .

Among bank specific variables employed in this study LDR had a higher standard deviation which was 0.155 with a minimum 0.49 (logarithm result) and maximum (1.16). Moreover, the Standard deviation of inflation rate (0.11) indicates the existence of less volatility of inflation in Ethiopia over the period under consideration. Thus, it can be concluded that, the macroeconomic variables were relatively stable over the sample periods as compared to bank specific variables with the exception of instability on exchange rate.

4.3.2. Test for the Classical Linear Regression Model (CLRM) Assumptions

This section provided test for the classical linear regression model (CLRM) assumptions such as Normality, Heteroscedasticity, Autocorrelation and Multicolinearity tests. The linearity of the parameter is assumed since the model applies linear ordinary least square (OLS). The objective of the model is to predict the strength and direction of association among the dependent and independent variables. Before applying the model for testing the significance of the slopes and analyzing the regressed result, Normality, Multicolinearity, Autocorrelation and Heteroscedasticity tests are made for identifying misspecification of data if any so as to fulfill research quality.

- ✓ **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. To test for the presence of Heteroscedasticity, the popular white test was employed (Brooks 2008). As shown in table, the white test statistic gave that there was no evidence for the presence of Heteroscedasticity in this particular study since the p-values for all versions of the test statistic were in excess of 0.05. Hence the p value is 7.41% showing insignificant value.

Table 4.2. Heteroskedasticity Test: White

F-statistic	1.725553	Prob. F(38,56)	0.0311
Obs*R-squared	51.23957	Prob. Chi-Square(38)	0.0741
Scaled explained SS	278.4757	Prob. Chi-Square(38)	0.0000

Source: E-view output

- ✓ **Test for Autocorrelation Assumption**

This assumption implies that the errors are linearly independent of one another (uncorrelated with one another) Brooks (2008). If the errors are correlated with on e another, it would be stated that they are auto correlated, that means errors associated with one observation are uncorrelated with the errors of any other observation. The researchers test the autocorrelation using both Breusch-Godfrey Serial Correlation LM Test and DW (Durbin-Watson) test statistic. The result implies that the research independent variable error term is uncorrelated each other.

The test result indicated in Breusch-godfrey test shows the null hypothesis of no autocorrelation is not rejected, since it is above 5% significance level. Hence the p value is 0.23 so there is not autocorrelation within the variables.

Table 4.3. Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.165052	Prob. F(2,82)	0.3170
Obs*R-squared	2.624921	Prob. Chi-Square(2)	0.2692

Source: E-view output

Moreover, in addition to the above autocorrelation is tested by DW (Durbin-Watson) test statistic, according to the table the dl is 1.535 and du value is 1.802 in 96 observation and six variables at 5% level of significance.

The DW test statistic value from the regression result is 2.14 and it is above the lower level and the upper level, yet 4-du= 2.198 and 4-dl=2.465 and in both case it is near to 2 so it fall on the region of no evidence of autocorrelation.

Table 4.4 Durbin-Watson DW test

Reject Ho: Positive Autocorrelation		Do not reject HO: no evidence of autocorrelation		Reject Ho: Negative Autocorrelation	
	Inconclusive		Inclusive		
		2			
0	DL	DU	4-DU	4-DL	4

Source: E-view output

- ✓ **Multicollinearity**

As indicated earlier we say there is Multicollinearity problem when there is correlation between variables employed in the regression model (when the assumption that cov(x1,x2) = 0 is violated). That is the existence of a ``perfect`` or exact linear relationship among some or all explanatory variables of a regression model (Gujarati, 1995). The Intercorrelation between the two variables can be measured by the partial correlation coefficient between one variable with another variable. As a rule of thumb, if the correlation coefficient between the two variables is greater than 0.8, one can conclude that there is a series problem of Multicollinearity. Accordingly the test result shows that the correlation coefficient between all variables under consideration is less than 0.8 implying that the explanatory variables can separately contribute to the variation in the dependent variable.

Table 4.5 Correlation Matrixes of Independent Variables

	BUPM	DIR	EXR	INFR	LDR	LGR
BUPM	1					
DIR	-0.490153	1				
EXR	-0.195435	0.464421	1			
INFR	-0.343961	0.055058	0.226609	1		
LDR	-0.050277	-0.208192	-0.715009	-0.299096	1	
LGR	-0.074082	0.012514	-0.07599	-0.031403	0.143192	1

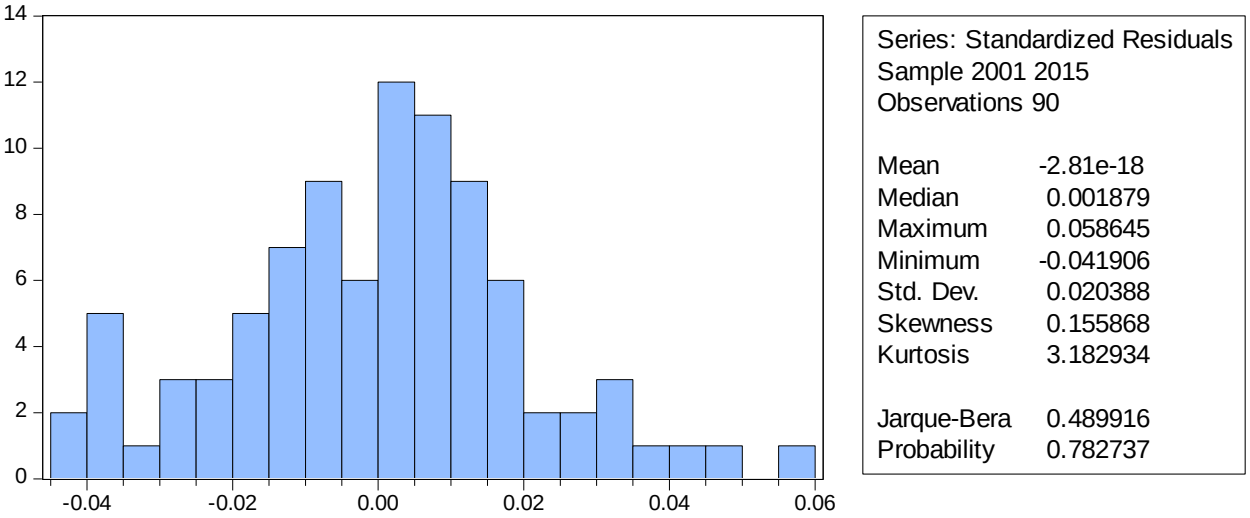
Source: E-view output

- ✓ **Normality**

One of the basic assumptions of the classical linear regression model (CLRM) is the stochastic/disturbance term is normally distributed. If this curve is like bell shaped distribution it can be concluded that the disturbance term is normally distributed with mean zero and constant variance one (i.e. N~(0, 1)). To get the residuals normally distributed first we have to make sure that each variables employed are found to be normally distributed. In this case, most of the variables are found to be normally distributed; a normal distribution is not skewed and is defined to have a coefficient of kurtosis 3. Skewness measures the extent to which a distribution is not symmetric about its mean value and kurtosis measures how far the tails of the distribution are. If the residuals are normally distributed, the histogram should be bell shaped.

The residuals scatter plots allow us to check whether the residuals should be normally distributed about the predicted dependent variable scores. As we can understand from the histogram and p-p plot depicted below, the residuals seem normally distributed and the residuals are distributed with a mean of 0 and standard deviation of 0.020. Thus, the model fulfills the assumption of being normally distributed.

Figure 4.1 Normality Test for Residuals: Bera-Jarque



Source: E-view output

4.3.3. Correlation Analysis

Correlation analysis is a way to indicate the degree to which two or more variables are associated with or related to each other. Each individual variable have negative or positive relationship with each other, Correlation coefficient between two variables ranges from +1 (i.e. perfect positive relationship) to -1 (i.e. perfect negative relationship). The most widely used bi-variant correlation statistics is the Pearson product-movement coefficient, commonly called the Pearson correlation which was used in this study.

As Brooks (2008), if it is stated that *y* and *x* are correlated, it means that *y* and *x* are being treated in a completely symmetrical way. Thus, it is not implied that changes in *x* cause changes in *y*, or indeed that changes in *y* cause changes in *x* rather, it is simply stated that there is evidence for a linear relationship between the two variables, and movements in the two are on average related to an extent given by the correlation coefficient.

Table 4.6 Correlation Matrix of Dependent and Independent Variables

	BUPM	DIR	EXR	INFR	LDR	LGR
NPL	-0.078922	0.813428	-0.035011	0.027279	0.059115	-0.079032

Source: E-view output

According to the above table business profit margin is negatively correlated with non-performing loan with the coefficient of -0.078922 and the linear relationship between BUPM and NPL is statistically different from zero/statistically significant. Yet, two microeconomic variables are positively correlated with NPL and one micro economic variable is negatively correlated. Non-performing loan is positively correlated with deposit interest rate with the coefficient of 0.813428 and statistically different from zero/statistically significant. Exchange rate is negatively correlated with the dependent variable (NPL) with the coefficient of -0.035011 and statistically different from zero/statistically insignificant. The last Microeconomic variable is inflation rate; its correlation coefficient is positive with the coefficient of 0.027279, but statistically insignificant/not different from zero.

Among the bank specific factors affecting non-performing loan, loan to deposit ratio and loan growth rate, LDR have positive significance correlation at 5% level but LGR have is negatively correlated with non nonperforming loan and it have a statistically significant at 1% significant level influence.

4.4. Result of Regression Analysis

As mentioned in the previous chapter, in this study a two step multiple linear regression equations were run. In the first step (general) regression equation, all the proposed independent variables (i.e., BUPM, DIR, EXR, INFR, LGR and LDR) were regressed with respect to the dependent variable (NPLs). To this end, only the significant variables that were found from the first step regression equation were regressed once again. Table 4.7 shows the first step regression results. The R square and the adjusted- R square statistics of the model were 94.61% and 93.52% respectively. These results are intended to show how well does the model containing the explanatory variables that can explain variations in the dependent variable and usually known as goodness of fit statistics (Brooks 2008).

Thus, the adjusted- R square of this study indicates that, 94.61% of the variation on the dependent variable (NPLs of EPCBs) was explained by the changes in the independent variables. In other words, the change in annual inflation rate, real interest rate, effective exchange rate, loan growth, loan to deposit ratio, and business profit margin collectively explain 94.61 of the variation in NPLs ratio of EPCBs. In contrary, the remaining 5.39 % of changes on the NPLs of ECBs were explained by other factors which were not included in the econometrics model of this study. Thus it can be concluded that, all the independent variables used in this study collectively, were good explanatory variables of NPLs in EPCBs. Thus, the null hypothesis of F-statistic (the overall test of significance) that the R square is equal to zero was rejected at 1% significance level (p-value =0.0), which enhanced the reliability and validity of the model.

Table 4.7 First (General) Regression Results

Dependent Variable: NPL
Method: Panel Least Squares
Date: 12/19/16 Time: 00:47
Sample (adjusted): 2001 2015
Periods included: 15
Cross-sections included: 6
Total panel (balanced) observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.003547	0.054686	0.064858	0.9485
BUPM	-0.078922	0.026455	-2.983279	0.0039
DIR	0.813428	0.402925	2.018809	0.0471
EXR	-0.035011	0.041378	-0.846123	0.4002
INFR	0.027279	0.024305	1.122368	0.2653
LDR	0.059115	0.029411	2.009938	0.0481
LGR	-0.079032	0.025991	-3.040725	0.0033
NPL(-1)	0.728825	0.049531	14.71458	0.0000
D102	0.081442	0.023655	3.442867	0.0010
D302	0.086476	0.023976	3.606804	0.0006
D106	0.064163	0.023233	2.761687	0.0072

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.946186	Mean dependent var	0.087222
Adjusted R-squared	0.935277	S.D. dependent var	0.082381
S.E. of regression	0.020958	Akaike info criterion	-4.732762
Sum squared resid	0.032504	Schwarz criterion	-4.288351
Log likelihood	228.9743	Hannan-Quinn criter.	-4.553550
F-statistic	86.73967	Durbin-Watson stat	2.140965
Prob(F-statistic)	0.000000		

Source: E-view output, from Financial statements of banks, MOFEC reports and own computation

Furthermore, the study examined the impact of bank specific macroeconomic and business characteristic factor on the level of NPL based on regression result of fixed Effect Model in Table 4.7 in terms of examination of coefficients of explanatory variables and significance level.

Through the examination of coefficients BUPM, EXR, and LGR had negative impact on NPL having a coefficient of -0.07, -0.03 and -0.07 respectively. This indicates that one unit change (increase/decrease) in, BUPM, EXR, and LGR can result a change on NPL by -0.05,-0.07 and -0.07 units in opposite direction respectively.

In terms of significance level (corresponding p-value), all explanatory variables had p-values of less than the selected significance levels (1%,5% and 10%) except for EXR and INFR. As shown in Table 4.6 BUPM, DIR, LDR, and LGR were the statistically significant factors affecting NPL of private commercial banks in Ethiopia. LGR and BUPM have statistically significant impact on NPL at 1% level. LDR and DIR have significant impact on NPL at 5% level, Whereas, INFR and EXR were statistically insignificant.

As mentioned earlier, only the significant variables(BUPM, EXR, DIR, and LGR) that were found in the first step regression analysis were regressed once again in order to ensure the reliability and the consistency of the first step regression results (both in terms of the coefficient estimates and the level of significance).

On another hand according to Brook, the dummy variables are used in the same way as other explanatory variables and the coefficients on the dummy variables can be interpreted as the average differences in the values of the dependent variable for each category, given all of the other factors in the model. In line to this to improve the chances of error normality the researcher use 3 dummy variable and the Dummy variables remove observations corresponding to „one-off" or extreme events that are considered highly unlikely to be repeated, and the information content of which is deemed of no relevance for the data as a whole. The study also adds lags i.e. considering the effect of data one year later, this also used to remove the non-normality distribution.

Table 4.8 Second Step Regression Results

Dependent Variable: NPL
Method: Panel Least Squares
Date: 12/23/16 Time: 21:52
Sample (adjusted): 2001 2015
Periods included: 15
Cross-sections included: 6
Total panel (balanced) observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.021207	0.024983	-0.848849	0.3986
BUPM	-0.095132	0.024952	-3.812553	0.0003
DIR	0.508342	0.281522	1.805695	0.0749
LDR	0.068801	0.023250	2.959121	0.0041
LGR	-0.083267	0.025903	-3.214538	0.0019
NPL(-1)	0.747034	0.036344	20.55476	0.0000
D102	0.074122	0.023387	3.169370	0.0022
D106	0.068969	0.023034	2.994180	0.0037
D302	0.080278	0.023703	3.386867	0.0011

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.943955	Mean dependent var	0.087222
Adjusted R-squared	0.934368	S.D. dependent var	0.082381
S.E. of regression	0.021105	Akaike info criterion	-4.736592
Sum squared resid	0.033852	Schwarz criterion	-4.347732
Log likelihood	227.1466	Hannan-Quinn criter.	-4.579781
F-statistic	98.46542	Durbin-Watson stat	2.151362
Prob(F-statistic)	0.000000		

Source: E-view output, from Financial statements of banks, MoFED reports and own computation

Table 4.8 shows the second step multiple regression results in which the insignificant variables (INFR and EXR) were dropout. Comparing the results of the two regression analysis, major differences were not found but the significance level is goes up from 5% to 1%. As shown in table 4.8, the R2 (94.39%) and the adjusted- R2 (93.43%) statistics in the second step regression were much closer to the R2 (94.39%) and the adjusted- R2 (93.43%) results obtained in the first step regression. Similarly, the results of Durbin-Watson statistics in the first and second step regression were 2.14 and 2.15 respectively.

Moreover, the sign and the magnitude of coefficient estimates in both the first and second step regression were almost similar. Based on the above discussions, it can be concluded that the results obtained from the first (general) regression analysis were consistence with the result of the second regression analysis, which enhanced the reliability and validity of the data used in the model.

4.5. Discussion on the Findings

The purpose of this section is to discuss the results obtained from the primary and secondary data using document review and semi-structured in depth interview. This section deeply discuss the relationship between NPLs and such factors as business profit margin, deposit interest rate, annual average exchange rate, and inflation rate, loan to deposit ratio, loan growth rate credit follow-up and business characteristic, as discussed earlier from eight variables, the secondary data of six variables are analyzed by using E-view software and the reset two variables are discussed using interview with respective parties. The subsequent discussions present the analysis of results in respect of those factors in an orderly manner.

4.5.1. Microeconomic specific factors

As shown earlier all the microeconomic variable are regressed by using E-view software, on the regression result micro economic variable have positive and negative impact on NPL, out of three micro economic variables deposit interest rate have significance effect but the rest two inflation rate and exchange rate have insignificance impact. The impacts of each microeconomic variable are discussed below.

Deposit Interest Rate (DIR) and Non-performing loan (NPL)

As discussed in the literature review most of the earlier researcher suggested that deposit interest rate have a positive correlation with NPL, but there argument was on the significance of its effect on the growth of NPL‟s. Beside to this our country Ethiopia deposit interest rate is set by National Bank of Ethiopia (NBE), yet during the research period (2000-2015), in our country interest rate is not significantly fluctuated and it is changed only for four times within range of minimum 0.03 up to maximum 0.06.

An Increase in deposit interest rate also increase the bank cost of fund, beside to this banks are exert additional fund on borrower in order to cover the cost. That means as interest rates rise, prudent borrowers are more likely to decide that it would be unwise to borrow, whereas borrowers with the riskiest investment projects are often those who are willing to pay the highest interest rates. Hence, higher interest rate leads to greater adverse selection that increases the likelihood that the lender is lending to a bad credit risk which ultimately increases the volume of banks NPLs.

This research result indicated that deposit interest rate has a strong positive coefficient and it is statistically significant at 5% significant level (0.0471). The coefficient value of the variable (i.e. 0.813428) indicated a percentage rise/decline in banks deposit interest rate, resulted in 1 times rise/decline in the NPL of banks in Ethiopia on the same direction. As per fofack (2005) the coefficient value may suggest that from all determinants of NPL the most important one is interest rate and also NPLs rate highly influenced by lending interest rate. Based on the result the hypothesis is not rejected, the result also consistent with the finding of the previous study of conducted by Nkusu (2011), Adebola, Yusuff & Dhalan (2011), Louzis, Valdis & Metaxas (2011).

Inflation Rate (INFR) and Non-Performing Loan (NPL)

According to the theories produce positive and negative effect on economy, in our case the effect of inflation is sever in manufacturing business, due to an increase in inflation the profit of the sector had been worsening, the adverse severely in the manufacturing industry. The surge in price of wide range of row material and in line with this the cost of production is goes up. However the domestic market consumer ability to pay is eroded by the inflation, based on this the profit of the sector had been decline and the paying ability of the business is eroded. On the other hand the decline of inflation has opposite effect on the above assumption.

On the other hand, since market frictions lead to the rationing of credit, credit rationing becomes more severe as inflation rises. As a result, the financial sector makes fewer loans; resource allocation is less efficient, and intermediary activity diminishes with adverse implications for capital/long term investment.

Nevertheless, in this study the coefficient estimate of inflation was positive but statistically insignificant at (P- value of 0.2653). The negative coefficient estimate of inflation (0.027274) indicates a positive association with NPLs. That means an increase in inflation rate; lead increase in NPLs. This result also asserts that the hypothesis is not rejected and consistent with the result of Khemria & Pash (2009) Fofac (2005), nukusu (2011).

Exchange Rate (EXR) and (NPL) Non Performing Loan

In this study the exchange rate is considered the value of birr exchange in to dollar, as shown earlier the implication of exchange is negative or positive effect on the NPL growth. The effect of it is based on the nature of the business, when there is appreciations of exchange rate export oriented firms are benefited. On the other, it can negatively affect the debt-servicing capacity of borrowers who borrow in foreign currency (import-oriented firms). Beside to this as per our country manufacturing sector trend, most of them are import oriented (machinery) but there is very weak trend in export. However, the sub sector considering in this study (food and beverage products industry and textile) row material is more domestic wise. When the value of exchange rate is goes up the purchasing value of row material is also raise however, there is not export and which is not compensated the exchange value and this erode the repayment capacity of loan.

More specifically, as the value of Ethiopian birr depreciated in terms of dollar, it can increase the competitiveness export-oriented Ethiopian firms in the international market. This due to the fact that, the operating cost of export-oriented Ethiopian firms was very less as compared to the international firms since the value domestic currency was very small in terms of foreign currency (dollar). This result was in accordance with the import substitution policy of Ethiopian government that encouraging export-oriented firms.

In this regard, EPCBs are providing loans primarily to export-oriented firms so as to encourage the export sector. Hence, the incentive for export-oriented firms can also make their debt servicing easier.

The finding of the result implies that there is an inverse relationship between exchange rate and the growth rate of non-performing loan. It implies that when the exchange rate is rising, the sector that import goods turn to using the domestic production. Moreover, the coefficient (-

0.035011) estimate of EXR was statistically insignificant. This implies that, an increase in EFEX (i.e., a depreciation of Ethiopian birr in terms of dollar); lead to a decrease in NPLs of EPCBs. The result also consistent with Zelalem, (2013) finding.

4.5.2. Bank Specific Variables

Loan to Deposit ratio (LDR) and Non Performing Loan (NPL)

It examines bank liquidity by measuring the fund that a bank has utilized in to loan from collected deposit. The coefficient sign of loan to deposit ratio shows that there is a positive relationship between banks nonperforming loan and loan to deposit ratio. Loan to deposit ratio had positive and statistically significant (p-value = 0.0481) at 5% significant level.

The result is in line with the research hypothesis which is based on the argument that when banks lending increase as compared to the deposits the level of NPL also increase. Because at the time of low loans to deposits ratio in order to earn more banks start lending even to the low quality borrowers and do not follow the standard loan allocation practices, which leads to the growth in NPLs. Therefore, the result implies that every one percent change (increase or decrease) in bank‟s loan to deposit ratio keeping the other thing constant has a resultant change of 5.91% on the nonperforming loan in the same direction. The result is consistent with Ferreira, C (2008), (Makri et al.2014), (Ranjan and Chandra, 2003).

Loan growth Rate

According to the previous discussion the growth of loan have a positive impact over the growth of NPL. They find of Amador et al. (2013) implies that abnormal credit growth over a prolonged period of time leads to an increase in banks‟ riskiness, accompanied by a reduction in solvency and an increase in the ratio of NPL to total loans. However when we come to our country trend, specifically the six Private commercial data implies that the loan disbursement is grown but the NPL rate in the research period is decline, i.e. through period of time the knowhow of the borrower is grown and the sector high portion is dominated by a few strong borrower. Beside to this the growth rate of loan is stagnant.

In line with this the relationship between loan growth and NPL have an inverse impact, the result of this research also implies that loan growth have negative correlation (coefficient -0.061655) and it have (0.0033) significance at 1%. The finding was consistent with previous studies of Pasha and Khemraj (2009), Jellouli et al (2009), and Vogiazas and Nikolaidou (2011), Zelalem Tsige (2013).

Credit Monitoring and Follow-up

As per the previous discussion this variable is covered by semi structured in-depth interview with the credit managers and senior loan officer in each six private commercial banks. As per the interview conducted with credit head managers and senior credit officer of selected EPCBs, in order to have information about the current practical perception of them regarding the determinant of NPL in EPCBs, the bank employees that manufacturing sector is the priority sector that has incentive from bank than other sector, regarding loan and foreign transaction.

As per the finding of the interview there are not separated personnel who work only in the manufacturing sector, even if there is priority to disburse loan to the sector but there is no special technique regarding credit follow-up and monitoring to the sector. According to the interview finding there is not separated organized information center to access to appraise credit financing of manufacturing sector, rather the analysis is done by credit portfolio management officer based on the data supplied by the borrower but in 3 banks considered in this study have credit review to the management supplied by risk management report, also based on the information supplied by borrowers. As per their discussion the information is more based on the borrower, due to this as per the researcher outlook the data is more biased rather it is better to have information that gather by the officer by their own.

In the view of credit manager, poor credit appraisal techniques on the part of credit/loan officers also account for some loans becoming delinquent. They explain this to mean that some loan officers lack the skills to adequately assess a credit proposition to reasonably determine their commercial viability or otherwise. In this sense, they accept some un bankable projects which eventually fail and repayment of the loan becomes sticky.

This study showed that the bank officers agreed that a loan defaults if the borrowers are admit by compromising the assessment conditions. The study also highlighted that if the bank has strong knowledge about the credit history of a borrower then this would lead to high loan quality. Furthermore the study also indicated that poor risk assessment can also lead to high NPLs. The five Cs (Character, Condition, Collateral, Capital and Capacity) are considered basic tools before lending. In case of failure to conduct adequate risk assessment would lead to missing any or all of the five Cs resulting in loan defaults.

The survey results showed that 92.7% of the respondents agreed that tight monitoring of loans enhance its quality. This has been verified in the literature as stated that regular and adequate monitoring of a loan would result in Non-Performing Loans. The Interview results also show that if a loan is poorly assessed then it can be avoided from default by adequate monitoring. The results also indicate that credit monitoring directly affects the occurrence of NPLs. However, Interview also indicates that if banks spend more on monitoring the loans then it is not guaranteed that level of NPLs may decrease.

As per the literature review and hypostasis derived earlier credit monitoring and follow-up have negative correlation with the growth rate NPLs. That means when the other thing is constant, the efficiency of the bankers is increase from the application of loan until the final loan repayment, then the quality of the loan gone be good. Beside to this the percentage of NPLs getting goes down but if it is the reverse the percentage of NPL have different implication. The finding is also consistent with, the previous studies expressed that the loans are more secured if the banks keep a continuous check on the borrowers. Agresti et al (2008) Salas and Saurina (2002), (Berger and DeYoung,1997). The result is also parallel with previous studies such as Deininger and Liu (2009); Papias and Ganesan (2009) and Olomola (2000) which found that loan monitoring is an important factor in increasing/decreasing loan repayment rate among borrowers.

4.5.3. Business Characteristic

Business Profit Margin with NPL

The regression result of fixed effect model in the above table 4.7 is consistent with the hypothesis developed in this study. The study hypothesized that there is a negative association between business profit margin and NPLs of banks. Model in the above table 4.7 indicates statistically significant positive impact of business profit margin on NPLs in Ethiopia. This positive sign indicates the same flow relationship between business profit margin and NPLs. It implies that for one unit change in the manufacturing business profit margin, keeping other thing constant had resulted 7.8% units change on the levels of NPLs in the same direction.

The finding of this study confirms the finding of Mpunga (2004), the main reason for this positive association between business profit margin and NPLs is: First, when the profit of business is increase the paying ability to outstanding loan had been grown, The result is also parallel with the result found by Nannyonga (2000); Onyenucheya & Ukoha (2007); Oke et al., (2007); Von Pischke (1991) who found that borrowers who get higher profit, have higher chance of repaying their loans compared to borrowers who declare less profit.

Nature/Characteristic of the Business with NPL

This variable also the second variables that used a primary data through semi structured in-depth interview in order to know the actual perception of the personal in manufacturing sector regarding the determinant of non-performing loan in Ethiopian Private commercial banks. The finding of the interview in each sub sector have different implies that the challenge that impair the growth of manufacturing sector is import goods and distribute it in the country market is lest cost and it is easy in every circumstances. Beside to this the production cost is very high and lack of access to market compared to import.

On the other hand the manufacturing sector managers suggested that, the reason to be default in manufacturing sector is the impact of banks policy and procedure, after the loan is disbursed the grace period given by the bank is only 1 year, but as per nature of the business the machinery of the companies planting is take 1 or more year, moreover the grace period is not enough to generate profit and to repay back the loan.

Generally as per the interview result the cause of loan default enumerate by the clients: Late disbursement of the loan, business failure, unfavorable payment terms, high interest rate, inadequate loan sizes, and unforeseen contingencies. The manufacturing companies manager discuss that poor appraisal, lack of monitoring or improper monitoring, improper client selection, inadequate skills of clients, poor business practices, and macroeconomic factors, poor management styles among others, negligence and improper appraisal by credit officers are some of the causes of loan default.

This indicates that as the borrower takes loans that will be repaid within the medium term of repayment, his/her capacity to repay his/her loan successfully will increase. The marginal effect indicates that as the borrower takes a loan to be repaid within the medium repayment period, On another hand the interview result indicates that wrong timing of credit delivery and nature of the sectors; borrowers who engage in the service-giving sector have high probability of repaying their loan successfully relative to borrowers who engage in manufacturing industry, agriculture and agro processing sectors.

Even if there is an incentive to the sector but Sometimes, there is delays in approving loans being requested by the customers, some business opportunities are lost before the loan amount is disbursed to the customers. When this happens and the disbursement is done in cash, because money has alternative uses, the borrowers tend to misuse these funds or at best use them for wrong or unplanned business ventures which in most cases fail to perform well. In the end they are unable to repay the loan.

Manager of the manufacturing sector implies that, sub sector have an opportunity like an incentive regarding loan & foreign currency, it have also an opportunity supplied by government. However, there are also challenges from different source like there is still scarcity of power; there is also lack of both domestic and international market, inadequate marketing opportunities most dominant cause of NPLs. Their reason was that as a result of inadequate market, the wares get perished or produce suffer post losses leading to inability to repay loans. In both sub sector there is scarcity in well trained employees and this scarcity drop down the profit of the sector moreover the survivor of the company and the company can‟t able to cover its loan.

As per the interview conducted with the sector managers and senior credit officer of selected EPCBs, business characteristic is one of the major factors that can affect Ethiopian banks NPLs negatively. The result also consistent with the finding of (Embiale Bitew October 2015), Munene, H. Nguta Guyo, S. Huka, (Kefyalew Endale, 2012)

Table 4.9: Summary of Regression Results

Independent Variable	Hypothesis Derived	Relationship With NPL	Estimated Impact	Significance Test
Business Profit Margin	Negative	Negative	0.07 increase/decrease NPL Growth Rate in opposite direction	Statically significant
Deposit Interest Rate	Positive	Positive	0.81 increase/decrease NPL growth rate in the same direction	Statically significant
Exchange Rate	Positive	Negative	0.03 increase/decrease NPL in the opposite	Statically insignificant
Loan to Deposit Ratio	Positive	Positive	0.05 increase /decrease NPL in the same direction	Statically significant
Loan Growth Rate	Positive	Negative	0.07 increase/increase NPL in opposite direction	Statically significant
Inflation Rate	Positive	Positive	0.02 increase/decrease NPL in the same direction	Statically insignificant
Credit monitoring and Follow-up	Negative	Negative	When the efficiency of management increase the growth rate NPL decrease or vice versa	significant
Business Characteristic	Positive	Positive	Have Negative impact on NPL	significant

Source: Survey Outcome and Own Computation

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5. Introduction

The previous chapter presented the analysis of the findings obtained from different data sources that regressed by E-view and personal computations. The purpose of this chapter is to discuss the conclusions and recommendations based on the findings. Accordingly, the chapter is organized in two sections, the first section, 5.1 presents the conclusions of the study. And, the second section, 5.2 presents the recommendations that provided based on the findings of the study and finally section 5.3 present future research directions.

5.1. Conclusions

The broad objective of this research was to investigate bank specific, macroeconomic and business characteristic specific determinants of NPLs in EPCBs. To achieve this broad objective, the study used mixed methods research approach. More specifically, quantitative research approach along with survey design (structured review of documents) was dominantly used. In addition, to have a better insight and to gain a richer understanding about the research problem, the quantitative method was supplemented with the qualitative method (semi structured interviews).

To this end, the collected data from a sample size of six Ethiopian commercial banks over the period of 2000 to 2015 were analyzed using descriptive statistics, correlation matrix and multiple linear regression analysis. The analyses were made in line with the stated hypotheses and specific research questions formulated in the study. In doing so, previous studies on determinants of bank‟s NPLs have been reviewed and as per the literature NPLs of banks‟ usually expressed as a function of internal and external determinants.

Accordingly, in this study, three bank specific variables (i.e., loan growth rate, Loan to deposit ratio and credit follow-up and monitoring) and three macroeconomic variables (i.e., inflation rate, deposit interest rate and exchange rate) and two borrower characteristic (business profit margin and nature of business) were included. Consequently, the empirical findings of this particular study suggested the following conclusions:

According to the result of bank specific variables, loan growth rate (LGR), and loan to deposit ratio were found to be a major determinant of NPLs in EPCBs with 1% and 5% significance level respectively. Particularly, according to the loan officer perception credit follow-up and monitoring also have a significant relationship with the NPL. The findings also suggested a negative relationship among loan growth of a bank and NPLs of EPCBs which was inconsistent with the prior expectation. Hypothesis that banks which allocate adequate budget to screening loans, appraising collateral, and monitoring and controlling borrowers after loans disbursement resulted significant impact on volume NPLs.

Second, with respect the macroeconomic variables, inflation rate and effective exchange rate were found to be statistically insignificant determinants of NPLs in EPCBs. In particular, exchange rate had a negative association with the levels of NPLs. The findings also suggested a significant the positive relationship among deposit interest rate and NPLs of EPCBs which indicates whenever there was an increase in deposit interest rate, the bank need additional income loan to cover the cost paid to deposit, due to this the NPL growth rate is goes up. In addition, the effective exchange rate had also a negative association with NPLs of Ethiopian private commercial banks. This implies the depreciation of Ethiopian birr in terms of dollar reduced the volume of NPLs reported by Ethiopian banks through increasing the competitiveness of export- oriented Ethiopian firms in international market and it can also increase the monopolistic power of large importers of the country by getting out of market those small and medium importers. Hence, this conditions increase the debt servicing capacity of borrowers (both import and export-oriented).

Third, as the interview suggested, other internal factors such as absence of adequate man power, lack of comprehensive studies on the credit applicants, lack of follow-up on the borrower's activities or failure to follow up the collateral provided by the borrowers were also the major internal determinants of NPLs in ECBs. In addition, factors related to the borrowers such as providing false information to the bank, using the loan for other purposes that are undesirable from the banks' point of view (fund diversion), willful default and operational losses of borrower were also the determinants of NPLs in ECBs.

Lastly, the results of business characteristic the business profit margin have significant impact on the growth rate NPLs. When the manufacturing sector income is increase the paying ability also goes up and the growth rate of NPLs also at increasing rate. The nature of the business have also great impact on the loan repayment of the manufacturing sector, The manufacturing business is more affected by the external force, like suppliers the set up of the domestic and foreign market and also the government policies have a great impact on the development of the sector. The development of infrastructure has a core role on the growth of the sector. However, the infrastructure of the country has an appreciation but still is not well enough with the demand.

5.2. Recommendations

Based on the findings of the study the following possible recommendations were forwarded: Loan growth, business profit margin, loan to deposit ratio and deposit interest rate were the significant drivers of NPLs in Ethiopian private commercials banks. Hence, focusing and reengineering the institutions alongside these indicators could reduce the probability of nonperforming loans in Ethiopian commercial banks.

As per the interviewees, borrowers related factors (such as fund diversion, willful default and providing false information) and internal factors (such as lack of comprehensive studies on the credit applicants and lack of follow-up on the borrower's activities) were quite important determinants of NPLs in Ethiopian private commercial banks. Thus, Ethiopian private commercial Banks that were considered in this study should put in place a energetic credit process that would encompass issues of proper customer selection, monitoring and follow up and clear recovery strategies for sick loans.

Regarding the borrower characteristic of the manufacturing firms the nature of the business has great role on the payment capacity of the companies; in line with this the study recommended that, still import and deliver products to domestic consumer dominantly control the market, yet the country policy regarding to balance import and export need to more improvement. Beside to this the manufacturing companies can to improve their profit by using both domestic and international market. The private commercial banks give only one year grace period for repayment, based on the nature of manufacturing industry the profit is increase gradually, so the bank‟s policy regarding grace period also need improvement for the sector.

Finally, the finding of the study implies that nature of the business (borrower specific variable) is a major determinant of non-performing loan, followed by bank specific variables. However, microeconomic variables have not significance impact on non-performing loan of manufacturing companies except deposit interest rate. Therefore, the designated parties (government, the company‟s manager and the private banks) need to improve their policy to balance import and export and banks also need to improve their policy regarding risk assessment and credit follow-up and monitoring techniques‟.

5.2. Future Research Directions

This research tried to meet the gap between the existing literatures (that are mentioned in chapter one and two), Even if there are so many bank specific, macroeconomic variable and borrower specific variable the researcher only see three banks specific variable (Loan to deposit ratio, credit follow-up and loan growth rate and three macroeconomic variables (inflation rate, deposit interest rate and exchange rate) and two borrower specific variables (nature of business and business profit margin). Hence, there are other variables other than the above ones that can determine banks nonperforming loan, like government policy, credit terms and policy of the bank. On the other hand import and export sector also the second sector that face none performing loan, so other researchers can to investigate the determinant of import and export loan repayment performance.

Reference

Abreham, G., (2002), *Loan repayment and its determinants in Small scale enterprises financing in Ethiopia: case of private borrowers around zeway area* Addis Ababa University.

Admas John, T.A. Khan Hafiz, Raeside Robert and White David (2007): *Research Methods for Graduate Business and Social Science Students.*

Ahlem Selma.M. Fathi J. (2013): Micro and Macro Determinants of Non-performing Loans: International Journal of Economics and Financial Issues Vol. 3, No. 4, 2013, pp.852-860

Anisa, U., (2015). *Determinants of nonperforming loan: an empirical study on commercial banks of Ethiopia,* Addis Ababa University.

Ayalew, T.,(2009). *Legal Problems in Realizing Non-Performing Loans of Banks in Ethiopia*, Addis Ababa University.

Barth, J., Lin, C., Lin, P. & Song, F. (2008*). Corruption in bank lending to firms: cross country micro evidence on the beneficial role of competition and information sharing*. Journal of Financial Economics, 91: 361-388.

Berger, A.N., R. Demirguc-Kunt, R. Levine and J.G. Haubrich (2004). *Bank concentration and competition: An evaluation in the making. Journal of Money, Credit and Banking*, 36(3): 433-451.

Bloem, AM & Freeman, R. (2005). *The Treatment of Nonperforming Loans in Macroeconomic Statistics*", IMF Working Paper WP/01/209, International Monetary Fund.

Brooks, C (2008). *Introductory Econometrics of Finance*, 2nd ed., the ICMA Center, University of Reading, CAMBRIDGE University press.

Caprio, G & Kilngebiel, D. (2002). *Episodes of Systemic and Borderline Financial Crisis*", World Bank (Unpublished)

Collins, Ng"etich J and Wanjau K (2011). *The effects of interest rate spread on the level of Non-performing assets: A case of commercial banks in Kenya*. International Journal of Business and Public Management Vol. 1.

Creswell, J W (2003*). Research design: qualitative, quantitative and mixed methods approaches, Sage Publications*, California, 2nd ed.

Creswell, J. (2009). *Quantitative, and Mixed methods approaches (3rd edition)* India: Sage Publication Inc, New Delhi.

DAB Development Research and Training Paper PLC. (2015), *an overview of Ethiopian manufacturing sector,* Addis Ababa Chamber of Commerce and Sectoral Association

Daniel T. (2010). *Issues of non-performing loan: Privately owned commercial banks in Ethiopia.* Addis Ababa University.

Farhan Muhammad, Sattar Ammara, C. Hussain Abrar, Khalil Fareeha (2012): *Economic Determinants of Non-Performing Loans: Perception of Pakistani Bankers European;* Journal of Business and Management, Vol4, No.19,

Fawad Ahmad and Taqadus Bashir. (2013). *Explanatory Power of Bank Specific Variables as Determinants of Non-Performing Loans:* Evidence from Pakistan Banking Sector World Applied Sciences Journal 22 .

Federal Negarit Gazeta., 2012. *Proclamation on Investment*, No.63.

Ferreira, C.(2008). *The banking sector, economic growth and EU integration*. Journal of Economic Studies, 35(6): 512-527.

Fofack, H. (2005). *Nonperforming loans in Sub-Saharan Africa: Causal Analysis and Macroeconomic implication*" *World Bank Policy Research Working Paper 3769,* //econ.worldbank.org.

Gujarat, DN(2004). *Basic Econometric, 4th edn*., McGraw–Hill, USA.

Habtamu Negussie Ayele., 2012. Determinants of Bank Profitability An Empirical Study on Ethiopian Private Commercial Banks.

Industrial Development Strategic Plan of Ethiopia (2013-2015).

Jimenez G and Saurina J (2005). "*Credit cycles, credit risk, and prudential regulation*", Banco de Espana, May

Jimenez G. and J. Saurina (2006). "*Credit Cycles, Credit Risk, and Financial Regulation*" *International Journal of Central Banking*, vol. 2, pp 65-98.

Joseph, Mabvure T , Edson G, Manuere F, Clifford M and Michael K , (2012). *Non Performing loans in Commercial Banks: A case of CBZ Bank Limited In Zimbabwe,* Interdisciplinary journal of contemporary research in business Institute of Interdisciplinary Business Research, Vol 4, No 7.

KhanFaisal, Ahmed Anuar Melati., C.Guan Lim and Khan Hashim (2011): *Determinants of Bank Profitability in Pakistan; Case Study of Pakistani Banking Sector*; World Applied Sciences Journal 15 (10): 1484-1493, ISSN 1818-4952.

Kefyalew Endale and Tsegabirhan Woldegiorgis 2010. *Determinants of Export Intensity in Manufacturing and Non-Traditional Primary Exporters of Ethiopia, Draft Paper Presented at The School of Economics*, Addis Ababa University.

Khemraj, T., & S., Pasha, (2009). "*The determinants of non-performing loans: an econometric Case study of Guyana."* Presented at the Caribbean Centre for Banking and Finance, annual Conference on Banking and Finance, St. Augustine, Trinidad.

Louzis D. P., A. T. Vouldis and V. L. Metaxas (2010). "*Macroeconomic and bankıspecific determinants of nonıperforming loans in Greece:* a comparative study of mortgage, business and consumer loan portfolios." Bank of Greece, Working paper no. 118.

Mehari, M 2012, „*credit risk management in Ethiopia banking industry*", Addis Ababa University.

Micco, A, Panizza, U and Yanez, M2004, „*Bank Ownership and Performance*", Inter-American Development Bank, working paper.

National bank of Ethiopia 20010/11, „Annual report", National Bank of Ethiopia, Addis Ababa, Ethiopia

Nkusu M (2011). *Nonperforming Loans and Macro financial Vulnerabilities in Advanced Economies,* IMF Working Paper No 11/161.

Oluwafemi, 2014 Impact of Bank Credit on the real sector, Global journal of business research, Volume 8, No,3.

Podpiera, J., Weill L.(2008). *Bad Luck or Bad Management? Emerging Banking Market* Experience. Journal of Financial Stability Vol, 4, 135-148

Podpiera, R.(2006). *Does compliance with Basel Core Principles bring any measurable benefits?*. IMF Staff Paper, 53(2): 306-325.

Rajan, R1994, „Why Bank Credit policy Fluctuate: A theory and Some Evidence", *Quarterly Journal of Economics*, Vol.109, No. 2, PP.399-441.

Raphael Espinoza and Ananthakrishnan Prasad (2010). *Non-performing Loans in the GCC Banking System and their Macroeconomic Effects.* IMF Working Paper. WP/10/224.

Pasha,S and Khemraj, T 2009," *The determinants of non-performing loans: an econometric case study of Guyana*", The Guyana Bank(Unpublished)

Rinaldi L, Sanchis-Arellano A (2006), *Household Debt Sustainability: What Explains Household Non-performing Loans?* An Empirical Analysis, ECB Working Paper.

Samuel k, (2012). Determining *the Causes and Impact of Nonperforming Loans on the Operations of Microfinance Institutions : a case of sinapi aba trust,* Kwame Nkrumah University of Science and Technology.

Swamy, V 2012, „Impact of macroeconomic and endogenous factors on non performing bank assets", *The International Journal of Banking and Finance,* Vol.9, No.1, PP.27-47

Sinkey, JF and Greenawlat, MB1991, „Loan-Loss Experience and Risk-taking Behaviour at Large Commercial Banks", *Journal of Financial Services Research*, Vol.5, No 1, PP. 43

Salas, V. and J. Saurina (2002). *Credit Risk in Two Institutional Regimes: Spanish Commercial and Savings Banks*. Journal of Financial Services Research, 22(3): 203-224.

Saunders and cornett (2007). *Financial Markets and Institutions; an Introduction to the Risk Management Approach.* McGraw Hill.

Tihitina Ayalew(2009). *Legal Problems in Realizing Non-Performing Loans of Banks in Ethiopia.* Addis Ababa University.

Wondimagegnehu N (2012). Determinants *of Non Performing Loans: The case of Ethiopian Banks*,University of South Africa.

World Bank (2015), overcoming constraints in the manufacturing sector. World bank, Washington, dc.

Zelalem T (2013). *Determinants of Non-performing Loans*: *Empirical Study on Ethiopian Commercial Banks*, Addis Ababa University.

APPENDICES

Interview guide lines for Credit head manager and credit officer

1. Does the select prioritized projects that are most vital within the priority sector or finance all priority sectors credit request?
2. Do you have special incentives for borrowers that involve economically influential manufacturing sector?
3. Does the bank have specialized man power, who have better knowhow for credit financing and supporting of customers involved in manufacturing sector?
4. Does the bank have organized information center to access to appraise credit financing of manufacturing sector appropriately?
5. Is there any credit assessment technique, in your bank to know your customer risk level?
6. After disbursing the loan how to follow up, your customer until the final repayment?
7. What are basic challenges that the bank has faced while financing manufacturing sector?
8. What are the benefits the bank gets by financing manufacturing sector as priority sector?
9. Do you think that financing of manufacturing sector as priority sector has achieved its intended target?
10. Does the bank satisfies satisfy the demand for manufacturing sector credit request?
11. At last what is your opinion the reason for non performing loan in manufacturing sector?

Interview guide lines for the manufacturing company's administration

1. Do you fill that the nature of business had been the major case of to be default? Even if the sector has a special incentive in tax and foreign exchanges but sector is faced non performance loan at a primary level, what does u believe behind it?

2. Does the supply of raw materials adequately available for producers in the manufacturing sector/sub-sector and meet their production capacity? And any problems related to supply and quality of raw materials such as supplier‟s capacity and consistency, handling, government rules and regulations, marketing etc…?

3. Is there adequate man power for technical and managerial positions in the manufacturing sector/sub-sector?

4. What are the market opportunities and challenges in the sector/sub-sector?

5. Is there any government rules, regulations and policies that hinder the firm‟s in sector/sub-sector to operate in full capacity or for further to develop performance and further expansion?

6. Does the bank incentives and support for firms in the manufacturing sector/ sub-sector effective and adequate? If not, what are the reasons and solutions?

First (General) Regression Results

Dependent Variable: NPL
Method: Panel Least Squares
Date: 12/19/16 Time: 00:47
Sample (adjusted): 2001 2015
Periods included: 15
Cross-sections included: 6
Total panel (balanced) observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.003547	0.054686	0.064858	0.9485
BUPM	-0.078922	0.026455	-2.983279	0.0039
DIR	0.813428	0.402925	2.018809	0.0471
EXR	-0.035011	0.041378	-0.846123	0.4002
INFR	0.027279	0.024305	1.122368	0.2653
LDR	0.059115	0.029411	2.009938	0.0481
LGR	-0.079032	0.025991	-3.040725	0.0033
NPL(-1)	0.728825	0.049531	14.71458	0.0000
D102	0.081442	0.023655	3.442867	0.0010
D302	0.086476	0.023976	3.606804	0.0006
D106	0.064163	0.023233	2.761687	0.0072

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.946186	Mean dependent var	0.087222
Adjusted R-squared	0.935277	S.D. dependent var	0.082381
S.E. of regression	0.020958	Akaike info criterion	-4.732762
Sum squared resid	0.032504	Schwarz criterion	-4.288351
Log likelihood	228.9743	Hannan-Quinn criter.	-4.553550
F-statistic	86.73967	Durbin-Watson stat	2.140965
Prob(F-statistic)	0.000000		

Table : Summary of Private Banks Loans and Advances in all type of loan (in millions of birr)

NO.	TYPE OF LOANS & ADVANCES	NAME OF Banks	YEAR															TOTAL
			2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
1	Agricultural production -term loan	AIB	106	124	176	207	212	296	434	580	629	623	724	916	1,266	1,773	2,110	2,870	**13,048**
		DB	127	179	224	27	367	513	727	917	1,009	1,023	1,162	1,430	1,869	2,038	2,168	2,651	**16,682**
		BOA	148	186	207	227	289	284	451	530	648	623	726	763	896	1081	1164	1358	**9582**
		WB	138	161	186	207	227	230	366	496	540	486	570	669	820	1079	1059	1397	**8631**
		UB	81	90	114	115	151	136	231	324	428	495	602	754	940	1083	1166	1578	**8288**
		NB	115	136	176	222	218	261	339	418	486	511	587	636	853	1045	1244	1586	**8832**
2	Manufacturing production	AIB	153	178	253	297	308	425	617	828	905	895	1,038	1,315	1,816	2,544	3,028	4,119	**18,719**
		DB	180	258	322	395	527	736	1,044	1,316	1,446	1,469	1,666	2,051	2,680	2,924	3,111	3,803	**23,934**
		BOA	212	266	297	326	414	407	648	761	930	894	1041	1094	1286	1552	1670	1949	**13,746**
		WB	198	231	266	297	326	331	526	711	774	697	816	960	1177	1548	1519	2004	**12,382**
		UB	116	129	164	165	217	196	331	465	614	710	862	1081	1348	1555	1673	2264	**11,891**
		NB	164	196	253	318	313	374	487	600	698	733	840	913	1224	1499	1785	2275	**12,670**
3	Building & construction - term loans	AIB	125	149	207	243	249	348	505	679	739	732	849	1,076	1,486	2,081	2,477	3,370	**15,316**
		DB	127	213	263	323	431	60	854	1,07	1,183	1,201	1,363	1,678	2,193	2,392	2,546	3,112	**19,582**
		BOA	173	218	243	266	339	333	530	622	761	731	851	895	1052	1270	1366	1594	**11,247**
		WB	162	189	218	243	266	271	430	582	634	570	668	786	963	1266	1243	1639	**10,130**
		UB	95	106	134	135	177	160	271	381	502	581	706	885	1103	1272	1369	1852	**9729**
		NB	134	160	207	261	256	306	398	491	571	599	687	747	1001	1227	1460	1861	**10,367**
4	Merchandise	AIB	51	59	84	99	101	141	205	277	301	298	346	440	605	848	1,009	1,373	**6,241**
		DB	60	86	107	131	175	245	348	438	482	489	555	685	893	974	1,037	1,267	**7980**
		BOA	71	89	99	109	138	136	216	254	310	298	347	367	429	517	557	650	**4584**
		WB	66	77	89	99	109	110	175	237	258	232	272	322	392	516	506	668	**4129**
		UB	39	43	55	55	72	65	110	155	205	237	287	362	449	518	558	755	**3966**
		NB	55	65	84	106	104	125	162	200	233	244	280	306	408	500	595	758	**4225**
5	Others	AIB	30	32	46	54	55	77	116	152	164	162	188	239	330	462	550	748	**3,405**
		DB	30	46	60	74	95	136	192	239	262	269	304	376	487	534	567	693	**4348**
		BOA	30	48	54	59	75	74	118	138	169	163	189	199	234	282	304	354	**2491**
		WB	30	42	48	54	59	60	96	129	141	127	148	175	214	281	276	364	**2245**
		UB	30	24	30	30	39	36	60	85	112	129	157	197	245	283	304	412	**2171**
		NB	30	36	46	58	57	68	89	109	127	133	153	166	223	273	324	414	**2304**
	TOTAL		**150**	**196**	**238**	**275**	**325**	**374**	**555**	**700**	**811**	**821**	**951**	**1113**	**1403**	**1653**	**1775**	**2237**	