ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DETERMINANTS OF CREDIT RISK MANAGEMENT EFFECTIVENESS: (IN THE CASE OF ETHIOPIAN PRIVATE COMMERCIAL BANKS)

BY

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DECLARATION

I the undersigned, declare that this thesis is my original work prepared under the guidance of Tilahun Teklu (PhD). I confirm that all the sources of materials used for the thesis have been acknowledged and this thesis in any way has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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Endorsement

This is to certify that Tilahun Mitiku Mulu has carried out his research work on the topic, "Determinants of Credit Risk Management Effectiveness in Private Commercial Banks in Ethiopia" for partial fulfillment of degree of Master of Science in Quality Management and Organizational Excellence at Addis Ababa University College of business and Economics. This study is an original work and was not submitted earlier for any degree either at this University or any other University. It complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

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Examiners' Approval Form

As members of the board of examiners, we examined this thesis entitled “Determinants of Credit Risk Management Effectiveness in Private Commercial Banks in Ethiopia” by Tilahun Mitiku. We hereby certify that the thesis is accepted for fulfilling the requirements for the award of the degree of Master of Science in Quality Management and Organizational Excellence.

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Acronyms and Abbreviations

RIASSANALZ	Risk Assessment and Analysis
CREDRISMGT	Credit Risk Management Effectiveness
RISEVALUATN	Risk Evaluation
RISIDETFN	Risk Identification System
RISMONTR	Risk Monitoring System
RIUNDSTAD	Risk Understanding
NBE	National Bank of Ethiopia

Abstract

Risk management involves a set of tool and models for measuring and controlling risk. There is a research gap in risk understanding, risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation determinants in the Ethiopian context in general and in the study area in particular. The main objective of this study is to examine determinants of credit risk management effectiveness *in Ethiopian private commercial banks in Addis Ababa city. A quantitative research and explanatory research method is used. The data was collected using self-administered close ended structured questionnaires from 166 respondents by using nonrandom sample technique called convenience sampling technique. Descriptive statistics and multiple linear regressions were used for analysis. Assumptions are tested to check the appropriateness of multiple linear regressions for analysis. The descriptive statistics result of (risk understanding, risk assessment and analysis, risk monitoring system, and risk evaluation) mean score is high which is above the mean score of point 3 and risk identification system has medium value. The multiple regression analysis result revealed that the four predictors risk understanding, risk identification system, risk assessment and analysis, and risk evaluation have significant and positive coefficient of beta values indicating that they have positive effect on credit risk management effectiveness under the study while one predictor risk monitoring system has insignificant alpha valve which indicated that it has no any effect on credit risk management effectiveness under the study. It is recommended that the managers of each bank had better to maintain current established risk management techniques and that employees are expected to perceive in the bank; the management of each bank also set up proper risk identification mechanism to minimize occurrence of high risk in the bank; they had better asses and analysis their effectiveness related to loan and repayment performance in the bank ; each private commercial bank in Ethiopia had better continue the timely evaluation of financial risks to find out measurements to be taken in order to maintain safe balance of loan in the bank.*

***Key Words**: Credit risk management* effectiveness, *Risk understanding, risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation*

CHAPTER ONE

Introduction

This chapter presented the background of the research, the statement of the problem, objectives of the study, research questions and significance of the study. The chapter further presents scope of the study and organization of the study.

1.1 Background of the study

Risk management is explained as the performance of activities intended to minimize the negative impact (cost) of uncertainty (risk) regarding possible losses (Schmidt and Roth, 1990). Risk management also defined as a systematic process for the identification and evaluation of pure loss exposure faced by an organization or an individual, and for the selection and implementation of the most appropriate techniques for treating such exposure. Bessis (2010) also adds that in addition to it being a process, risk management also involves a set of tool and models for measuring and controlling risk.

According to Fatemi and Glaum (2000), bank is the most important financial institution in the economy. Financial institution plays an energetic role in the economy by providing means of payment and in mobilizing resources. The economic development of a country depends on the development of banking sector to a great extent. The support of banking sector in contemporary economy is increasing day to day because this sector in the long run contributes to run the wheel of development in a more dynamic way. The expanding and an essential role of banking sectors have made banking business more complex and competitive (Brenda, 2013).

Credit creation is the main income generating activity for the banks. However, this activity involves huge risks to both the lender and the borrower. When financial institutions issue loans, there is a risk of borrower default. When banks collect deposits and lend them to other clients, they put clients' savings at risk (Bessis, 2003).

Risk is a function of the likelihood of something happening and the degree of losing which arises from a situation or activity. Losses can be direct or indirect. For example, an earthquake can cause the direct loss of buildings. Indirect losses include lost reputation, lost customer

confidence, and increased operational costs during recovery. The chance of something happening will impact the achievement of objectives (Basel Committee on Banking Supervision 2005).

Khalid and Amjad (2012) conducted a research on the risk management in Islamic banking in Pakistan. The researcher used the same model suggested on credit risk management practices. The results indicated that Islamic banks are somewhat reasonably efficient in managing risk where understanding risk and credit risk analysis, are the most influencing variables in risk management practices under the study.

Empirical studies made by Khan and Ahmad (2001) in Islamic banks and the results of survey of risk perception in different modes of financing shows that risk level is considered elevated. The high perception of risks may be an indication of the low degree of active risk management due to the absent of risk control through internal processes and control, especially in the case of operational risk. Also, Noraini (2005) indicated that credit risk in Islamic banks perceived to be the most important risk. Finally, from the study, it is suggested that risk identification is one of the important step of risk management practices.

Jackson-Moore (2007) suggests that bank need to start collecting data, and there can be significant advantages in pooling information and using common definitions, standards, and methodologies for operational risk which is argued can lead to significant losses in all financial institutions. Finally, it is found that risk analysis and assessment particularly on measuring risk in banking institutions is an important for risk management practice which has a positive effect.

Risk monitoring can be used to make sure that risk management practices are in line and proper risk monitoring also helps bank management to discover mistake at early stage (Al-Tamimi and Al-Mazrooei, 2007). Monitoring is the last step in the corporate risk management process (Pausenberger and Nassauer, 2002). According to them, control has to be established at different levels. The control by the management board will not be enough to ensure the effective functioning of the risk monitoring system, because the management board members do not have time on their hands to exercise extensive control. Hence, the management board will install an independent unit to complete the task of internal supervision. This task is the responsibility of the internal audit. Also, the supervisory board is obliged to control the risk management process. The supervisory board is supported by the auditor. If the auditor discovers a defect, he will have

to inform the supervisory board and the management board. Finally, the shareholders of the corporation can use their rights to demand information in order to judge the efficiency of the risk management system. The director's report enables the shareholders to assess the status of the corporation knowledgeably and thoroughly.

Nagarajan (2001) in his study of risk management for financial institutions in Mozambique found that risk management is a dynamic process that could ideally be developed during normal times and tested at the wake of risk. It requires careful planning, commitment and risk evaluation on part of all stakeholders. It is encouraging to note that it is possible to minimize risks related losses through diligent management by building robust institutional infrastructure with skilled human resources and inculcating client discipline, through effective coordination of stakeholders. Finally, the finding indicated that better evaluation system has resulted significance effect on the credit risk management practices.

Although there are few previous studies in the area assessment of credit risk management effectiveness in developed countries, there is a research gap in level of risk understanding, risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation in the context Ethiopian private commercial banks.

Considering the above point of view, this study attempts to fill the existing empirical research gap in the study context by investigating (level of risk understanding, risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation) of credit risk management effectiveness in Ethiopia private commercial banks evidence from Addis Ababa city.

1.2 Statement of the problem

Credit risk is the risk that obligations will not be repaid on time and fully as expected or contracted, resulting in a financial loss or non-Performing loans. The borrower may fail to meet the terms of the underlining loan agreement (Seifu, 2013). It is clear that banks consciously take risk as they perform their role of financial intermediation in the economy. Consequently, they assume credit risk and managing the risks is essential for their survival and prosperity. Losses from a single loan or a material breakdown in controls can eliminate the gain on many other transactions (National Bank of Ethiopia, 2010).

An assessment of credit helps the banker to ensure selection of right type of loan proposals and right type of borrower. For selecting the borrower, security should not the only thing to be relied up on. Therefore, responsibilities of the bankers are to investigate the client from different view point. i.e. the strength and weakness of the client so that the client will be able to repay the bank loan as repayment with profit. To prevent future financial crises, it is necessary to improve the borrowers‟ financial literacy, the lenders‟ process of transparency and to better assess loan product affordability & suitability (Gestel, &Baesens, 2009).

Most importantly, banks are exposed to credit risk since their principal profit making activity is making loan, to their customers. Lending represents the heart of the industry. Loans are dominant asset at banks; they generate the largest share of operating income and represent the banks greater risk exposure (MacDonald and Koch, 2006).It is clear that credit risk occurs when a debtor / borrowers fails to fulfill his obligations to pay back the loans to the principal / lender. In banking business, it happens when "payment can either be delayed or not made at all, which can cause cash flow problems and affect a bank's liquidity" (Grevning and Bratanovic, 2009). As the result, effectiveness of credit risk management is a bank essentially involves its practices to manage or in other words to minimize the risk exposure and occurrence.

A study conducted by Boston Consulting Group (2001) found that the sole determining success factors are not the technical development but the ability to understand risks strategically and the ability to handle and control risk organizationally has a positive and significant for effective credit risk management.

In relation to commercial banks' practice of risk management, Al-Tamimi (2002) found that the UAE commercial banks were mainly facing credit risk identification. The study found that inspection or identification by branch managers and financial statement analysis are the main methods used in risk identification. The main techniques used in risk management are establishing standards, credit score, credit worthiness analysis, risk rating and collateral which have a positive effect on credit risk management practices.

Noraini (2005) indicates that Islamic Banking is perceived not to use the latest risk analysis and assessment techniques and Shari'ah compliant risk mitigation techniques due to different Shari'ah interpretation of these techniques. An appropriate analysis and assessment of credit and

equity risks in various Islamic finance facilities can benefit from systematic data collection efforts, including by establishing credit and equity registry which has a negative effect on credit risk management practices.

Khan and Ahmad (2001) conducted a survey of risk management practices and found that on average the lowest percentage is on monitoring risk i.e. 69% score as compared to risk management policies and procedures i.e.82.4%, and internal control of Islamic banks i.e. 76%. Finally he found that there is significant difference between UAE national and foreign banks in risk monitoring system. The UAE commercial banks have an efficient risk monitoring system and it has positive influence on risk management practices in the study.

Kwaku, (2015) studied assessing credit risk management practices in the Banking Industry of Ghana: the key findings from the study revealed that the bank has documented policy guidelines on credit risk management evaluation system with a senior manager having oversight responsibility for implementation. Thus, the study showed that there was a positive and significant effect on credit risk management practices in the study.

Even though there are few previous studies in the area of factors affecting on credit risk management effectiveness , there is a research gap in risk understanding, risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation determinants in the Ethiopian context in general and in the study area in particular .

Therefore, this study aims to fill this research gap by assessing the bank's credit risk management effectiveness in Ethiopia private commercial banks evidence from Addis Ababa city.

1.3 Research Questions

In order to achieve the study, the researcher has formulated the following research questions as follows:

- Does risk understanding have effect on credit risk management effectiveness in the study area?
- Does risk identification system have effect on credit risk management effectiveness in the study area?

- Does risk assessment and analysis have effect on credit risk management effectiveness in the study area?
- Does risk monitoring system have effect on credit risk management effectiveness in the study area?
- Does risk evaluation have effect on credit risk management effectiveness in the study area?

1.4 Objective of the study

1.4.1 General objective

The general objective of this study is to investigate determinants of credit risk management effectiveness in Ethiopia private commercial banks evidence from Addis Ababa city.

1.4.2 Specific objectives

This study aims to achieve the following specific objectives.

- To assess the effect of risk understanding on credit risk management effectiveness in the study area.
- To examine the effect of risk identification system for credit risk management effectiveness under the study.
- To examine the effect of risk assessment and analysis on credit risk management effectiveness under the study.
- To assess effect of risk monitoring system on credit risk management effectiveness under the study
- To examine the effect of risk evaluation on credit risk management effectiveness in the study area.

1.5 Significance of the study

The result of this research is proposed to have the following contributions. An investigation of the effectiveness of credit risk management is not widely researched area in Ethiopia in general and in the study area in particular. Therefore, examining problems associated with credit risk management in the context of this study is paramount importance.

The findings of this study would serve as an ingredient and be informative to the banks under examination as well as to the regulatory body in the country. It will be also give a general insight to the academic & professional society regarding risk management aspects. In addition, the study provides valuable information for the regulatory body on the status of the bank's risk management and findings might be used in policy formulation. Moreover, the result of the study will be also an important to create awareness to various stakeholders of the industry about the application of the principles of credit risk management practice which enables to make effective and informed decisions in order to improve the asset quality and helps to safeguard the stakeholder interest of commercial banks. This also serves as a reference material for anyone who might undertake a further study on the same or related topic.

1.6 Scope of the study

The study was delimited both from the area of coverage and problem addressed. Geographically, the area of the study is delimited to Ethiopian private commercial banks with a particular reference of Addis Ababa city.

Conceptually, the scope of study also focused determinants of credit risk management effectiveness (level of risk understanding, risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation) and the relationship between these factors and the effectiveness of credit risk management in the study area.

1.7 Organization of the Study

This paper was organized into five chapters**.** Chapter one described the background of the study, a statement of the problem, the general and specific objectives, contribution of the study, and scope of the study. Chapter two illustrated literatures those constitute the theoretical, empirical and conceptual framework of the study. The third chapter presented the research methodology which covers the research approach, design, population and sample size, sampling techniques, data collection methods and tools, data analysis techniques. The fourth chapter explained the analysis and discussion of major findings. Finally, chapter five briefly expressed the major findings, conclusions, recommendations and directions for future study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Theoretical Review

This chapter briefly reviews the theoretical frameworks of credit risk management effectiveness, empirical studies related to credit risk management effectiveness and gaps in the literature. Then, conceptual frameworks about credit risk management will be presented.

2.1.1 The Concept of Risk Management

Risk is "the variability of the actual return from the expected returns associated with a given asset or investment" (Khan and Jain, 2004). Ehrhardt and Brigham (2011) also defined risk as "the chance that some unfavorable event (both financial and physical) will occur".

There is no single definition of risk. According to Williams (1998) risk is a potential variation in outcomes and exposure to a potential loss. It can also be defined as uncertainty about economic losses due to the occurrence of as an event. This is the possibility of an adverse deviation from desired outcomes that is expected. Risk surrounding a potential loss crates significant economic burdens for businesses, governments, and individuals. Businesses as well as individuals may try either to avoid risk as much as possible or to reduce its negative consequences. Overall, an entity's cost risk is the sum of outlays to reduce risk, the opportunity cost of activities forgone due to risk considerations, expenses of strategies to finance potential loses and the cost of un reimbursed losses (Trieschmary, 1998).

Management in the simplest understood can be defined as the act of planning, directing, controlling, monitoring and testing for desired results to be obtained. Or it is simply the act, manner, or practice of managing; handling, supervision, or control (Stephen, 2012). While risk is the possibility that something unpleasant or dangerous might happen (Macmillan Dictionary, 2002). If companies spoil in business, this is obvious that they will be exposed to one type of risk or in most cases is an uncertainty although at times it can be certain that it will occur. Banks are one of such businesses whose risk is very sure because they don't utilize in isolation given the dynamic environment in which they operate, the instability of the financial markets in which

they participate, diversification and the competitive environment they find themselves, (Williams et al., 2006). Although it is certain that risk will occur, this is not always possible in most cases to eliminate, reduce or ameliorate it (Keith, 1992). Therefore, the best option for companies is to try to manage the risk so as to decrease the possibility of occurrence or to decrease the consequences. The possibilities can range from "do nothing at all" attempting to reverse the effect of every identified risk (William et al., 2006). However, because of the nature of the banking activity, a bank can't find itself in a position to do nothing at all or to reverse the risk. Accordingly, all it does is to live with it, however; look for means to manage it. Assumed the riskiness of its events, a bank does not wait to introduce risk management at a certain stage of its activities, but does so right from the start. It is so because its activities are so correlated in such a way that if not well handled, the effect or consequences can be connected and can even lead to bankruptcy. For this goal to be attained, decision makers need to first of all classify the risk involved, measure its intensity, assess it, monitor it and then look for measures on how to control it. This act of managing the risk is called Risk management (RM). RM is "a course of action planned to reduce the risk of an event occurring and/or to minimize or contain the consequential effects should that event occur" (Keith, 1992). This course of action linked, gives rise to a Risk Management process which involved a number of stages.

Risk management is very important and forms a main part of any organization's activities because its main aim is to help all other management activities to reach the organization's aims directly and efficiently since it is a continuous process that depends directly on the changes of the internal environment of the organization (Tchankova, 2002).

2.1.2 Credit Risk

Credit risk is a financial exposure resulting from a Bank's dependence on another party (counterparty) to perform an obligation as agreed (National Bank of Ethiopia 2010).Credit risk, as defined by the Basel Committee on Banking Supervision (2001), is also the possibility of losing the outstanding loan partially or totally, due to credit events (default risk). It can also be defined as the potential that a contractual party will fail its obligations in accordance with the agreed terms. Credit risk is also referred to as default risk, performance risk or counterparty risk (Brown and Moles, 2012).

A Bank exists not only to accept deposits but also to grant credit facilities, therefore inevitably exposed to credit risk. Credit risk is by far the most significant risk faced by Banks and the success of their business depends on accurate measurement and efficient management of this risk to a greater extent than any other risks (Gieseche, 2004).According to Chen and Pan (2012), credit risk is the degree of value fluctuations in debt instruments and derivatives due to changes in the underlying credit quality of borrowers and counterparties. Coyle (2000) defines credit risk as losses from there fusel or inability of credit customers to pay what is owed in full and on time.

Credit risk is the exposure faced by Banks when a borrower (customer) defaults in honoring debt obligations on due date or at maturity. This risk interchangeably called 'counter party risk' is capable of putting the Bank in distress if not adequately managed. Credit risk management maximizes Bank's risk adjusted rate of return by maintaining credit risk exposure within acceptable limit in order to provide framework for understanding the impact of credit risk management on Banks' profitability (Kargi, 2011).The main cause of credit risk include, limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, inappropriate laws, low Capita Land liquidity levels, direct lending, massive licensing of Banks, poor loan underwriting, laxity in credit assessment, poor lending practices, government interference and inadequate supervision by the central Bank (Kithinji, 2010).Credit risk is critical since the default of a small number of important customers can cause large losses, which can lead to insolvency (Bessis, 2002).An increase in Bank credit risk gradually leads to liquidity and solvency problems.

2.1.3 Types of credit risk

Concerning the classifying of credit risk, different writers have expressed various criteria. For instance Hennie (2003) stated in his book that the three types of credit risk are personal or consumer, company or corporate and sovereign or country risks, while Culp and Neves (1998) sharp out to realize the default risk and resale risk being the two types of credit risk. What is adopted here is part of the views from Horcher (2005), who defines more types of credit risk, including default risk, counterparty pre-settlement risk, counterparty settlement risk, legal risk, country or sovereign risk and concentration risk that are six. According to Mckinley & Barrickman (1994), credit risk also contains transaction risk, intrinsic risk & concentration risk.

***1. Transaction Risk*:** It focuses on the volatility in credit quality and earnings resulting from how the bank underwrites individual loan transactions. Transaction risk has three scopes: selection, underwriting and operations (Mckinley &Barrickman, 1994).

2. Intrinsic Risk: It focuses on the risk inherent in certain lines of industry and loans to certain industries. Commercial real estate construction loans are inherently more risky than consumer loans. Intrinsic risk addresses the susceptibility to historic, predictive, and lending risk factors that typify an industry or line of business. Historic elements address prior performance and stability of the industry or line of business. Predictive elements focus on characteristics that are subject to change and could positively or negatively affect future performance. Lending fundamentals focus on how the collateral and terms offered in the industry or line of business affect the intrinsic risk (Mckinley & Barrickman, 1994).

3. Concentration Risk: Concentration risk is the aggregation of transaction and intrinsic risk within the portfolio and may result from loans to one borrower or one industry, geographic area, or lines of business. Bank must define acceptable portfolio concentrations for each of these aggregations. Portfolio diversify achieves an important objective. It allows a bank to avoid disaster. Concentrations within a portfolio will determine the magnitude of difficulties a bank will experience under adverse conditions (Mckinley & Barrickman, 1994).

2.1.4. Theories in Credit Risk Management

2.1.4.1 Agency theory

Agency theory is one the oldest theory in finance that has been used to explain principal agent relationship. Lately, the theory has also been use in explaining the role of risk in the relationship between ownership and firm performance, especially in the financial (banking) sector of many economies. An explicit analogy of the agency theory within the context of ownership structure, risk taking and firm performance is illustrated (Karel, 2006).

Agency theory referred to as principal-agent theory explains the conflict of interest the shareholders hereby referred to as the principals and the managers and debt holders here referred to as the agents (Maxwell & Agness, 2016) .The theory defines agency relationship as a contract

that the principal engages the agent to perform some duties on their behalf; similarly, the principal from time to time may delegate some duties to the agent.

The theory opens the black box of firms revealing the contract among factors of production in relation to actual production (performance), with each factor motivated by its self interest (Isaac, 2013). The principal area of immense contribution of the agency theory is on how employee motivation is used to reconcile each stakeholder's self-interest while pursuing corporate interest (which is performance) amidst each group's differing risk preferences (Hawley, 2011). Therefore, the interrelationships among dimensions of ownership structure as explained in this study confined to exploring the self-interest of the stakeholder as a measure to enhance the performance of firms.

Wilson (2007) gave a comprehensive explanation of principal-agent relationship. They described agency relationship as an agreement between two parties, in which owners (principals) assign various tasks or responsibilities to the mangers (agents) for execution on their behalf. More precisely it can be defined as shareholders delegate some responsibilities to a team of experts while keeping in mind that they will perform best for the success of their organizations. Generally, two problems occurred in the relationship of principal and agent.

2.1.4.2 Stewardship Theory

The roots of the stewardship theory are stemmed out from organizational psychology and sociology and defined by Nagarajan (2001) as a steward protects and maximizes shareholders' wealth through firm performance, because by so doing, the steward's utility functions are maximized.

Stewardship theory articulates that managers are hired for handling the firm's operations in a well manner and a manager's achievement and success is measured by satisfaction he gets from the performance of the firm; therefore the manager's primary objective is to maximize the firm value. Better firm performance is motivational spot for corporate managers who are stewards of firm and consider the organizational objective as their own. Thus, managers choose pro organizational behavior that is aligned with wealth of shareholders rather than their self-serving objectives (Kargi, 2011). Major difference between agency theory and stewardship theory is that

the stewardship theory replaces the lack of trust on managers whereas agency theory refers to authority and monitoring to maintaining the inclination of ethical conduct.

The main issue in stewardship theory is ignorance of intrinsic nature of man. Many studies showed that moral hazard problem is the main cause explaining why mangers do not work with good faith and honesty in order to increase wealth of owners (Acharya & Viswanathan, 2011).

2.1.4.3 Stakeholders Theory

Stakeholder theory was embedded in the management discipline in 1970 and gradually developed by Freeman (1984) incorporating corporate accountability to a broad range of stakeholders. Wheeler et al, (2002) argued that stakeholder theory derived from a combination of the sociological and organizational disciplines. Indeed, stakeholder theory is less of a formal unified theory and more of a broad research tradition, incorporating philosophy, ethics, political theory, economics, law and organizational science. Stakeholder theory can be defined as any group or individual who can affect or is affected by the achievement of the organization's objectives. Unlike agency theory in which the managers are working and serving for the stakeholders, stakeholder theorists suggest that managers in organizations have a network of relationships to serve – this include the suppliers, employees and business partners. And it was argued that this group of network is important other than owner-manager-employee relationship as in agency theory (Carol, 2013).

Stakeholder theory proposed that organizations are separate entities and they are connected with many parties while achieving their targets (Caroline, 2013). Moreover, they explained that it is management's duty to make sensible decisions and put their best efforts in attaining the benefits that satisfy all stakeholders. In addition, Prakash and Poudel (2012) that highlighted board of directors should not ignore their responsibilities towards protecting interests of stakeholders.

2.1.4.4 Resource Dependency Theory

Resource dependency theory concentrates on the role of board directors in providing access to resources needed by the firm. Hillman, Canella and Paetzold (2000) contend that resource dependency theory focuses on the role that directors play in providing or securing essential resources to an organization through their linkages to the external environment.

Indeed, Ahmad and Ariff (2007) concurs that resource dependency theorists provide focus on the appointment of representatives of independent organizations as a means for gaining access in resources critical to firm success. For example, outside directors who are partners to a law firm provide legal advice, either in board meetings or in private communication with the firm executives that may otherwise be more costly for the firm to secure.

Hillman and Dalziel (2003) found board of directors as the main source for the achievement of different resources require by the firms. Generally, resource dependence theory argues the availability of efficient skills of boards that are involved in the accessibility of resources. On one hand, agency theory suggests the important of boards in monitoring the managerial activities, on the other; resource dependence theory highlighted another role of board directors as the resource providers.

2.1.4.5 Transaction Cost Theory

Transaction cost theory was first initiated by Cyert and March (1963) and later theoretical described and exposed by Greuning and Bratanovic (2009). Transaction cost theory was an interdisciplinary alliance of law, economics and organizations. This theory attempts to view the firm as an organization comprising people with different views and objectives. The underlying assumption of transaction theory is that firms have become so large they in effect substitute for the market in determining the allocation of resources. In other words, the organization and structure of a firm can determine price and production. The unit of analysis in transaction cost theory is the transaction. Therefore, the combination of people with transaction suggests that transaction cost theory managers are opportunists and arrange firms‟ transactions to their interests (Bessis ,2010).

2.1.5 Effectiveness of Credit Risk Management

The failure to collect loans granted to customers has been the major factor behind the collapse of many banks around the world (NBE guideline issued in 2003). Banks need to manage credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Additionally, banks should be aware that credit risk does not exist in isolation from other risks, but is closely intertwined with those risks (NBE guideline issued in 2003). Effective credit risk management is the process of managing and institution's activities which create credit risk

exposures, in a manner that significantly reduces the likelihood that such activities will impact negatively on a bank's earnings and capital. Credit risk is not confined to a bank's loan portfolio, but can also exist in its other assets and activities. Likewise, such risk can exist in both a bank's on-balance sheet and its off-balance sheet accounts (NBE guideline issued in 2003).

Credit risk management is inherent in banking and is unavoidable. The basic function of bank management is risk management. Banks assume credit risk when they act as intermediary's offends and credit risk management lies at the heart of commercial banking (Haim and Thierry, 2005). The business of banking is credit and credit is the primary basis on which a bank's quality and performance are adjusted. Credit risk is composed of default risk and credit mitigation risk. Default risk is the risk that the counterparty will default on its obligations to the investor (Haim and Thierry, 2005). In this risk, the credit quality deteriorates (or default risk increases). Credit risk is more difficult to measure because data on both default and recovery rates are not extensive, credit returns are highly skewed and fat tailed and long term time horizon and higher confidence levels are used in measuring credit risks. These are problems in measuring credit risk that have inspired the development of several sophisticated models and commercial software products for measuring portfolio credit risk (Haim and Thierry, 2005).

Management of credit risk exploits bank's risk adjusted rate of return by maintaining credit risk exposure within suitable limit in order to provide framework for understanding the influence of credit risk management on banks' profitability (Kargi, 2011). Girma (2011) in a small country like Ethiopia, the financial sector is still in the development phase and customer services are still in their infancy and banks revenue depends heavily on lending activities and credit growth is central to any banking organizations profit (Kargi, 2011).

Girma (2011) in his research paper supposed that nature of Ethiopian commercial banking business is, so sensitive because more than 85% of their liability is deposits from depositors, all banks aggressively use these deposits to generate credit for their borrowers to make some money, grow and survive stiff competition at the market place and this credit creation process exposes the banks to high default risk.

Management of credit risk processes forces the banks to establish a clear process for approving new credit as well as for the extension to existing credit (Basel, 1999). These processes also

follow monitoring with particular care and other appropriate steps are taken to control or mitigate the risk of connected lending (Basel, 1999). Payle (1997) stated that banks have credit policies that direct them in the process of awarding credit. The general guideline of governing the process of giving credit to bank customers is to control credit policy. The policy arrangements the rules on who ought to access credit, when and why one should obtain the credit including repayment arrangements and necessary collaterals. The approaches of assessment and evaluation of risk of every prospective applicant are part of a credit control policy (Payle, 1997).

2.1.5 Credit Risk Management Policy

The foundation for effective credit risk management is the identification of existing and potential risks in the bank's credit products and credit activities. This creates the need for development and implementation of clearly defined policies, formally established in writing, which set out the credit risk philosophy of the bank and the parameters under which credit risk is to be controlled. Measuring the risks attached to each credit activity permits a platform against which the bank can make critical decisions about the nature and scope of the credit activity it is willing to undertake (NBE, 2011).

Banks like any other firm or corporation have formal laid down policies and principles that have been put in places by the board of directors on how to manage credits and this have to be carefully implemented by management. This restricts supervisors or managers on how to take action. They must do so by looking at the policies laid down to known if they are doing the right thing at the right time. Maness & Zietlow (2005) specifies that a credit policy has four major components which include credit standards, credit terms, credit limits and collection procedures.

- Credit standards- This is the profile of the minimally acceptable creditworthy customer
- Credit terms- This is the credit period stipulating how long from the invoice the customer has to pay and the each discount (if any)
- Credit limit- This is the dollar amount that cumulative credit purchases can reach for a customer if credit is extended.
- Collection procedures – there is detail statement regarding when and how the company will carry out collection of past due accounts. Despite the rule, it does not mean that the credit policies are stereotyped. A good lending policy is not overly restrictive, but allows

for the presentation of loan to the board that officer believe are worthy of consideration but which do not fall within parameter of written guidelines'. (Greuning &Bratanovic, 2003).

- Polices aimed to limit or reduce credit risk (concentration and large exposures, adequate diversification lending to connected parties or over exposures)
- Policies of assets classification (mandate periodic evaluation of collectability of the portfolio of loans and other credit instruments, including any accrued and unpaid interest, which exposé a bank to credit risk).
- Policies of loss positioning (making of allowances at level adequate to absorb anticipated loss).

The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long term success of any banking organization Basel (2009).

The sound practices set out in the document specially address the following areas:

- Establishing an appropriate credit risk environment.
- Operating under a sound credit granting process.
- Maintaining an appropriate credit administration, measurement and monitoring process.
- Ensuring adequate controls over credit risk.

2.1.6 Determinants of Credit Risk Management Effectiveness

As banks have different credit risk management polices/philosophies, same do the risk management practices differ from one financial institution to anther despite the fact that they can be open to the same risk type. The practices differ according to their previously laid down polices and philosophies. To summarize this it is clear that the same industry, but the implementation in practice differs. The exact approach chosen by individual supervisors will depend on a host of factors, including their on-site and off-site supervisory techniques and the degree to which external auditors are also used in the supervisory function; all members of the Basel Committee agree that the principles set out here under should be used in evaluating a bank's credit risk management system. Supervisory expectations for the credit risk management

approach used by individual banks should be commensurate with the scope and sophistication of the bank's activities.

OCC (2011) identifies fundamental credit risk management principles as sound underwriting, comprehensive financial analysis, adequate appraisal techniques and loan documentation practices, and sound internal controls. Credit risk as the likelihood that borrowers will not be able to repay their loans within the period agreed upon. Credit risk as distribution of financial losses due to unexpected changes in the credit quality of counterparty in a financial agreement (Kay, 2002).

2.1.6.1 Level of risk understanding

It is important for staff of banking institutions to understand the aspect of risk in the banking operations and the risks that are inherent and exposed in their business operations. Better understanding of risk management is also necessary especially in the financial intermediation activities where managing risk is one its important activities. It helps to implement the following activity to operate under a sound credit granting process like, operate within sound, well defined credit-granting criteria. These criteria should include a clear indication of the bank's target market and a thorough understanding of the borrower or counterparty, as well as the purpose and structure of the credit, and its source of repayment (Kargi, 2011).

According to Engdawork (2014), the banks should understand and establish overall credit limits at the level of individual borrowers and counterparties, and groups of connected counterparties that aggregate in a comparable and meaningful manner different types of exposures, both in the banking and trading book and on and off the balance sheet, banks should have a clearly established process in place for approving new credits as well as the amendment, renewal and refinancing of existing credits, and all extensions of credit must be made on an arm's-length basis. In particular, credits to related companies and individuals must be authorised on an exception basis, monitored with particular care and other appropriate steps taken to control or mitigate the risks of non-arm's length lending.

2.1.6.2 Establishing an Appropriate Risk Identification

Risk management cannot be implemented unless first of all the risk has not been identified. It means if there is no risk identified, there is thus no need for risk management. This identification is done by using different techniques depending on the company in question to ascertain all forms of threats it can be faced with both present and future. So, risk identification is the first stage of the Risk Management process which develops the basis for the next stages. If success is not attained at this stage, then the risk will be non-manageable. This means that the company will not account for the risk and will not take any action related to it and the consequences could be much unexpected (Tchankova, 2002). This way, risks related to gains and losses must be identified. The inability to identify the risks of one is as inappropriate as to identify the other. Risk identification thus involves a comprehensive analysis of all present and future risks in the business operations, asset management and support services (Keith, 1992). During the process of risk identification, the bank is able to study its activities and the places where its resources are exposed to risk. This will help it especially when it has to carry out a future duty, in terms of developing and implementing new programs for risk control. Although all banks may be conscious of being faced with the same type of risks, the risk identification techniques for each of them can be different. It is always important for managers to identify all the possible risks they can be faced with because any neglected risk can have very negative consequences on the whole system.

2.1.6.3 Risk assessment and analysis

The risk assessment task is to understand what is at risk and what events could potentially cause harm or benefits. The risk is being assessed in terms of the severity of the impact, likelihood of occurring and controllability (Gray & Larson, 2006). When this is done, it helps the bank to know the chances that the risk might occur, and if it occurs, the impact it can have on the bank and how they can possibly control it. Risk assessment is done by prioritizing the risk either by using risk analysis or risk evaluation (Williams et al., 2006). This risk analysis is based on the likelihood and consequences. Likelihood depends on the probability that the risk will occur and how frequently it will take place. While, consequences on the other hand can be measured by looking at the effects on results or on the enablers of results (Williams et al, 2006). Knowing the frequency of occurrence of the risk and the effect it will have should it occur, gives the bank the

base to know how important the risk is. Risk evaluation is then carried out when a good risk analysis has been undertaken. An evaluation is done against an appropriate risk-acceptance criterion to give a ranking (Williams et al., 2006).

2.1.6.4 Ensuring Adequate risk monitoring system

A plan is always made for the activities that are used to manage risk. To be sure that the activities attain the desired goal of the business, monitoring is very important so that the results gotten are in line with the set down goals. If it is noticed that the results are going contrary. Readjustment should be done immediately. Risk monitoring is very important and it goes hand in hand with risk control. Risks in banks need to be monitored just like any project in progress. The risk manager needs to constantly do assessment and make updates where there is need so as to be sure to handle any unforeseen risks at the right time before it is too late (Gray & Larson, 2006). Control over credit risk as emphasized by Basel (2000) the means for guaranteeing adequate controls over credit risk in banks lay in the establishment of different kinds of credit reviews. Regular credit reviews can verify the accordance between granted credits and the credit policies, and an independent judgement can be provided on the asset qualities.

2.1.6.5 Establishing an appropriate risk evaluation system

According to Basel (2000), the effectiveness of the risk management strategy is evaluated frequently. One verifies whether the resulting risk taking remains in line with the strategy and applies corrections where necessary. This involves evaluation of the relevant risk drivers; the measurement process is evaluated, back testing procedures, the result of the risk treatment plans and the actual implementation. Banks should establish and enforce internal controls and other practices to ensure that exceptions to policies, procedures and limits are reported in a timely manner to the appropriate level of management for action, banks must have a system in place for early remedial action on deteriorating credits and should manage problem credits and similar workout situations identify, measure, monitor and control credit risk as part of an overall approach to risk management. Moreover, the supervisors should conduct an independent evaluation of a bank's strategies, policies, procedures and practices related to the granting of credit and the ongoing management of the portfolio and they should consider setting prudential limits to restrict bank exposures to single borrowers or groups of connected counterparties.

2.2. Empirical Review

This section provides a summary of some of the published work on the management of risks by banks in developed and developing economies.

Khalid and Amjad (2012) conducted a research on the risk management in Islamic banking in Pakistan. The researcher used the same model suggested on credit risk management practices. The results indicated that Islamic banks are somewhat reasonably effective in managing risk where understanding risk and credit risk analysis, are the most influencing variables in risk management practices under the study. A study conducted by Boston Consulting Group (2001) found that the sole determining success factors are not the technical development but the ability to understand risks strategically and the ability to handle and control risk organizationally has a positive and significant for effective credit risk management effectiveness.

Then, Al-Tamimi and Al-Mazrooei (2007) found that the UAE banks staff have good understanding of risk and risk management, which might give an indication about the ability of these banks to manage risks efficiently in the future. Furthermore, understanding risk and risk management had positive effect on risk management practice although it is insignificant. From the literature, it shows that understanding risk is an important factor of risk management effectiveness.

According to Tchankova (2002), risk identification is the first stage of risk management and a very important step in risk management. The first step in organizing the implementation of the risk management function is to establish the crucial observation areas inside and outside the corporation. Then, the departments and the employees must be assigned with responsibilities to identify specific risks. For instance, interest rate risks or foreign exchange risks are the main domain of the financial department. It is important to ensure that the risk management function is established throughout the whole corporation; i.e. apart from parent company, the subsidiaries too have to identify risks, analyze risks and so on. There are many other approaches for risk identification, for instance, scenario analysis or risk mapping. An organization can identify the frequency and severity of the risks through risk mapping which could assist the organization to stay away from high frequency and low severity risks (Al-Tamimi and Al-Mazrooei, 2007).

In relation to commercial banks' practice of risk management, Al-Tamimi (2002) found that the UAE commercial banks were mainly facing credit risk. The study also found that inspection by branch managers and financial statement analysis are the main methods used in risk identification. The main techniques used in risk management are establishing standards, credit score, credit worthiness analysis, risk rating and collateral which have a positive effect on credit risk management effectiveness.

Empirical studies made by Khan and Ahmad (2001) in Islamic banks and the results of survey of risk perception in different modes of financing shows that risk level is considered elevated. The high perception of risks may be an indication of the low degree of active risk management due to the absent of risk control through internal processes and control, especially in the case of operational risk. Also, Noraini (2005) indicated that credit risk in Islamic banks perceived to be the most important risk. Finally, from the study, it is suggested that risk identification is one of the important step of risk management effectiveness.

The empirical findings by Al-Tamim and Al-Mazrooei (2007) highlighted that UAE banks are somewhat efficient in analyzing and assessing risk and there is a significant different between UAE national and foreign banks in the practice of risk analysis and assessment. Additionally, the findings show that risk analysis and assessment are positively influencing risk management effectiveness.

Noraini (2005) indicates that Islamic Banking is perceived not to use the latest risk analysis and assessment techniques and Shari'ah compliant risk mitigation techniques due to different Shari'ah interpretation of these techniques. An appropriate analysis and assessment of credit and equity risks in various Islamic finance facilities can benefit from systematic data collection efforts, including by establishing credit and equity registry which has a negative effect on credit risk management effectiveness.

Jackson-Moore (2007) suggests that bank need to start collecting data, and there can be significant advantages in pooling information and using common definitions, standards, and methodologies for operational risk which is argued can lead to significant losses in all financial institutions. Finally, it is found that risk analysis and assessment particularly on measuring risk in banking institutions is important for risk management effectiveness which has a positive effect.

Risk monitoring can be used to make sure that risk management practices are in line and proper risk monitoring also helps bank management to discover mistake at early stage (Al-Tamimi and Al-Mazrooei, 2007). Monitoring is the last step in the corporate risk management process (Pausenberger and Nassauer, 2002). According to them, control has to be established at different levels. The control by the management board will not be enough to ensure the effective functioning of the risk monitoring system, because the management board members do not have time on their hands to exercise extensive control. Hence, the management board will install an independent unit to complete the task of internal supervision. This task is the responsibility of the internal audit. Also, the supervisory board is obliged to control the risk management process. The supervisory board is supported by the auditor. If the auditor discovers a defect, he will have to inform the supervisory board and the management board. Finally, the shareholders of the corporation can use their rights to demand information in order to judge the efficiency of the risk management system. The director's report enables the shareholders to assess the status of the corporation knowledgeably and thoroughly.

Khan and Ahmad (2001) conducted a survey of risk management practices and found that on average the lowest percentage is on monitoring risk i.e. 69% score as compared to risk management policies and procedures i.e.82.4%, and internal control of Islamic banks i.e. 76%. Al-Tamimi and Al-Mazrooei (2007) found that there is significant difference between UAE national and foreign banks in risk monitoring and controlling. Also, the UAE commercial banks have an efficient risk monitoring and controlling system and it has positive influence on risk management effectiveness.

Kwaku, (2015) studied assessing credit risk management practices in the Banking Industry of Ghana: the key findings from the study revealed that the bank has documented policy guidelines on credit risk management evaluation system with a senior manager having oversight responsibility for implementation. Thus, the study showed that there was a positive and significant effect on credit risk management effectiveness in the study.

Nagarajan (2001) in his study of risk management for financial institutions in Mozambique found that risk management is a dynamic process that could ideally be developed during normal times and tested at the wake of risk. It requires careful planning, commitment and risk evaluation on part of all stakeholders. It is encouraging to note that it is possible to minimize risks related

losses through diligent management by building robust institutional infrastructure with skilled human resources and inculcating client discipline, through effective coordination of stakeholders. Finally, the finding indicated that better evaluation system has resulted significance effect on the credit risk management effectiveness.

2.3 Conceptual Framework

In order to achieve the objectives of the study, the framework shows about factors contributing to credit risk management effectiveness. The major enablers or success factors of these factors are level of risk understanding, risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation (Khan and Ahmad, 2001). To investigate the relationship between the independent variables and the dependent variable, the researcher has developed the conceptual framework as follows.

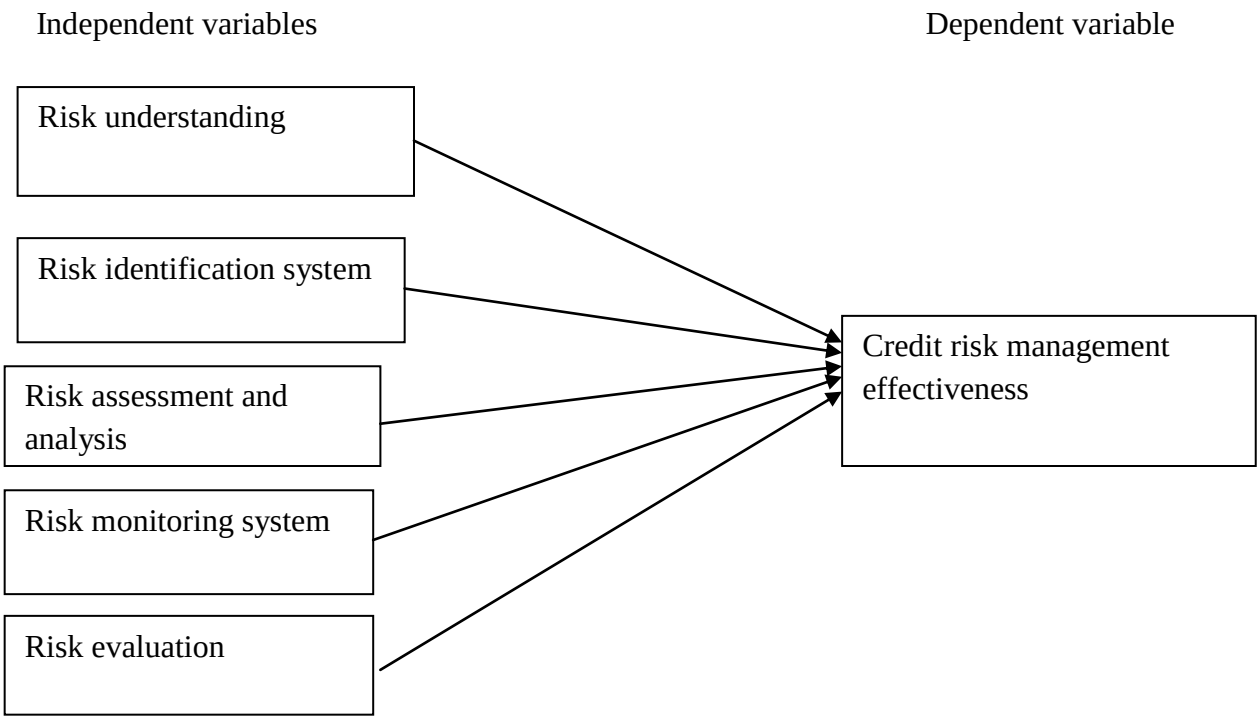

Figure 1 Conceptual framework

Source: Adopted from Noraini (2005)

2.4 Hypothesis of the Study

Based on the theories and empirical studies explained above, the following hypotheses have been formulated.

Ha1. Risk understanding has a significant and positive effect on credit risk management effectiveness in Ethiopia private commercial banks.

Ha2. Risk identification system has a significant and positive effect on credit risk management effectiveness in Ethiopia private commercial banks.

Ha3. Risk assessment and analysis has a significant and positive effect on credit risk management effectiveness in Ethiopia private commercial banks.

Ha4. Risk monitoring system has a significant and positive effect on credit risk management effectiveness in Ethiopia private commercial banks.

Ha5. Risk evaluation has a significant and positive effect on credit risk management effectiveness in Ethiopia private commercial banks.

CHAPTER THREE

RESEARCH METHODOLOGY

Chapter three stated the research methodology to be used in the study. It contains research design, sample and sampling procedures, methods of data collection, and data analysis models.

3.1 Research Approach

Research approach implies that research is guided by the rules of logical reasoning and the logical process of induction and deduction in carrying out research. So that, there are two types approaches in any research work: deduction and induction (Gujarati, 2004). These two approaches outline the nature of the relationship that exists between theory and research practices. The deductive approach involves moving from general that is theoretical position to the specific inquiry to the research. This approach states the relationship between theory and research that focus on the testing of theories (Tibebe, 2012). The inductive approach starts from the observations to develop a theory or the process of reasoning from a part to the whole (Kothari, 2004). According to the deductive approach, researchers deduce their studies, hypotheses based on known theories, translate them into operational terms and test them in empirical ways by using statistical methods.

This study mainly used deductive approach and quantitative that focuses on using primary data that helps to test the existing theory of credit risk management effectiveness in Ethiopia private commercial banks.

3.2 Research Design

A research design is the frame work of the study and is basic plan that guides the researchers for the type of information to be collected data and analysis phases of the research project (Kumar, 2005). The most common research designs are descriptive and exploratory design. Describing the existing situation under the study is related with descriptive whereas explaining, understanding and predicting the relationship between variables is related to explanatory design (Dawit and Adem, 2018). According to Rajab (2018), a descriptive survey is feasible when the

population is small and variable hence the researcher is able to cover all the elements of the population.

Thus from the nature of study and the amount of population, the research design that was implemented was more explanatory research. According to Benjamin (2012) explanatory research involves collecting data in order to test hypotheses or answer research objectives concerning the current status of the subject of the study. This helped to establish the relationship between variables that is dimensions of credit risk management effectiveness.

The researcher used explanatory and descriptive research method to examine cause and affect relationship between the independent and dependent variables under the study.

3.3 Population and sampling techniques

3.3.1 Population of the Study

According to Kothari (2004), population refers to a larger group of people with common observable features to which one hops to apply the research results. Target population can be defined as a complete set of people, cases/objects with some frequent observable uniqueness of a particular character distinct from other population. Target population is that population to which a researcher wants to generalize the results of the study (Mugenda, 2003).

Therefore; the target population of the study is credit analysts, supervisors in the same process, and managers who are currently working in Ethiopian private commercial banks evidence from Addis Ababa each district and branches.

It comprises Branch manager, Credit analysts, loan officers, Customer service managers, and Credit committee members from all 16 private banks. A total of 915 employees are included as a target population of this study from each branches of private commercial Banks.

3.3.2 Sample size and sampling techniques

A sample is a selection of items taken from a population and is chosen so that it is representative of the population as a whole and it is a subset of the population. The basic idea of sampling is that by selecting some of the elements in a population, conclusions can be drawn about the entire population (Zikmund, 2003).

To investigate credit risk management effectiveness of Ethiopian private commercial banks, it is rationale to consider Branch manager, Credit analysts, Loan officers, Customer service managers, and Credit committee members.

Since credit risk management by its nature needs detailed knowledge and skill, it is necessary for the researcher to deal with those people who are convenient and are subjected to credit risk management effectiveness so as to get the necessary information for the study.

To determine the sample size and sample units, the researcher used nonrandom sample technique called convenience sampling technique, because the researcher believes that convenience sampling is used in order to generate the data from the employees that are directly engaged in the operation of the credit risk management business of the bank. Thus, a very reliable source of information will be gathered than randomly selected respondents who are not directly engaged in credit risk management effectiveness activities in the bank.

According to NBE (2020), there are sixteen private commercial banks in the year 2020 as indicated in table 1 below. Based on each district December 31/2020 report of private commercial banks in Addis Ababa city, there are totally 915 Branch manager, Credit analysts, Loan officers, Customer service managers, and Credit committee members.

Thus, Yamane (1967) asserted that the sample size of the study is calculated using the sample size determination formula as follows.

$$n = \frac{N}{1+Ne^2} = \frac{915}{1+915(.07)^2} = 166$$

Where n is the minimum sample size to be drawn, N is the total population from which the required sample population has been drown, is error term (0.07). Therefore, the sample size is 166 and the questionnaire was distributed for these employees.

Table 1 Sample size of the study

No.	Name of Bank	Establishment Year (G.C)	Target Population	Proportional Sample size
1	Awash International Bank	1994	88	88/915* 166 = 16
2	Dashen Bank	1995	96	96/915* 166 = 17
3	Bank of Abyssinia	1996	89	89/915* 166 = 16
4	Wegagen Bank	1997	63	63/915* 166 = 11
5	United Bank	1998	59	59/915* 166 = 11
6	Nib International Bank	1999	46	46/915* 166 = 8
7	Cooperative Bank of Oromia	2004	42	42/915* 166 = 8
8	Lion International Bank	2006	51	51/915* 166 = 9
9	Oromia International Bank	2008	58	58/915* 166 = 11
10	Zemen Bank	2008	43	43/915* 166 = 8
11	Bunna International Bank	2009	53	53/915* 166 = 10
12	Berhan International Bank	2009	41	41/915* 166 = 7
13	Abay Bank	2010	64	64/915* 166 = 12
14	Addis International Bank	2011	48	48/915* 166 = 9
15	Debub Global Bank	2012	36	36/915* 166 = 7
16	Enat Bank	2012	38	38/915* 166 = 7
		Total	**915**	**166**

Source - Collected from each district as December 31/2020

3.4 Data Collection Techniques and Measurements

3.4.1 Data Collection Techniques

In order to obtain relevant data for the study, the researcher uses primary and secondary sources. The primary data was collected from employees of the selected private commercial banks using self-administered close ended structured questionnaires. The purpose of using primary data source is to understand the overall credit risk management effectiveness of those private commercial banks in Ethiopia. The secondary data also was gathered from NBE guidelines, quarterly reports of banks, web pages, and banks documentation on each risk for literature purpose.

3.4.2 Measurements of the independent variables

The independent variables of the study are factors that influence on credit risk management effectiveness in the study area. These variables have five scopes which are risk understanding,

risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation. Thus, to measure the complete representation of independent variables, the researcher employed by preparing 26 items that cover from questions 5-30 adopting from (Fatemi & Glaum, 2000; Agegnehu ,2013; Alebachew, 2015; and Nigussie Worku, 2016) using the five point Likert scales rate ranging from 5= strongly agrees, 4=Agree, 3= Neutral, 2= Disagree, 1 = strongly disagree.

3.4.3 Measurements of the Dependent variable

The dependent variable of the study is credit risk management effectiveness. It is the process of managing and institution's activities which create credit risk exposures, in a manner that significantly reduces the likelihood that such activities will impact negatively on a bank's earnings and capital (Hennie, 2003). To measure the dependent variable of this study, 5 items that cover from question 31-35 was prepared by adopting from Tesfaye (2016) using the five point Likert scales rate ranging from 5= strongly agree,4=Agree, 3= Neutral , 2= Disagree, 1 = strongly disagree. Thus, the respondents are requested to select their own choice of the five point Likert scale alternatives in order to specify their level of agreement or disagreement on each statement.

3.5. validity and Reliability

So as to reduce the likelihood of getting the response erroneous, considerations need to pay on validity and reliability. Ondiek (2009) recommend that pre-testing of research instruments before use in research is an acceptable. Accordingly, the validity and reliability of the instrument will be tested for this study before the research process launches.

3.5.1 validity

Validity is the capacity of a scale to measure the planning to be determined and considered. There would be a better measurement of validity if there is the improved fit between the conceptual and operational definitions. It shows the relationship between the construct and its indicators (Zikmund, 2003).

(Karpf, 2012) stated that external and internal validity shows the accuracy of a measure or the extent to which a score truthfully represents a concept. The external validity of research findings

refers to whether the observed associations can be generalized from the sample while internal validity examines whether the observed change in a dependent variable is indeed caused by a corresponding change in a hypothesized independent variable, and not by variables extraneous to the research context.

Since the questionnaires/items/ under the study is prepared by adopting from previous scholars in the area and data collected from the reliable sources of respondents who are currently working private commercial bank in Addis Ababa city, it governs the strengths and weaknesses of the questionnaires. The researcher conducts pilot test in order to assure the question format, relevance, wording, clarity and order. The pre-test survey questionnaires were administered for 16 respondents. Based on the pilot-test result, the investigator revises important modification, such as, order, clarity, and sentence structure, editing repetitive questions, and avoided worthlessness questions.

3.5. 2 Reliability

Reliability is the extent to which a measure is free from random error and gives a consistent result. It is an indicator of the measure's internal reliability. A measure that is reliable is not necessarily valid; indeed a measure can be but not valid (Gujarati ,2004). Saunders et al. (2003) states that reliability as the degree to which data collection method or methods yield consistent findings, similar observations.

According to Cronbach, (1951), most frequently practical estimate of a different item scale's reliability, which represents the standard of all possible split-half reliabilities for a construct. It is proposed the coefficient Alpha (called Cronbach Alpha Value) that indicates the higher coefficients, the better measuring instrument on which its value ranges from 0 to 1, however, a satisfactory value should be higher than 0.7 on the scale to be reliable or acceptable. Therefore, the researcher uses Cronbach Alpha Value for the study that conclusions was reached and there is transparency in how sense is made from the raw data.

According to this study, as shown in table 2 below, the minimum coefficient Cronbach Alpha value was .708 and the maximum was .747 for each variant of the post-test. The average all over the coefficient of Cronbach Alpha value of all items was .846 which is good and acceptable. The result indicated that having rationally high alphas suggested that the relationship of the

independent variables and dependent variable measurement is generally reliable. The reliability of the instruments Cronbach alpha coefficient is depicted in table 2 below.

Table 2 Summery of the pre test reliability of items**.**

Variables		Pre test	
	No. of Items	No. of samples	Cronbach's alpha
risk understanding	4	16	.739
risk identification system	5	16	.741
risk assessment and analysis	6	16	.708
risk monitoring system	6	16	.747
risk evaluation	5	16	.717
credit risk management effectiveness	5	16	.742

Source: Field Survey 2021

3.6 Methods of Data Analysis and interpretation

To carry out the objectives stated, the collected data from respondents can be analyzed using description of facts (explanatory), inferential statistics and multiple regressions. The main statistical methods used like tables, graphs, frequency distribution and percentages as well as mean and standard deviation. These statistical methods are chosen because these are formal to be used and can be understood easily.

In order to analyze the quantitative data collected using survey questionnaires, Statistical Package for Social Sciences (SPSS) was used. As indicated by Kotari (2004) standard multiple linear regressions being one family of statistical techniques is used to explore the relationship between one continuous dependent variable and a number of independent variables or predictors (usually, continuous) simultaneously enabling to get answers regarding how well a set of variables is able to predict a particular outcome and which variable in a set of variables is the best predictor of an outcome.

The researcher uses Ordinary Least Square /OLS/model in the study. The linear function equation of the model was formulated to answer the research objectives of this particular research and expressed as follows:

$$Yi = b0 + b1X1 + b2X2 + b3\ X3 + b4\ X4 + b5\ X5 + e$$

This model was used to examine the relationship between the explanatory variables with credit risk management.

Yi = dependent variable (credit risk management effectiveness)

b0 = Constant

b1, b2, b3, b4, and b5 = regression coefficient (Slope of line) of each variable,

X1= risk understanding

X2= risk identification system

X3 = risk assessment and analysis

X4 = risk monitoring system

X5 = risk evaluation

e = Error

3.7 Ethical Considerations

The information found from the respondents is treated with confidentiality without disclosure of the respondents' identity. Furthermore, no information was customized or changed, hence information was presented as collected and all the literatures collected for the purpose of this study is appreciated in the reference list. The considerations of ethical issues were necessary for ensuring the privacy and safety of respondents. Among the significant ethical issues considered in the research, process was consent and confidentiality. In order to secure the consent of respondents, all-important details of the study explained its aims and purposes. The respondents are not being forced to participate in the research. The confidentiality of participants ensured by not disclosing their names and personal information in the research.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

This chapter aimed to present empirical results through explaining descriptive statistics, correlation, and multiple regression analysis techniques. It dedicated to describe the demographic characteristics of respondents, data analysis of descriptive results, correlation results, regression results, hypothesis testing and discussion.

4.1Response Rate

Normally, survey questionnaires containing 35 items were distributed for respondents who are currently working in Ethiopian private commercial banks evidence from Addis Ababa city branches to get the relevant data for the study. Among the distributed questionnaires, 159 were properly filled and returned and used for analysis purpose which accounted 95.78 % response rate, but the remaining 7 questionnaires were not returned which accounted only 4.22 %.

Table 3 Response Rate of Respondents

No.	Items	Total	Percent
1	Distributed Questionnaires	166	100
2	Collected Questionnaires	159	95.78
3	Remain uncollected	7	4.22

Source – Own survey 2021

4.2 Demographic Characteristics of Respondents

The demographic factors in this survey constitute gender, age, qualification, and years of experience of respondents in who had account holder employees in private commercial banks in Addis Ababa city**.**

Table 4 Demographic Characteristics of Respondents

Characteristics	Items	Frequency	Percent
Gender	Male	106	66.7
	Female	53	33.3
	Total	**159**	**100.00**
Age	18-25 years	30	18.9
	26-35 years	78	49.1
	36-50 years	46	28.9
	Above 50 years	5	3.1
	Total	**159**	**100.00**
Education Level	Bachelor Degree	136	85.53
	Master and above	23	14.47
	Total	**159**	**100.0**
Work Experience	1- 4 years	37	23.3
	5-8 years	53	33.3
	9-10 years	50	31.4
	11 years and above	19	11.9
	Total	**159**	**100.0**

Source – field survey 2021

4.2.1 Gender Distribution of Respondents

From the total respondents of 159, 106 (66.7%) are males, whereas 53 (33.3%) of respondents are females. As it can be seen from table 4, there is an unbalanced sex distribution of respondents.

4.2.2 Age Distribution of Respondents

The above table 4 shows that 30 (18.9%) from the total respondents of 159 are within 18-25 years old, the majority 78 (49.1 %) are between 26-35 years, 46 (28.9%) are within 36-50 years and the remaining 5(3.1%) are above 50 years' age.

4.2.3 Qualification Distribution of Respondents

The above table 4 shows that 136 (85.53%) from the total respondents of 159 have degree, and the remaining 23 (14.47%) are masters and above. Thus, we can understand that the majority of the respondents are first degree holders.

4.2.4 Work Experience of Respondents

Table 4 above indicates that 37 (23.3%) of respondents have work experience in the range of 1-4 years, the majority 53 (33.3 %) of the respondents have from 5-8 years of experience, 50 (31.4%) of the respondents have from 9-10 years of experience and 19 (11.9%) of the respondents have above 10 years of experience. We can conclude that more than half of the respondents have considerable work experience, skills and knowledge.

4.3 Analysis of Descriptive Statistics

The descriptive statistics discovers to examine valid (N) of observations, mean and standard deviation of the respondents in the investigation.

This descriptive statistics is convenient to measure the uniqueness of data based on the distribution of two categories measurement: measures of central tendency or location (mean); which measures the spreading and dispersion (standard deviation, and variance) of the result. The study focused on interpreting the value of the mean and standard deviation in line with the general concepts. The mean score is the simple average of all values in a given distribution. A low score of mean indicates disagreement of responses and a high score of mean represents agreement of responses.

The study used Field (2009) evaluation of mean score below 2.5 is considered as low, from 2.5 - 2.99 are considered as moderate, and above 3.00 are considered as high. The standard deviation indicates the distribution of observations around the mean and represents the degree of consistency and similarity among respondent responses.

Table 5 Descriptive Statistics

	N	Mean	Std. Deviation
Risk Understanding	159	3.94	.587
Risk Identification	159	3.88	.561
Risk Assessment and Analysis	159	4.01	.742
Risk Monitoring	159	3.89	.549
Risk Evaluation	159	3.64	.697
Credit Risk management effectiveness	159	3.74	.679

Source – field survey 2021

The above table 5 shows the means and standard deviations of determinant factors risk understanding, risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation which influence credit risk management effectiveness rated by respondents.

The researcher used the five point Likert's scales rate ranging from 5= strongly agree, 4=Agree, 3= Neutral, 2= Disagree, 1 = strongly disagree. We can assume that agreement with positively-worded items performed and disagreement with negatively -worded items performed.

As shown in the above table 5 , the responses of respondents for the independent variables risk understanding, risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation have high mean value between 3.64 to 4.01 and standard deviation from .549 to .742 according to Field (2009) as explained above notification which indicates the variation of respondents response for credit risk management effectiveness is low.

4.4 Analysis of Relationship Results

The association or correlation measures the relationship between two items according to Field (2009). This is the way to specify the degree to which two or more variables are related to each other. The researcher used the most widely used bi-variant correlation statistics called Pearson product movement correlation. According to Cohen (1992) Pearson correlation, Correlation (r) from +1 to -1, if +1 or -1 meaning perfectly positive or negative relationship, when 0 no relationship.

Correlation (r) between -.3 to .3--- weak relationship
Between -.5 to -.3 or .3 to .5 --- Moderate relationship
Between -.9 to -.5 or .5 to .9 --- strong relationship
Between -1.0 to -.9 or .9 to 1.0 --- very strong relationship

4.4.1 The Relationship between Risk Understanding and Effectiveness of Credit Risk Management

As indicated in the study below in table 6, it shows that there is strongly and positively related ($r = .501$, $p < .01$) between the variables of risk understanding and credit risk management effectiveness in 99 % level of confidence. This relationship clearly shows that as the risk

understanding increases, the credit risk management effectiveness also moves in the same direction. The reverse is true that as risk understanding decreases, the credit risk management effectiveness also moves in the same reverse direction.

4.4.2 The Relationship between Risk Identification and Effectiveness of Credit Risk Management

Table 6 below indicates that there is significant, moderately and positively related (r = .493, P < .01) between the variables of risk identification and credit risk management effectiveness in 99% level of confidence. This relation clearly shows that as the risk identification increases, the credit risk management effectiveness also moves in the same direction. The reverse is true that as the risk identification decreases, the credit risk management effectiveness also moves in the same reverse direction.

Table 6 Correlation Coefficients

		RIUNDSTAD	RISIDETFN	RIASSANAL	RISMONTR	RIEVALUATN	CREDRISMGT
RIUNDSTAD	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	159					
RISIDETFN	Pearson Correlation	.716**	1				
	Sig. (2-tailed)	.000					
	N	159	159				
RIASSANALZ	Pearson Correlation	.864**	.671**	1			
	Sig. (2-tailed)	.000	.000				
	N	159	159	159			
RISMONTR	Pearson Correlation	.800**	.689**	.847**	1		
	Sig. (2-tailed)	.000	.000	.000			
	N	159	159	159	159		
RIEVALUATN	Pearson Correlation	.443**	.343**	.648**	.576**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	159	159	159	159	159	
CREDRISMGT	Pearson Correlation	**.501****	**.493****	**.738****	**.636****	**.659****	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	159	159	159	159	159	159

**. Correlation is significant at the 0.01 level (2-tailed).

Source – Field survey 2021

4.4.3 The Relationship between Risk Assessment and Analysis and Effectiveness of Credit Risk Management

The above table 6 shows the relationship between risk assessment and analysis and credit risk management effectiveness ($r = .738$, $p < .01$) is positive and strong relationship as explained in section 4.4 in 99 % level of confidence. This relation indicates that as the risk assessment and analysis increases, credit risk management effectiveness also moves in the same direction. The reverse is true that as the risk assessment and analysis decreases, credit risk management effectiveness also moves in the same reverse direction.

4.4.4 The Relationship between Risk Monitoring and Effectiveness of Credit Risk Management

As indicated in the study above in table 6, it shows that there is strongly and positively related ($r =.636$, $p <. 01$) between the variables of risk monitoring and credit risk management effectiveness in 99 % level of confidence. This relationship clearly shows that as the risk monitoring increases, credit risk management effectiveness also moves in the same direction. The reverse is true that as the risk monitoring decreases, credit risk management effectiveness also moves in the same reverse direction.

4.4.5 The Relationship between Risk Evaluation and Effectiveness of Credit Risk Management

Table 6 indicates that there is significant, strongly and positively related ($r = .659$, $P < .01$) between the variables of risk evaluation and credit risk management effectiveness in 99% level of confidence. This relation clearly shows that as the evaluation increases, credit risk management effectiveness also moves in the same direction. The reverse is true that as the evaluation decreases, credit risk management effectiveness also moves in the same reverse direction.

4.5 Assessment of Assumptions of Multiple Regression

4.5.1 Normality

Normality shows a symmetrical, bell-shaped curve that has the highest frequency of scores around in the central combined with smaller frequencies toward the extreme. It describes symmetrical distribution of data. If the dependent variable is not normally distributed, there would be few points in performing the regression analysis and if the dependent variable of the effectiveness of internal audit is not normally distributed, there is few points carrying out regression analysis because the main postulation of the model is violated (Brooks, 2008).

According to this study as indicted in Figure 2 below, it indicates that the histogram's shape approximates a bell curve, which indicates that the data used in the study is normally distributed.

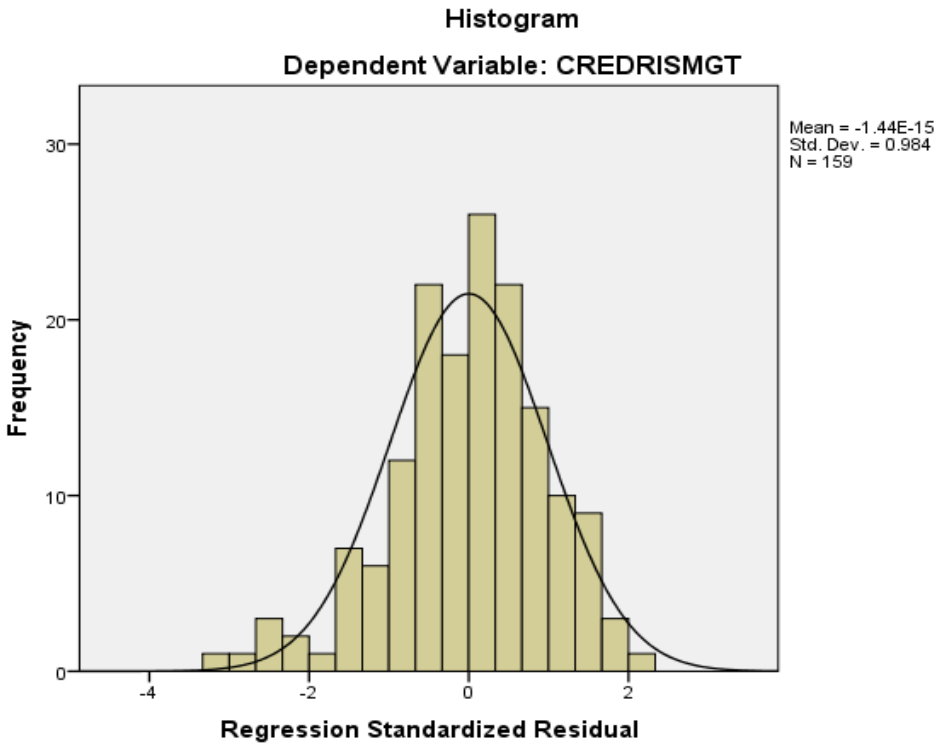

Figure 2 Normality Test

Source – Field Survey 2021

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4.5.2 Linearity Test

Linearity refers to the degree to which the change in the dependent variable is related to the change in the predicted variables (Saunders, et al., 2003). For this purpose, a normal probability plot is used to test this assumption. That is if the distribution is normal, the points on a plot fall close to the diagonal reference line. In the case of this study as indicated in Figure 3 below, there is a linear relationship between the independent variables and the dependent variable under the study which fulfills the assumption of linearity

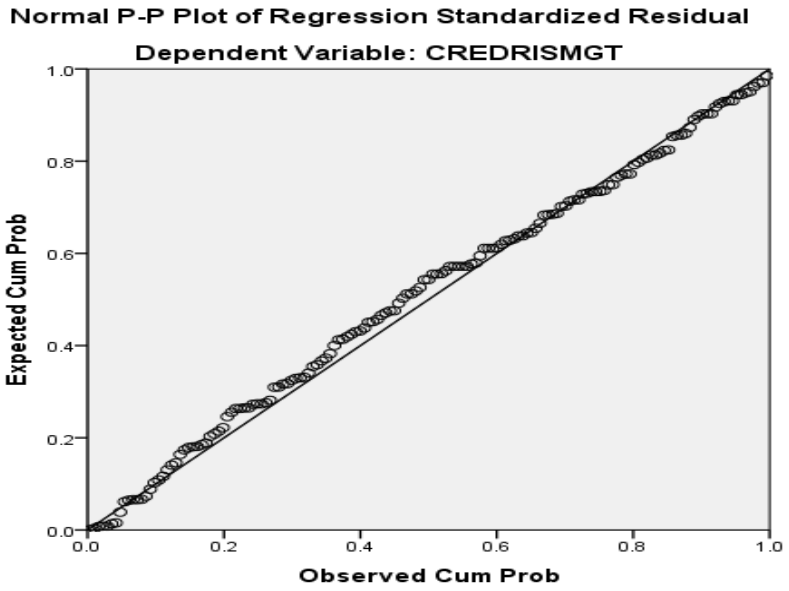

Figure 3 Linearity Test

Source – Field survey 2021

4.5.3 Homoscedasticity Test

According to Field (2009), the variance of the residual term must be constant and the assumption has been measured by the plot of standardized residuals compared to standardized predicted values. The relationship result of a phenomenon can be represented by different means of visualization. Therefore, using scatter plot is one way to visualize inspection of relation between two variables. As it is perceived from figure 4 below, the points in the scatter plot form almost straight line and evenly concentrated in the scattered diagram and there is not an evidence of a funnel like shape of points in one side than the other side is looked. This shows that there is homoscedasticity in the data confirmed under the study.

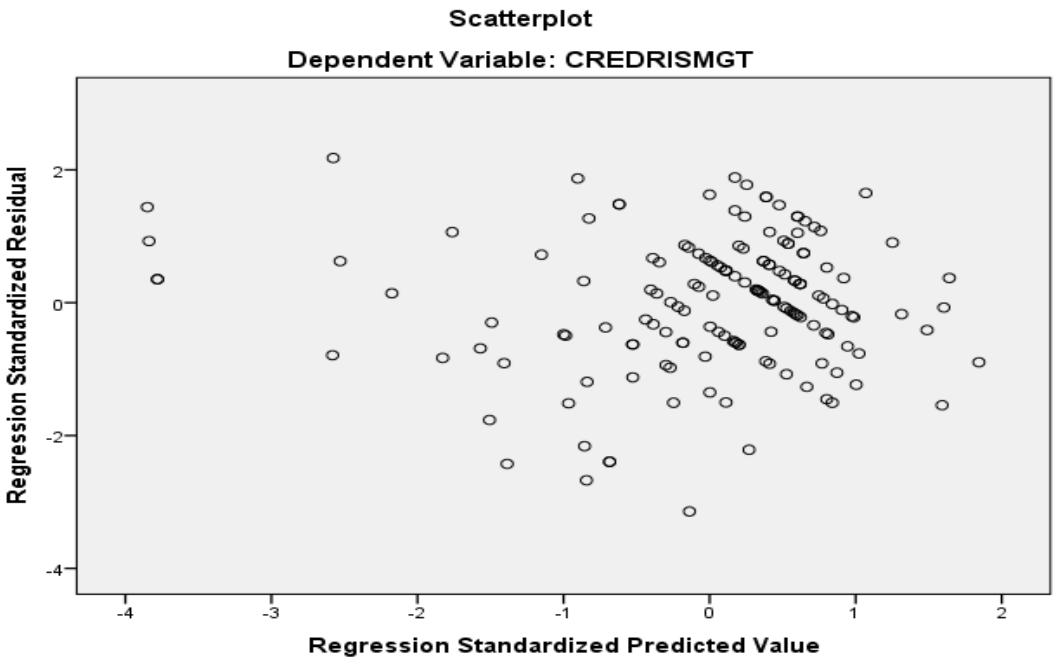

Figure 4 Homoscedasticity Test

Source – Field Survey 2021

4.5.4 Multi-Co linearity Diagnostics

The predictor variables must not have very high relationship or correlation in the agreements of multiple linear regressions. When the predictor variables are extremely associated, it is considered as a problem in the model and this problem is called multicollinearity. According to Gujarati (2004), he showed that the presence of multi-Co linearity can be recognized by investigating the values of substantial correlation (R>.9) and zero correlation between independent variables, tolerance below 0. 1 and Variance Inflation Factors (VIF) over 10.

Table 7 Multicollineality Test

Model		Co linearity Statistics	
		Tolerance	VIF
1	risk understanding	.196	5.101
	risk identification system	.445	2.248
	risk assessment and analysis	.142	7.020
	risk monitoring system	.241	4.142
	risk evaluation	.509	1.964
	Credit risk management effectiveness	.436	2.348

a. Dependent Variable: CREDRISMGT

Source – Field survey 2021

The study in table 7 above displays the value of VIF and tolerance ranges from 1.964 to 7.020 and .142 to .509 respectively. All values fall within the acceptance range (VIF = 1 - 10, or tolerance = 0.1 – 1.0) which shown that there is no multicollineality problem in the regression model used for this study is adequate and the model was fit. Therefore, the researcher concluded that there is no multicollineality problem under this study.

4.6 Analysis of Multiple Regression

The researchers designed to fit a predictive model to the data and use that model to forecast values of the dependent variable from one or more independent variables Brooks (2008). According to this research, analysis of multiple regressions was directed for analyzing the mutual effect of independent variables (risk understanding, risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation) on the dependent variable of the effectiveness of credit risk management.

Table 8 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.812[a]	.659	.648	.40338	.659	59.166	5	153	.000	1.873

a. Predictors: (Constant), RISEVALUATN, RISIDETFN, RIUNDSTAD, RISMONTR, RIASSANALZ
b. Dependent Variable: CREDRISMGT

Source – Field Survey, 2021

The above table 8 shows that the combined effect of the independent variables observed on the dependent variable. The adjusted R squared was found to be .648 which means that 64.8 % of variation in the dependent variable of credit risk management effectiveness can be explained by the five independent variables (risk understanding, risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation). That means, of the major determinants of the dependent variable, 64.8 % can be recognized to the five independent variables under the study and the remaining 35.2 % of determinants are not explained in this study.

Table 9 ANOVA for Regression

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	48.136	5	9.627	59.166	.000[b]
	Residual	24.896	153	.163		
	Total	73.032	158			

a. Dependent Variable: CREDRISMGT

b. Predictors: (Constant), RISEVALUATN, RISIDETFN, RIUNDSTAD, RISMONTR, RIASSANALZ

Source – Field Survey, 2021

This model examines whether the complete multiple regression model is a good fit for the data (Field, 2009). Table 9 represents the report of ANOVA on the general significance of the model. The result of the model gives a significant result $F(5, 153) = 59.166$, $p < .001$ by which it indicates that the independent variables under the study can significantly affect the dependent variable of credit risk management. Therefore, the combined effects of independent variables (risk understanding, risk identification system, risk assessment and analysis, risk monitoring system, and risk evaluation) significantly predict the dependent variable (effectiveness of credit risk management) under the study.

Table 10 Coefficients of the Five Determinants

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.221	.259		.853	.395
	risk understanding	.624	.123	.539	5.055	.000
	risk identification system	.181	.086	.149	2.112	.036
	risk assessment and analysis	.459	.163	.418	7.103	.000
	risk monitoring system	.102	.119	.082	.858	.392
	risk evaluation	.236	.064	.224	3.383	.001

a. Dependent Variable: CREDRISMGT

Source – Field Survey, 2021

It is clear that if Beta value of the study is positive, it can be concluded that there is a positive relationship between the predictor variables and the dependent variable; while the coefficient is negative, it represents a negative relationship (Field, 2009).

According to this finding, the four predictors (risk understanding, risk identification system, risk assessment and analysis, and risk evaluation) have significant and positive coefficient of beta values indicating that they have positive effect on effectiveness of credit risk management under the study while one predictor risk monitoring system has insignificant alpha valve which indicated that it has no any effect on credit risk management under the study.

The equation of the following multiple regression model was conducted to measure the effect of five independent variables on the dependent variable under the study (Kothari, 2004).

$Yi = Bo + b1X1 + b2X2 + b3\ X3 + b4\ X4 + b5\ X5 + e$

This model was used to examine the relationship between the explanatory variables with effectiveness of credit risk management.

Yi = dependent variable (credit risk management effectiveness)

b0 = Constant

b1, b2, b3, b4, and b5 = regression coefficient (Slope of line) of each variable,

X1= risk understanding

X2= risk identification system

X3 = risk assessment and analysis

X4 = risk monitoring system

X5 = risk evaluation

e = Error

Table 15 indicates that the "B" value delivers coefficients of (B1, 2, 3, 4 & 5) and the following regression model equation was constructed using 'B' coefficients.

Credit risk management effectiveness = .221+ .624X1 + .181X2 + .459 X3 + .236 X5

The 't' value in standardized coefficients for risk understanding ($t= 5.055$, $p < 0.01$) indicates that the influence level of risk understanding on the effectiveness of credit risk management

effectiveness and explained as a one-unit increase in risk understanding will result 5.055 increase in the credit risk management effectiveness.

The 't' value in standardized coefficients for risk identification system ($t = 2.112$, $p < 0.05$) indicates the influence level of risk identification system on the credit risk management effectiveness and explained as a one-unit increase in risk identification system will result 2.112 increase in the credit risk management effectiveness.

The 't' value in standardized coefficients for risk assessment and analysis ($t = 7.103$ $p < 0.01$) indicates the influence level of risk assessment and analysis on the credit risk management and explained as a one-unit increase in risk assessment and analysis will result 7.103 increase in the credit risk management effectiveness.

The 't' value in standardized coefficients for risk evaluation ($t = 3.383$, $p < 0.01$) indicates the influence level of risk evaluation on the credit risk management and explained as a one-unit increase in risk evaluation will result 3.338 increase in the credit risk management effectiveness.

4.7 Hypothesis Testing and Discussions

The researcher has formulated five hypotheses to be tested. Based on the result of the multiple regression analysis standardized coefficients, the hypotheses have been tested as follows**:**

Ha1. Risk understanding has a significant and positive effect on credit risk management effectiveness in Ethiopia private commercial banks.

The multiple linear regression analysis model in table 10 indicates that risk understanding has made a significant contribution to the credit risk management effectiveness with standardized coefficient of (Beta=.539, p<.01). This value shows that risk understanding improves by one unit; the credit risk management effectiveness improves by .539 units assuming all other predictors remain constant. This result confirms the findings of (Khalid and Amjad, 2012; and Al-Tamimi and Al-Mazrooei ,2007) . The finding also supports the conclusion of risk understanding has a significant and positive effect on credit risk management effectiveness under the study.

As the result, the researcher rejects the null hypothesis and agrees to take the alternative hypothesis.

Ha2. Risk identification system has a significant and positive effect on credit risk management effectiveness in Ethiopia private commercial banks

The multiple linear regression analysis model in table 10 shows that risk identification system has made a significant contribution to the credit risk management effectiveness with standardized coefficient of (Beta=.149, p<.05). This value shows risk identification system improves by one unit; the credit risk management effectiveness improves by .149 units, assuming all effects of other predictors remain unchanged. This result confirms the findings of (Tchankova (2002); and Al-Tamimi and Al-Mazrooei, 2007). The finding also supports the conclusion of risk identification system has a significant and positive effect on credit risk management effectiveness.

As the result, the researcher rejects the null hypothesis and agrees to take the alternative hypothesis.

Ha3. Risk assessment and analysis has a significant and positive effect on credit risk management effectiveness in Ethiopia private commercial banks.

The multiple linear regression analysis model in table 10 indicates that risk assessment and analysis have made significant contribution to the credit risk management effectiveness with standardized coefficient of (Beta=.418, p <.01). This value shows that risk assessment and analysis improves by one unit; the credit risk management effectiveness improves by .418 units assuming all other predictors remain constant. This result confirms the findings of (Al-Tamimi (2002); and Khan and Ahmad (2001). The finding also supports the conclusion of risk assessment and analysis has a significant and positive effect on credit risk management effectiveness.

As the result, the researcher rejects the null hypothesis and agrees to take the alternative hypothesis.

Ha4. Risk evaluation has a significant and positive effect on credit risk management effectiveness in Ethiopia private commercial banks.

The multiple linear regression analysis model in table 10 indicates that risk evaluation has made a significant contribution to the credit risk management effectiveness with standardized coefficient of (Beta =.224, $p < .01$). This value shows that risk evaluation improves by one unit; the credit risk management effectiveness improves by .224 units assuming all other predictors remain constant. This result confirms the findings of Noraini (2005); Khan and Ahmad (2001); and Kwaku, (2015). The finding also supports the conclusion of risk evaluation has a significant positive effect on the credit risk management effectiveness under the study.

As the result, the researcher rejects the null hypothesis and agrees to take the alternative hypothesis.

Ha5. Risk monitoring system has a significant and positive effect on credit risk management effectiveness in Ethiopia private commercial banks.

According to the result of multiple linear regression analysis as indicated in table 10 revealed that risk monitoring system has no significant effect on credit risk management effectiveness because its significant value is greater than 0.05(.392 >.05); therefore, the alternative hypothesis is rejected and the null hypothesis is accepted. This means that risk monitoring system is insignificantly and positively related to credit risk management effectiveness in the study area. This result contradicts the previous findings of (Pausenberger and Nassauer, 2002; and Nagarajan (2001).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

Based on the analysis found in chapter four through the distributed questionnaires to 166 employees in Ethiopia private commercial banks evidence from Addis Ababa city, the following summary of major findings, conclusions, recommendations were discussed so far.

5.1Summary

The main objective of this study is to examine determinants of credit risk management effectiveness in Ethiopia private commercial banks evidence from Addis Ababa city. Among the distributed questionnaires, 159 were properly filled and returned and used for analysis purpose which accounted 95.78 % response rate, but the remaining 7 questionnaires were not returned which accounted only 4.22 %. The descriptive statistics, correlation and regression analysis were employed. As the result of the analysis of the data, the following findings summarized as follows.

Risk understanding: The finding of the study demonstrates that the mean score is 3.94 in table 5; the effect of this variable on the dependent variable of credit risk management effectiveness (r) is .501 in table 6 and the regression standardized (beta=.539, at p <.01) has a positive and statistically significant effect on the credit risk management effectiveness. This result confirms the findings of (Khalid and Amjad, 2012; and Al-Tamimi and Al-Mazrooei, 2007).

Risk Identification: The research finding of this study revealed that the mean score of risk identification system is 3.88 in table 5; the effect of this variable on the dependent variable of credit risk management effectiveness (r) is 0.493 in table 6 and the regression standardized (beta=.149, at p<.05) has a positive and statistically significant effect on the credit risk management effectiveness. This result confirms the findings of (Tchankova (2002); and Al-Tamimi and Al-Mazrooei, 2007).

Risk Assessment and Analysis: The empirical findings of the study indicated the mean score is 3.91 in table 5; the effect of risk assessment and analysis on the dependent variable of credit risk management effectiveness (r) is 0.738 in table 6 and the regression standardized (beta=.418, at p<.01) has a positive and statistically significant on the credit risk management effectiveness. This result confirms the findings of (Al-Tamimi (2002); and Khan and Ahmad (2001).

Risk Evaluation : The result indicates that the mean score is 3.64 in table 5; the effect of risk evaluation on the dependent variable of credit risk management effectiveness (r) is .659 in table 6 and the regression standardized (beta=.224, at p <.01) has a positive and statistically significant effect on the credit risk management effectiveness under the study. This result confirms the findings of Noraini (2005); Khan and Ahmad (2001); and Kwaku, (2015).

Risk Monitoring: The finding of this study result shows that the mean score is 3.89 in table 5; the effect of risk monitoring on the dependent variable of credit risk management effectiveness (r) is 0.639 in table 6; but the regression standardized beta is insignificant at 95 % confidence level. This result contradicts the previous findings of (Pausenberger and Nassauer, 2002; and Nagarajan (2001).

5.2 Conclusions

The main purpose of this study is examining determinants of credit risk management effectiveness in Ethiopia private commercial banks evidence from Addis Ababa city. Based on the subsequent result analysis and summary, conclusions have been drawn as follows.

- There is a significant and positive effect of Risk understanding on the dependent variable of credit risk management effectiveness and it is found to be the strongest driver factor that influence for credit risk management effectiveness in Ethiopia private commercial banks evidence from Addis Ababa city.
- The beta of risk identification is .149 which shows a strongest contribution (in the same direction) in the explanation of dependent variable by risk identification. The p-value is .036 which is less than .05. Risk identification has significant effects on risk management effectiveness in the study area .

- The Risk Assessment and Analysis techniques so far adopted by the bank is appropriate and effective that most common Risk Assessment and Analysis techniques used by the bank is positive effect on credit risk management effectiveness that was undertaken .
- Most respondents revealed the Risk Evaluation of the bank is in a very good condition except matters that the credit granting and evaluating is influenced by influential persons of the bank which makes decision subjective. It was an understanding of most respondents that influential personnel's involve mainly when they found the client having a potential for the most part.
- There is no a significant and positive effect Risk Evaluation on the dependent variable of credit risk management effectiveness because it is insignificant in its regression value which does not have influence and any effect for credit risk management effectiveness in Ethiopian private commercial banks evidence from Addis Ababa city.

5.3 Recommendations

As indicated in the result of this study, the four determinant factors, risk understanding, risk identification system, risk assessment and analysis, and risk evaluation are significant and positively related to credit risk management effectiveness under the study whereas risk monitoring is insignificant which does not have an effect on credit risk management effectiveness in Ethiopian private commercial banks evidence from Addis Ababa city.

Based on this result, the researcher suggested the following recommendations.

- The bank is advisable assess borrowers past financial history, credit worthiness and perform detail financial analysis before extending loans to avoid non-performing loans. Requesting financial report is not enough by itself. The managers of each bank had better to maintain current established risk management techniques and that employees are expected to perceive in the bank.
- The finding showed that Risk Identification had positive and significant relationship with credit risk management effectiveness of commercial banks, that is, as Risk Identification increases, commercial banks credit risk ratios decrease. This indicates that, the commercial banks management should give due attention in order to increase their Risk Identification with quality to increase their effectiveness in the industry.

- Risk Assessment and Analysis is found to be the determinant factor for credit risk management effectiveness in Ethiopian private commercial banks evidence from Addis Ababa city. Therefore, the management of each bank ought to asses and analysis their effectiveness related to loan and repayment performance in the bank.
- Although risk management is the responsibility of all staff at all levels, there must be an explicit allocation of risk management responsibility to ensure management accountability for risk control. Banks must make risk visible, measurable and manageable and ensure a meaningful risk culture throughout all processes and activities.
- Since Risk Evaluation is found to be the determinant factor for credit risk management effectiveness in Ethiopian private commercial banks evidence from Addis Ababa city. Therefore, each private commercial bank in Ethiopia had better continue the timely evaluation of financial risks to find out measurements to be taken in order to maintain safe balance of loan in the bank.

5.4 Directions for Future study

This study had intended to examine the determinants of credit risk management effectiveness in Ethiopia private commercial banks evidence from Addis Ababa city. To enhance the accuracy of the study, other researchers are recommended to study by adding additional variables and qualitative research method such as key interview.

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Appendix -1 Questionnaires

ADDIS ABABA UNIVERSITY

College of Business and Economics

Department of Management Science

Questionnaires to be filled by employees of private commercial Banks in Ethiopia

Dear Respondents

I am currently a student of Addis Ababa University and I am doing my Master's thesis, on **"determinants** of credit risk management effectiveness in Ethiopia private commercial banks evidence from Addis Ababa city**"**. Your concern and careful completion of the questionnaire will contribute a lot to arrive at a right conclusion. Therefore, you are kindly requested to provide accurate, complete, genuine and reliable information to the best of your knowledge. Feel free to discuss any topic related issues since the data will be used for this specific research only. I assure you that all the information will be kept confidential.

Thank you in advance for your cooperation and timely response!

No.	Background Information	Responses
1	Gender:	☐ Male ☐ Female
2	Age:	☐ 18-25years ☐ 26-35years ☐ 36- 50years ☐ 51 years and above
3	Educational level	☐ College diploma ☐ Bachelor degree ☐ Master and above
4	Work experience	☐ 1-4 years ☐ 5-9 years ☐ 10 years and above

Please, indicate your agreement with each statement based on the 5-point of liker scale 1/ strongly disagree 2/ Disagree 3/ Neutral 4/ Agree 5/ strongly agree.

N.o	Items	Scales				
Part I. Risk Understanding		**1**	**2**	**3**	**4**	**5**
5	There is a common understanding of credit risk management in the bank					
6	There is a proper system for understanding credit risks implementation in the bank					
7	Responsibility for risk management is understood throughout the bank					
8	Accountability for risk management is understood throughout the bank					
Part II. Risk Identification						
9	The bank identifies and prioritizes its main credit risks					
10	The bank registers the identified risk for further assessment					
11	The bank involves different professionals to identify credit risk					
12	The bank gives due consideration to formal brainstorming credit risk identification					
13	The bank gives due attention to the quality of documents submitted by borrowers with respect to the business.					
Part III. Risk Assessment and Analysis		**1**	**2**	**3**	**4**	**5**
14	The bank develops action plans for implementing decisions and management plans for identified risks					
15	The bank uses numerical methods to assess credit risks					
16	The bank effectively assesses the likelihood of different risks occurring					
17	The bank undertake a credit worthiness analysis before executing transaction					
18	The bank‘s risk management process is well documented to provide guidance to staff about the management of risk					
19	The bank has a computer based support system to estimate the earnings and risk management variability					
Part IV. **Risk Monitoring**						
20	Level of control by the bank is appropriate for the risk that it faces					
21	The bank do strict follow up about repayment of the loan performer					
22	The bank monitors the allocation of the loan to the intended purpose and its progress					
23	The bank communicates the credit performers for further actions					
24	The borrower's business performance is regularly observed by the bank following the extension of financing					
25	The existing monitoring process in the Bank considers National bank of Ethiopia compliance issues					

Part V. Risk Evaluation						
26	The bank emphasizes on continuous review and evaluation techniques used in risk management in the bank					
27	The bank accurately evaluates the costs and benefits of taking risks					
28	The bank accurately prioritizes different risk treatments					
29	The bank's response to risk includes an evaluation of the effectiveness of the existing controls and risk management responses					
30	The bank currently has procedures in place to recognize risk and adjust policies accordingly					
Part VI. Credit Risk Management Eeffectiveness						
31	The bank's executive management regularly reviews the organization's performance in managing its credit risks					
32	The bank has highly an effective continuous review / feedback/ on credit risk management strategies and performance					
33	The bank's credit risk management procedures provide guidance to staff about managing credit risks					
34	The bank's policy encourages training programs in credit risk management					
35	An efficient credit risk management is one of the bank's objectives					

Thank You!