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St. Mary's University, Ethiopia

SCHOOL OF GRADUATE STUDIES

THE EFFECT OF CREDIT RISK MANAGEMENT ON PROFITABLITY OF ADDIS CREDIT AND SAVING INSTITUTION

BY

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JUNE 2023

ADDIS ABABA ETHIOPIA

THE EEFECTS OF CREDIT RISK MANAGEMENT ON PROFITABLITY OF ADDIS CREDIT AND SAVING INSTITUTION

BY

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UNDER THE GUIDANCE OF

DR. DEMIS HAILE GEBREAL (PHD)

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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of Dr. Demis HaileGebreal (PHD). All sources of material used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institutions for the purpose of earning any degree.

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Name Signature

St. Mary's University, Addis Ababa **June,2023**

ENDORSEMENT

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

Dr. Demis HaileGebreal _  _____

Advisor Signature

St. Mary's University, Addis Ababa **June,2023**

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LIST OF ACRONYMS

MFI: Microfinance institution

ROA: Return on asset

ROE: Return on equity

CAR: Capital Adequacy Ratio

TLTD: Total Loan to Total Deposit

NPLTL: Non-Performing Loan to Total Loan

NBE: National bank of Ethiopia

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ABSTRACT

This study investigated the effect of credit risk management and Addis Credit and Saving Institution's profitability. The researcher employs panel data regression models with Return on Asset and Return on Equity as the dependent variables along with Nonperforming loan ratio, Capital adequacy ratio, Institution Size, and Total loan total deposit independent variables. This was accomplished by gathering information from the Addis Credit and Saving Institution in Addis Ababa and their published annual report for the years 2017 to 2022. Descriptive statistical methods including mean, maximum, minimum, and standard deviation were used to examine the acquired data. Furthermore, using STATA software, multiple linear regressions were utilized to determine the cause-and-effect relationship between the study variables analysis. The non-performing loan to total loan ratio and capital adequacy ratio were found to have significant negative effects on both return on assets and return on equity, according to the study's key findings. Moreover, Institutional size and the Total Loan to Total Deposit ratio have significantly and favorably impacts the Addis Credit and Savings Institution's profitability as assessed by Return on Asset) and Return on Equity. According to the study, it is advised that Addis Credit and Saving Institution adopt a strict policy for managing credit risk, develop a non-performing total loan management system, and create efficient collective ways for managing loan receivables. This research's expansion would be interesting to pursue with larger sample sizes and new measures of credit risk management and performance.

Key Words: credit risk management; Profitability, Institution Size, Total loan total deposit, non-performing loan total loans, *Capital adequacy*, Return on Asset and Return on Equity.

CHAPTER ONE

1. INTERODACTION

1.1. Background of the study

Microfinance institutions played a significant role in the economy and still do. Their primary function is to put the community's excess deposits and investments to good use by lending money to individuals for a variety of investment goals, including company expansion, education, and housing. They run businesses. Efficiently offer a variety of financial services to make money. Lending is one of the many services that Microfinance institutions perform; it is their main source of income and a significant contributor to their profitability. However, using them poses some danger. Currently, the primary source of income for the banking system is the credit facility offered to consumers, which exposes them to a high credit risk and eventually results in loss.

Credit risk management in financial institutions must be done properly if they are to survive and develop. Because of the increased levels of perceived risk associated with some of their clientele's traits and the business environments they find themselves in, rural banks are particularly concerned about the issue of credit risk. Credit risk management is an organized method of handling uncertainties that includes risk assessment, the creation of risk management plans, and risk reduction using managerial resources. Transferring the risk to a third party, avoiding the risk, minimizing its negative effects, and accepting some or all of its repercussions are some of the ways.

Hull (2007) notes that knowing the portfolio of risks that business is currently exposed to and wants to assume in the future is one of the fundamental building blocks of any organization, but especially of a bank. According to Oldfield and Santomero (1997), risks that affect all financial institutions can be divided into three categories from a management standpoint. These include risk that can be (i) reduced or avoided through standard business procedures, (ii) transferred to other players, and (iii) actively managed at the firm level.

According to Sinkey's analysis from 2002, the five Cs of credit identify measure, price, monitor, and regulate current risk management in the banking sector. Since the majority of the clients in the

rural banking sector are vulnerable to co-variant risk, market risk, and credit risk, this process of risk management is crucial.

The main risk in microfinance, as with every financial institution, is default risk. Churchill and Coster state that MFIs are particularly concerned about credit risk because most microloans are unsecured (i.e., traditional collateral is not frequently used to acquire microloans). Clients of MFIs are people who are unable to obtain credit from banks and other financial institutions because to their inability to offer a guarantee or other form of security for the money borrowed.

Due to the significant default risk for interest and, in some situations, principal repayment, many banks do not grant credit to these types of persons. As a result, financial institutions must create sound credit management, which includes identifying current and future risks associated with lending activity.

The microfinance sector can achieve long-term viability and sustainability through profitability. At the micro level, profitability is a requirement for a vibrant microfinance market and the least expensive source of financing, without which no company would seek outside funding. Profits from MFIs are a significant source of equity, and if they are reinvested, they may help to stabilize the economy. Remarkable profits are essential in guaranteeing MFIs' stakeholders, including investors, borrowers, suppliers, and regulators, by reducing the likelihood of a financial disaster. At the macro level, a successful microfinance sector is better positioned to weather adverse shocks and make a significant contribution to the stability of the entire financial system (Muriu, 2011).

One of the financial industries in the world today with the quickest growth rate is the Ethiopian microfinance business (Pagadala, 2017). The establishment of microfinance institutions proclamation (40/1996), which made it necessary for all such organizations to be registered with the National Bank of Ethiopia, gave rise to the current phenomenon of formal microfinance institutions emerging in Ethiopia.

One of the main issues preventing the development of livelihoods for both rural and urban people, especially the poor, is limited access to financial services (Hermes and Lensink 2007). For two key reasons, the issue is particularly acute in emerging nations like Ethiopia.

First off, the majority of conventional banks in the nation offer financial credit services to individuals with capital. Second, because giving out a small loan entails additional screening, monitoring, and enforcement costs, the formal banking sector routinely ignores the urban poor. In addition, the majority of urban poor people have few or no assets that can be used as collateral by a bank (Shu and Oney 2014). Microfinance, a system that provides small loans to the underprivileged so they can start their own small businesses and earns money, has the power to lessen poverty and encourage entrepreneurship, social development, and economic growth in underdeveloped communities, particularly in rapidly developing nations like Ethiopia (Pagadala, 2017).

1.2. Background of the organization

The current Credit risk management on profitability in Addis Credit and Saving Institution was be reviewed in this study. One of the most well-known MFIs in Ethiopia, Addis Credit and Saving Institution, is located inside the administrative boundaries of Addis Ababa City. In January 2000, it was founded and registered with the National Bank of Ethiopia. Its mission is to promote micro and small businesses to combat poverty and unemployment in the Addis Ababa City Administration territory by offering sustainable financial and other related services, paying special attention to women. Its vision is to actively contribute to efforts to end poverty and to improve the lives of low-income members of society. The majority of the institution’s customers run small businesses and makes meager incomes; and the majority of urban poor people have few or no assets that can be used as collateral by this institution. For these reasons, the institution's customers do not make loan repayments, which put the institution at risk for non-collectability of credit. So, these challenges affect profitability of the Addis credit and saving institution.

1.3. Statement of the problem

A corporate organization's impact is assessed in monetary terms, and the level of its success is directly related to how effectively it manages its financial resources. Management approach designed to keep everything in balance. The impact of credit risk and business profitability on the expansion and survival of the company is profound. Although financial institution managers spend the majority of their time and energy on daily credit management operations, they are unable to properly plan and implement credit policies, supervise loan provision and its associated risks, collect credit, and set the institutions' interest rates.

Effective risk management is essential for the banking industry. Without a question, all banks face significant risks in today's volatile and unpredictable environment, including credit risk, liquidity risk, operational risk, market risk, foreign exchange risk, and interest rate risk (Ali,Akhtar and Sadaqat,2011).

To enable the institution's top leadership set policies to prevent operating losses due to fraud, staff negligence, technology malfunction, or human mistake, comprehensive credit risk management processes are needed. As an example, the management of a microfinance institution might implement internal controls and procedures as well as routine internal audit reviews to make sure that staff members follow rules when carrying out credit risk management activities. Financial hazards faced by financial institutions may also be covered by a credit risk management policy (Schwartz K 2001).

Once it has been discovered and known, one of the fundamental jobs of micro financial organizations is controlling credit risk. As a result, safe and sound operation of a microfinance institution provides a basis for enhancing performance. Effective and sound credit risk management internationally, several empirical investigations are carried out in relation to this subject (Chua et al. 2000).

A financial institution's stability and ongoing profitability depend on sound credit management, whereas declining credit quality is the most common reason for subpar financial performance and condition. As credit criteria become more relaxed, the likelihood of problematic loans rises. Therefore, businesses need to make sure that receivables management is effective and efficient. Delays in collecting money from debtors as it becomes due lead to increased bad debts, major financial issues, and strained relationships with customers. If a payment is received after the due date, profitability will suffer; if it is not received at all, a complete loss will result. In light of this, it is simply wise for firms to strategically handle credit management (Gitman 1997).

Numerous studies on the profitability of MFIs and the management of credit risk have been conducted both domestically and abroad. Some of them are as follows. Strong risk management procedures can aid MFIs in lowering their exposure to credit risk and improving their capacity for industry competition. The results of the two research (Gitman 1997, and Chua et al. 2000) show that there is profit and that credit risk management procedures and MFI financial success are

positively correlated. MFIs can improve their ability to participate in the market by reducing their exposure to credit risk and implementing excellent risk management procedures (Befkadu B. Kereta 2007).

Risk management capacity demonstrates that the creation of current, dependable risk management methods, such as credit scoring, can further improve those management capabilities. Practices in credit risk management increase the profitability of MFIs (Chege 2010). Credit risk management has a positive relationship with financial performance (Otieno and Nyagol 2016).

The lack of a conclusion on the relationship between credit risk management and the profitability of Addis credit and saving institutions has been brought to our attention by relating the profitability of financial institutions. The majority of researchers only looked at one or a few nations and their findings varied. Yet no researcher has conducted the study in Ethiopia. As a result, we determined that there was a research need and committed ourselves to filling it.

In Addis credit and saving institutions Most of the institution's clients are urban poor individuals who run small companies and earn low salaries and have little or no assets that may be utilized as collateral by this organization. Due to these factors, the institution's clients fail to make loan payments, putting the company in risk of having uncollectible credit. Thus, these difficulties have an impact on the Addis Credit and Saving Institution's profitability.

While the aforementioned research findings offer insightful information on credit risk management, they do not explicitly demonstrate the relationship between credit risk management and the profitability of Addis credit and saving microfinance. Even though there have been previous attempts to examine MFIs in Ethiopia, the influence of MFIs on poverty reduction has received most of the attention. However, little research has been done to determine the relationship between CRM practices and the survival and expansion of these microfinance firms. Therefore, this study looked into the connection between CRM techniques and Addis credit and saving institution profitability in Addis Ababa in an effort to close this knowledge gap. In order to fill this information gap, the following questions were investigated in this study: How widely is adoption of which credit risk management metrics in Addis Ababa have an impact on the profitability of Addis credit and saving institution? The goal of this thesis is to examine the relationship between profitability and credit risk management. With the primary goals of managing credit risk and

profitability, this study is intended to close the aforementioned gaps (especially in Addis credit and saving institution sharing firm). The goal of this study is to evaluate Addis micro financing Share Company's credit risk management as a result.

1.4. Objective of the study

1.4.1. General objective

The main objective of this study was to determine the Effect of credit risk management on the financial performance of Addis credit and saving microfinance institutions in Addis Ababa.

1.4.2. Specific objective

- ✓ To investigate the effect of non-performing loan on profitability of Addis credit and saving institution.
- ✓ To examine the effect of Capital adequacy on profitability of Addis credit and saving institution.
- ✓ To determine the effect of liquidity on profitability of Addis credit and saving institution.
- ✓ To test the effects of institution size on profitability of Addis credit and saving institution.

1.5. Significance of the study

The purpose of this study is to evaluate how credit risk affects the profitability of Addis Credit and saving institution over a six-year period (2017-2022). The study was conducted as a result of the negative impact that credit risk has on profitability. It is extremely relevant because it examines how credit risk affects profitability using a judgmental sampling. The study's findings will be used to inform potential recommendations and provide profitability measures to the various stakeholders in order to address the impact of credit risk and improve the quality of financial institutions' assets. Additionally, it fills a gap in the literature by offering insight into the local context by taking into account comparable studies conducted in other nations.

1.6. Scope of the study

The Addis Credit and saving institution, which has branches in Ethiopia's capital city of Addis Ababa, was the subject of the study. Additionally, it was restricted to the impact of credit management on Addis Credit and Saving Microfinance Institution's profitability in Addis Ababa

City Administration. Only the audited financial accounts were used to collect the data. Six (6) years, or from 2017 to 2022 E.C., are covered by it. The decision of this time frame will made so that new findings and results from earlier studies may be obtained using modern panel data.

1.6.1. Geographical scope

Despite the fact that Addis Credit and Saving Institution has 134 domestic branch networks, this study will only pay attention to the Addis Ababa branch. As a result, Addis Ababa will be the study's geographic focus.

1.6.2. Conceptual scope

The Effect of credit risk management on profitability is the conceptual focus of the study. Profitability with the credit risk management from the study's sample will serve as the dependent variable. As a result, the independent variables to be studied include credit risk management indicators such as non-performing loan, Capital Adequacy, Total Loan Total Deposit and Institution size.

1.6.3. Methodological scope

Quantitative data and Secondary data were be used in this study to explore how Profitability affect credit risk management, and an explanatory research methodology will be used to analyze this data. The study was utilizing a simple linear regression model with the assistance of the independent and dependent variables to analyze the effects and correlations STATA.

1.7. Limitation of the study

The primary goal of this study is to determine the effect of credit risk management on Addis Credit and Saving Institution's profitability using panel data (covering the period from 2017 to 2022). In general, the study is not concerned with the experimental detail analysis in all Addis credit and saving institutions. The main drawback of the study was the inaccessibility of key crucial data such as full financial statement and organized data; however, the researcher was able to get over this by making an unreserved attempt to obtain the data.

1.8. Organization of the study

There are five chapters in the research study. The background of the study, the problem statement, the study's objective, research hypotheses, the study's importance, its scope, its limitations, and its organization are all included in the first chapter. Review of related literature will cover in the second chapter. It discusses conceptual framework, theoretical and empirical reviews, and other topics that are significant and directly relevant to this paper. To lay the groundwork for the following chapters, it would be necessary to cover the concepts of Addis credit and saving microfinance institution, credit and credit management, credit risk control, financial performance

& sustainability measures, liquidity management, principles of good lending, general lending procedures, definition of dependent and independent variables, and conceptual framework. They have each had their respective key terms defined and explained. Three chapters later, the research approach is described. The study area, research design, study population, sample techniques, data gathering techniques, data analysis techniques, and variable definitions are all explained. Chapter 4 was covering the findings and discussions. The study's summary, conclusion, and suggestions are presented in Chapter 5.

CHAPTER TWO

2. REVIEW OF RELATED LITRATURE

2.1. Theoretical Literature

2.1.1. The concept of Risk

The primary force behind financial activity is risk. The financial system would be considerably more straightforward without risk. However, in the actual world, risk is always present. For financial institutions to thrive in this environment of extreme uncertainty, risk management must be done effectively the upcoming of financial institution will surely depend on the dynamics of risk management**.** Risks are the unknowns that can cause banks to lose money and go out of business. The Basel Accords state that the risks that banks face include credit risk, market risk, and operational risk. The danger of losing money as a result of a borrower failing to make their payments on time for a loan or other lines of credit is known as credit risk (Basel, 2001).

2.1.2. credit risk

Risk is defined as "the range of the actual return relative to the predicted return associated with a certain asset or investment. “The simplest straightforward way to describe credit risk is as the possibility that a counterparty or bank borrower won't fulfill their obligations under the terms that have been agreed upon. By keeping credit risk exposure within reasonable bounds, credit risk management aims to increase a bank's risk-adjusted rate of return. Banks must manage both the overall portfolio's inherent credit risk and the risk associated with specific credits or transactions. Banks should take into account how credit risk and other risks are related. A thorough strategy to risk management must include the efficient management of credit risk as it is crucial to any financial organization's long-term success. A thorough strategy to risk management must include the efficient management of credit risk as it is crucial to any financial organization's long-term success (Khan and Jain, 2004).

The likelihood that any of a bank's assets, particularly its loans, could lose value and possibly become worthless is known as credit risk. Because banks have low owner's capital in comparison to the entire value of their assets, only a small portion of all loans need to default for a bank to be on the verge of insolvency. Therefore, managing credit risk is crucial to a bank's success as well as the health of the overall financial system. Banks must record loan loss provisions in their books as they make loans. Due to the nature of its operation, banks inherit the oldest and most significant

risk. However, for a number of reasons, this has recently become more significant. The wind of economic liberalization, which is blowing all throughout the world, is foremost among them (R.S. Raghavan, 2003).

Banks are exposed to credit risk when a borrower (customer) doesn't pay their debts in full by the due date or at maturity. If not properly handled, this risk, which is also known as "counterparty risk," has the potential to cause financial trouble for the Bank. By keeping credit risk exposure within reasonable bounds, credit risk management maximizes Bank's risk-adjusted rate of return and offers framework for comprehending the effect of credit risk management on Banks' profitability (Kargi, 2011).

Limited institutional capacity, inappropriate credit policies, fluctuating interest rates, poor management, inappropriate laws, low capital and liquidity levels, direct lending, extensive bank licensing, poor loan underwriting, lax credit assessment, poor lending practices, interference from the government, and insufficient central bank supervision are the main sources of credit risk (Kithinji, 2010).

2.1.3. The concept of credit risk management

Risk management is consequently focused with identifying possible issues and removing or minimizing the harm that they may cause if the issue manifests. Any organization's strategic management initiatives must include risk management as a key component. It is the procedure by which businesses carefully manage the risks associated with their operations in an effort to produce long-term gains for both the individual operations and the portfolio of all operations. The identification and management of these hazards are the main objectives of effective risk management. It raises the likelihood of success while lowering the likelihood of failure and the degree of uncertainty surrounding the accomplishment of the organization's overarching goals (Schwartz, 2001).

The discipline of risk management is used to cope with the potential for future events to be harmful. It offers methods, approaches, and tactics for identifying and dealing with any threats that an organization might encounter while pursuing its objectives. Additionally, it persisted that risk management data be combined with other corporate data, such as feasibility, to make risk management decisions. Transferring risk to a third party, reducing the impact of risk, and

completely avoiding risk are all regarded as risk management tactics. Examples of risk management techniques include diversification, cash reserve maintenance, security system installation, and insurance purchases (Cielens, 2010).

The process of analyzing risk exposure and determining the best way to manage it is known as risk management. Before beginning, every business considers the benefits and drawbacks in an effort to avoid unforeseen events that could result in losses and insolvencies. He defined credit risk management as the process by which managers meet these demands by identifying major risks, collecting consistent operational risk measures, selecting which risks to minimize and which to enhance and by what means, and implementing systems to monitor the resulting risk position (Schwartz, 2001).

Planning, organizing, leading, directing, and regulating organizational resources to achieve predetermined goals when improbable good or bad events are possible is the practice of risk management (Andrew Fight, 2004).

The process of taking measured risks is known as risk management. It is a systematic method that identifies and prioritizes risks and puts mitigation strategies into place. This strategy entails both the early identification of existing issues and the prevention of potential issues. Staff from all levels of the company is involved in the ongoing process. However, as the definition of management goes, it is seen that the majority of definitions, explanations, and notions by specialists simply had to do with identifying, measuring, monitoring, and reducing the exposure of risk (Churchill, 2001).

Understanding the sufficiency of a bank's capital and loan loss reserves at any given time is the practice of minimizing losses in credit risk management, a procedure that has long been difficult for financial institutions. (Saunders & Cornett, 2007) Based on observations made elsewhere in the globe, credit risk has historically been a major concern for banks. The process of risk assessment, measurement, monitoring, and control is known as credit risk management. Banks must manage both the overall portfolio's inherent credit risk and the risk associated with specific credits or transactions. Banks should also be mindful that credit risk is intimately related to other risks rather than existing in isolation from them. Effective credit risk management involves controlling an institution's actions that lead to credit risk exposures in a way that greatly lowers the possibility that such activities would have a negative impact on a bank's capital and earnings.

Credit risk can exist in a bank's other assets and operations in addition to its loan portfolio. Similar risk can be found in a bank's on-balance sheet as well as off-balance sheet accounts (NBE, 2010).

2.1.4. Risk and profitability

Profitability is a business's ability to produce a return on an asset invested. So, return on asset is a financial ratio that shows the percentage of profit that a company earns in relation to its overall resources (Zergaw, 2015).

Risks are typically defined by the detrimental effect that numerous different sources of uncertainty have on profitability. As previously stated, financial institutions primary sources of income or profits were from the loans they made to their clients. This suggests that taking risks is a necessary component of banking, and earnings are indeed a reward for taking calculated risks. On the other hand, high or poorly managed risk can cause bank hardship and failure. Therefore, risks are justified when they are known, quantifiable, under control, and within a bank's ability to withstand negative outcomes. (Guidelines for Commercial Banks & DFIs)

2.1.5. Credit Risk Management Guidelines

Credit risk is the financial exposure brought on by a microfinance institution's reliance on a third party (counterparty) to carry out an obligation in accordance with the terms of the contract. It is the risk to profits or capital as a result of the borrower's late and incomplete loan repayment. Credit risk includes both the loss of principal arising from loan defaults and the loss of income caused by the MFI's inability to collect projected interest profits. Both the risk associated with specific credits and transactions as well as the overall portfolio risk must be managed by microfinance organizations. Microfinance institutions should also be cognizant of the fact that credit risk is not independent of other hazards; rather, it is interwoven with them. For an institution to remain stable, credit risk management must be solid and efficient. Effective credit risk management is the practice of controlling an institution's activities that generate credit risk exposures in a way that greatly decreases the possibility that these activities may adversely affect the capital and profitability of a microfinance institution. Credit risk might exist in a microfinance institution's other assets and operations in addition to its loan portfolio. Similar risk might exist in both the on-balance sheet and off-balance sheet accounts of a microfinance institution (National bank of Ethiopia 2010).

The following strategies are effective for reducing credit risk in MFIs:

- Active board and senior management oversight, cautious loan structuring, borrower screening that is well thought out, close monitoring, clear collection methods, etc. Delinquency should be recognized and swiftly managed to prevent rapid spread and the possibility of considerable loss.
- Good portfolio reporting includes a portfolio at risk aging schedule, distinct reports by product, industry, loan officer, branch, etc. that accurately indicate the status and monthly trends in delinquency.
- Continuing the credit focus (Zergaw, 2015).

2.1.6. Indicators for credit risk management

Different credit risk management indicators exist. The key indications for credit risk management were covered in the section that follows.

2.1.6.1. Portfolio at Risk (PAR)

Portfolio at Risk (PAR), which calculates the percentage of the loan portfolio that is "polluted" by arrears, is the most commonly used portfolio quality metric in the microfinance sector. Although many additional metrics are employed, PAR has become the key indicator. It does not involve risk, is simple to understand, and is comparable between MFIs. If a payment on a microenterprise loan is more than 30 days past due, it is seen as being at risk. Because microfinance lacks bankable collateral, this restriction might be substantially tighter. The formula for calculating PAR is: PAR = (Outstanding balance on arrears over 30 days plus Total gross outstanding Portfolio that has been refinanced or reorganized/Total outstanding gross portfolio. In addition, PAR is a reliable indicator of credit risk management that also divulges details about a company's portfolio quality. It aims to calculate the amount of unpaid debt that an MFI stands to lose in the event that a past-due client fails to make even one installment after the PAR calculation date. The percentage of loans with past-due customers to the organization's total loan outstanding is known as the PAR. Following the example of conventional commercial banks, the leading indicator of loan portfolio quality is now the portfolio at risk > 30 days, which has supplanted the payback rate. The remaining outstanding balance of loans with at least one installment past due for a particular period is compared in this relatively new and useful measure of loan portfolio quality (Wolday et. al 2014).

2.1.6.2. Write-Off ratios (WOR)

Write-Off ratio (WOR) is a crucial sign of portfolio quality. The loans that the institution has withdrawn from its books due to a strong skepticism that they would be recovered are all that this indicator simply signifies. A loan is written off as part of an accounting procedure to stop assets from being unreasonably overvalued by loans that might not be repaid. The total loan portfolio and loan loss reserves are both impacted equally by the writing off of a loan. Therefore, the transaction won't have an impact on total assets, net loan portfolio, costs, or net income unless provision reserves are insufficient. Write-offs have no impact at all on efforts to collect or the client's duty to pay back. The write-off rules of MFIs differ greatly. if a loan is 90 days past due, it is written off. Therefore, it is easier to understand the write-off percentage when seen in the context of an institution's at-risk portfolio. In actuality, its primary function is to act as a control indicator to help assess the risk to the portfolio. The MFIs' final action is to write off accounts that have been past due for an extended period of time. By making book adjustments and taking money out of the Loan Loss Reserve, the outstanding balance of the past-due accounts is decreased during the write-off process. As a result, both the asset side and the liability side of the balance sheet are decreased by an amount equal to the late loan amount after the write-off. In order to avoid assets from being unreasonably exaggerated by loans that may not be recovered, writing off a debt is a necessary accounting procedure. Calculating the write-off ratio is done as follows: WOR = Average Gross Portfolio / Write-Off Amount for a Specific Period (Wolday et. al 2014).

2.1.6.3. Loan Loss Provision Ratio (LLPR)

A bank's level of protection against potential losses can be determined by looking at its loan loss provision coverage ratio. The calculation for LLPR is: LLPR = Principal Amount Written off during Period Average Outstanding Loan Portfolio. A higher ratio indicates that the bank is more resilient to potential losses, particularly unforeseen losses that go beyond the loan loss provision. The Loan Loss Provision Ratio (LLPR), which is expressed as a percentage (%), indicates accrued provision costs (less write-offs) and provides insight into the management's outlook for future loan losses. It shows the loan loss reserve amounts that an MFI maintains to counteract the default risk in its entire (outstanding) loan portfolio, and it serves as a rough indicator of the portfolio's overall quality (Wolday et. al 2014).

2.1.6.4. Non-performing loan ratio (NPLR)

If the borrower misses a payment or is in arrears, the loan is said to be non-performing. The ratio of nonperforming loans to total loans is what matters. It shows how many of the bank's loans and advances are failing, which gauges the severity of the credit default risk the bank experienced. The management of the banks will receive a poor message when this ratio rises because it indicates a strong likelihood that the bank's main asset won't be recovered (Girma 2011).

2.1.6.5. Risk Coverage (RC)

This metric reveals the percentage of the portfolio that is at risk that is actually covered by loan loss reserves.

2.1.7. Risks prevalent in microfinance institutions

Risks associated with financial intermediation must be identified and hedged against by financial institutions, which is a significant problem. Whether or whether they operate in the same business environment, different financial institutions face distinct types and levels of risks. Therefore, in order to maintain its operations, each microfinance bank must identify its own particular set of risks and manage it accordingly. In terms of an MFI, risk management is the act of reducing the possibility and potential severity of an unfavorable event. It entails methodically determining, quantifying, limiting, and keeping track of the risks that an institution faces.

When a new microfinance bank begins operations, services are fairly limited and straightforward. A new microfinance bank tends to be quite aware of the financial dangers it confronts when it is being established, leading it to make an intentional effort to manage those risks. However, when a microfinance bank expands and diversifies its loan portfolios, other risks—aside from the obvious financial ones—often start to materialize. The following three types of hazards have often been highlighted as ones that could affect the microfinance industry. (Fernando 2008)

2.1.7.1. Liquidity risks

Liquidity risk occurs when a microfinance bank is unable to timely and cost-effectively meets its cash needs or payment obligations. Microfinance Banks must be able to match available money to operational requirements, including the volume of loans to be approved and dispensed, the withdrawal patterns of their saving clients (where MFI is permitted to mobilize deposits), and other cash requirements (Craig and Dan 2011).

Each branch of a microfinance bank must create a daily fund plan that directs the daily matching of cash inflows from loan repayment and saving deposits, which typically occur in the afternoon, with cash outflows from drawdown's, customer withdrawals, and operational costs. Any surplus or positive balance should be deposited daily with a correspondent bank, and any projected shortfall should be paid for by taking out cash from the bank as early in the day as possible. To reduce the chance of theft or fraud, the branch should not keep any overnight cash. Each branch should create a monthly fund plan, similar to the daily fund plan, outlining the number of loans to be made, the volume of client withdrawals from savings, and the projected operational costs. The planning process helps the finance department foresee the financing needs of the individual branches, enabling for the early identification of any prospective cash surplus or shortfall faced by the concerned branches. The money should then be relocated to a place where it can address the issue, and any free money that comes up should be invested wisely (Craig and Dan 2001).

2.1.7.2. Market Risks

With GDP, inflation, and money supply as the controlling factors, market risk is subdivided into interest rate risk and foreign exchange rate risk, whose indicators are net interest margin and foreign currency gains or losses, respectively (Fernando, 2008).

2.1.7.3. Operational risk

Operational risk is the danger of suffering losses as a result of poor or ineffective procedures, rules, plans, or circumstances that interfere with business operations. Operational risk can be caused by a variety of circumstances, including employee mistakes, criminal activities like fraud, and natural disasters. Unexpected financial losses could potentially happen as a result of a variety of problems, including inadequate or faulty information systems, operational difficulties, incompetent staff, insufficient skill, intentional breaches, or fraudulent tendencies. The management of such risks necessitates the effectiveness of the internal control system, suitability of the information technology (IT) employed, assurance of employee integrity, and streamlining of operational procedures (Mersland and Strom, 2007).

2.1.8. Management of credit risk and profitability

Profitability is a sign of an MFI's ability to take on risk and/or raise capital. One of the important ideas in this research is profitability. This is because the research's focus is on the connection between profitability and credit risk management. Readers must clearly understand the profitability of MFIs in order to comprehend the meanings and research process. I'll talk

specifically about profitability in this section, along with two indices of profitability used in this study (ROE and ROA).

To assess the profitability of banks or MFIs are by using return on equity (ROE) or return on asset (ROA). The ratio of return on equity (ROE) is calculated by dividing net income (after taxes and excluding any grants or donations) by average equity over a specific period of time, whereas the ratio of return on assets (ROA) is determined by dividing net income (after taxes and excluding any grants or donations) by average assets over a specific period of time (Rosenberg 2009; Mata, 2010).

The factors that affect commercial banks' profitability can be divided into two groups: those that management can influence (internal factors) and those that management cannot influence. The internal factors influence banks' management strategy and decisions with regard to managing sources and uses of funds, capital and liquidity, and expenses. We may apply these categories of factors that determine a commercial bank's profitability to microfinance institutions because they fall into the same category as commercial banks, i.e., both are financial institutions. Financial statements can assess these profitability aspects. Environmental and business-specific elements are included in the external factors. (Guru et.al, 1999) Because our goal is to determine the effect of credit risk management on a firm's profitability, the primary focus of our research is the analysis of internal drivers. Internal policies and decisions that can be evaluated by financial statements should contain the factors that are reflected in credit risk management.

2.1.9. Credit Evaluation

The main strategy for lowering a loan request's credit risk is credit evaluation. This entails assessing the borrowers' financial stability, predicting the likelihood of default, and bringing down the risk of non-repayment to a manageable level. Credit assessments are typically based on the subjective judgment of the loan officer. When a client applies for a loan, bank representatives assess all relevant data to determine whether the loan satisfies the bank's risk-return goals. Credit analysis, which a loan officer uses to assess a borrower's ability and willingness to repay, is essentially default risk analysis.

In a similar vein, Compton (1985) distinguished three key categories of commercial risk analysis in relation to the following issues:

- What risks are parts of how the business operates, specifically?
- In terms of risk mitigation, what have managers done or not done?
- What are the best ways for a lender to arrange and manage its own risks while disbursing money?

The first query forces the credit analyst to compile a list of variables that show what can impair a borrower's capacity to repay the second acknowledges that a borrower's choices have a significant impact on repayment. And the final query compels the analyst to detail risk management strategies so the bank may design a suitable loan arrangement. The five Cs of credit are frequently used by credit analysts at MFIs to concentrate their analysis on the important aspects of an applicant's credit worthiness. Character, Capacity, Capital, Collateral, and Conditions are some of them (Yhip & Alagheband, 2020).

- ✓ **Character:** The applicant's track record of honoring prior financial, contractual, and moral responsibilities. The applicant's character would be assessed based on its prior payment history and any active or closed court judgments against it.
- ✓ **Capacity:** The applicant's capacity to pay back the credit requested. To evaluate the applicant's capacity, financial statement analysis is often done, with a focus on the liquidity and debt ratios.
- ✓ **Capital:** The applicant's financial standing as evidenced by its ownership position. The applicant's profitability ratios and the analysis of its debt to equity are usually used to judge its capital.
- ✓ **Collateral:** The sum of the applicant's available assets that can be used to secure the credit. The more the accessible assets, the more likely it is that a company will be able to recoup its investment in the event that the application defaults. You can assess the collateral by looking at the applicant's balance sheet, asset value evaluations, and any legal claims made against the applicant's assets.
- ✓ **Conditions:** include the present state of the economy, the business climate, and any special situations impacting either party to the credit transaction. For instance, the company might be willing to sell to applicants with less favorable terms or with less creditworthiness if it has surplus inventory of the things the applicant wants to buy on credit. To evaluate the

situation, an analysis of the general business and economic conditions is done, as well as any unique situations that might impact the applicant or firm.

2.1.1.1. Techniques for Credit Collection

In any economic environment, financial institutions must have efficient credit collection methods. The cash flow of MFI can be increased by knowing how to persuade clients to settle their existing loans to financial institutions like banks on time. Therefore, a variety of collection methods are used. In most cases, loan customers are required to make cash payment, make a deposit, or continue making their installment payments in accordance with the contract. The collection effort gets more intense and stringent when the loan account gets past due or overdue. (Christoph 2002) The fundamental methods are:

- ✓ Calls: If a loan client misses the payment deadline, a call to the client may be placed to demand prompt repayment and bring his or her account current.
- ✓ Personal visits: If contacting the consumer via phone does not yield a satisfactory answer, discussing the matter in person can be a very successful collection method.
- ✓ A polite letter reminding the customer of their commitment should be sent if the efforts made thus far have been ineffective and have not yielded a favorable reaction. This should be followed by warning letters outlining the action that needs to be taken moving forward as well as the consequences. For past due and outstanding loan accounts, collection letters are the initial step in the recovery process.
- ✓ Using collection agencies: Businesses might send uncollectible debt to a lawyer or a collection agency for collection. The fees charged for this service are frequently fairly high; on accounts collected in this manner, the firm may only earn less than 50% of the balance.
- ✓ The most rigorous step in the collection process is legal action. Direct legal action is an alternative to using a collection agency because it is not only expensive but also runs the risk of forcing the debtor into bankruptcy, which would reduce the likelihood of future business without ensuring the ultimate receipt of the overdue money.

2.1.1.2. Credit management practice

In order to reduce the amount of capital invested in debtors and the vulnerability of the company to bad debts, credit management is the process of maintaining and putting into practice a set of policies and processes. Optimizing cash flow is a key component of good credit management

strategies since it guarantees stability and maximizes development potential. It includes things like credit staff training, credit policy, client evaluation, credit monitoring, liquidity management, interest pricing, and credit risk control. To attain a preferred economic growth, MFIs utilise resources both profitably and productively when managing credit. In addition, it strives to achieve a fair allocation across the many economic sectors so that the economic fabric can expand without any issues, as stated in the general national objectives and the specific MFI objectives (Hagos, 2010).

1. **Staff Training**

Frontline employees need thorough training from financial institutions in order to evaluate and oversee loans effectively. In light of this, regulatory criteria have been established for all credit union staff members who provide financial products to their consumers to obtain individual accreditation. In order to handle MFIs' and depositors' resources as efficiently as possible, credit management-related staff should receive training, which is essential to improving employees' performance (Laura, 2010)?

2. **Credit Policy**

A credit policy is a set process for granting and collecting credit. It is a written policy that outlines the terms and conditions for lending money or providing products and services on credit, the requirements for qualifying clients, the process for making collections, and the actions to be followed in the event that a customer is in default. This phrase is also known as a collection policy. The MFI should implement a credit policy that tackles the following issues: loan size, credit for infrastructure, portfolio categories, acceptable security, maturity length, compensatory balance, loan territory, and lending authority restrictions (Stephen et al. 2001; 2010).

3. **Client evaluation**

MFIs essentially need to have a solid understanding of the borrower in order to make wise lending decisions. Without these data, MFI is unable to evaluate the loan application. To make sure the borrower complies with the requirements set forth by it, the credit worthiness of the applicants is assessed. Yet, obtaining timely and reliable information about potential borrowers that supports the formulation of such cautious lending decisions has proven to be extremely challenging in

Ethiopia. The creation of a Credit Information Center (CIC), where pertinent information on borrowers is supposed to be aggregated and made available to lenders, is one method for easing this challenge of acquiring accurate and timely information on prospective borrowers. A loan that is correctly made can be considered to be partially collected. So, an MFI should conduct thorough research before making any credit decisions. MFIs must make sure that loans are approved for safe and lucrative projects in light of rising credit risks. They must use their evaluation criteria in this situation. The best credit appraisal will be achieved by combining formal and informal credit appraisal procedures (Hagos, 2010).

4. Credit Monitoring

A decent loan requires that the borrowed money and interest be paid back within the agreed-upon time frame. MFI is required to follow-up on the credit, supervise it, and monitor it in order to guarantee security and payback of the money. An essential component of good credit management is credit monitoring. MFI should always exercise caution to use funds in accordance with the permissions issued. Throughout the term of the loan, MFI remains in contact with the borrower. Although this model helped to lower the transaction cost of screening and monitoring in all three stages as ex-ante, ongoing, and ex-post stages due to the existence of information asymmetry and market imperfections in the financial market, the absence of physical collateral in the microfinance credits, and the relatively limited knowledge of these issues, effective screening and monitoring of the borrowers is a vital component for the optimal allocation of scarce financial resources. To ensure the security of loans, MFIs should concentrate on paperwork, loan disbursement, inspection, statements, annual review, and market information Suzuki et al (2011).

5. Liquidity

The quantity of money those financial institutions always have on hand and can use to satisfy depositor claims is known as liquidity. Liquidity ratios are crucial when analyzing financial accounts and trying to determine where a company stands with regard to its viability. The healthier an MFI is, the greater the liquidity ratio. The money lent shouldn't be kept in a lockup for a very long time, according to MFIs. Due to the fact that MFIs rely on deposited or borrowed funds to operate, they must maintain liquidity while making loans (Omasete, 2014).

Because depositors trust MFIs because of their liquidity, an MFI should be able to turn assets into cash as needed to satisfy their customers' demands. For both healthy financial institutions and troubled ones, liquidity is a crucial evaluation factor. Particularly during economic downturns, MFIs are very concerned about liquidity risk, or the possibility that they won't be able to satisfy their current financial obligations due to a lack of current assets like cash and fast marketable securities. In order to earn profit while simultaneously providing liquidity to the depositors, MFIs must exercise sufficient caution in hedging liquidity risk and make sure that a significant portion of funds are put in higher return-generating investments. Cash investments are the most liquid of an MFI's assets. The suggested ratios for gauging liquidity include deposit to loan ratios, quick ratios, current ratios, and acid test ratios. Both liquidity risk and profitability will be low if the ratio is high (Golin, 2001)

6. Capital Adequacy

Risk-weighted assets called capital are utilized to safeguard depositors and advance the reliability and effectiveness of financial institutions. Additionally, it acts as a buffer to safeguard depositors and to advance the global financial system's efficiency and stability. The MFIs' general financial health and the management's capacity to raise more capital are both reflected in their capital adequacy. It also shows whether MFI has sufficient capital to cover unforeseen losses. Maintaining the trust of depositors and avoiding bankruptcy are crucial goals for microfinance companies. The capital adequacy ratio is a ratio that measures financial strength (Deloof, 2003). There are two different types of capital, according to Basel Committee on Banking Supervision (2000): tier one capital, which can absorb losses without forcing a bank to stop operating, and tier two capital, which can absorb losses in the event of a winding-up but offers less protection to depositors. Profitability is influenced by capital quality and strength. Lower capital ratios undoubtedly indicate greater debt and risk, which raise borrowing rates. In contrast, financial institutions with adequate capital might let the market know that better-than-average performance is to be anticipated. In times of macroeconomic instability, it increases depositor protection and gives additional strength to survive financial crises. A higher equity to asset ratio results in a lesser demand for outside funding, which leads to higher profitability, hence a positive correlation between capital and profits is expected. In general, it is thought that a financial institution with adequate capital will have lower funding costs and a lesser risk of failing.

7. Credit Risk Management

Credit risk is the possibility that an MFI borrower won't fulfill its commitments in accordance with the terms set forth in the agreement. By keeping credit risk exposure within reasonable bounds, credit risk management seeks to maximize an MFI's risk-adjusted rate of return. MFIs must manage both the credit risk associated with the overall portfolio as well as the risk associated with specific credits or transactions. It is important to synchronize the relevant data formats, reporting requirements, and techniques and models for risk analysis. This can be done by offering centralized credit risk management rules. Another method to include credit risk controlling in MFI-wide capital allocation is to establish a credit risk committee. So, the effectiveness of credit risk determines how well a business performs financially.

8. Non-performing Loan A nonperforming loan (NPL)

NPL is a loan in which the borrower is in default due to the fact that they have not made the scheduled payments for a specified period. although the exact elements of nonperforming status can vary depending on the specific loan's terms, "no payment" is usually defined as zero payments of either principal or interest. The specified period also varies, depending on the industry and the type of loan period is 90 days or 180 days. Non-performing Loans ratio = NPL/TL

9. Institution Size:

The market value of all the securities in a fund is its asset size. Assets under management is another name for it. Total assets, which can be impacted by supply, demand, and market return, are reported by funds on a regular basis. The researcher selects institution size as the fourth independent variable. Institutional size was regarded to be a significant factor in studies on the factors that influence an institution's profitability (Athanasoglou et al., 2005; Kosmidou, 2008). Growing size has proven to have some favorable effects on profitability. The size of Addis credit and saving institution, as defined by the log of total asset, has expanded for the past six years, according to study done on the factors affecting the profitability of the institution between 2017 and 2022.

2.2. Theoretical Review

The set of ideas, explanations, and recommendations that relate to the research issue form a thesis' theoretical framework. It might be referred to as the foundation around which the entire research effort is built. The theoretical literature discussed credit risk management theories. Different academics have developed a variety of ideas to explain credit risk management. The theoretical underpinnings of the study variables that were significant to this investigation were covered in the section that followed.

2.2.1. Portfolio Theory

Modern portfolio theory is frequently used to refer to the Portfolio Theory. Financial institutions have been dealing with credit defaults for a very long time. Modern portfolio theory, which Harry Markowitz invented in 1952, is widely applied in both the banking industry and MFIs. To manage exposure caused by interest rate and market fluctuations, the majority of MFIs use value at risk and portfolio at risk. This approach enables investors to evaluate the anticipated risk and return in their investments (Wong, 2013).

By diversifying their stock holdings, shareholders can benefit from the stock market, according to Modern Portfolio Theory (MPT). Their portfolios may be maximized as a result of this. The pricing of risky assets is further discussed. This is not to say that early economists disregarded financial markets. According to this hypothesis, diversifying one's assets is the greatest method to guard against market risk as well as risk that is specific to a given firm (Omisore, Munirat, & Nwufo, 2012).

This theory aids in understanding the connection between a portfolio's level of risk and financial performance and stability. It takes into account how financial product variety reduces credit risk, hence enhancing financial performance.

2.2.2. Liquidity Risk Theory

Prior to any persistent market crisis, liquidity risk represents a significant exposure. It is argued that it is the unmistakable indicator that triggers the explosion of credit risks in addition to market hazards. It is also referred to as the mechanism that transforms widespread financial institution collapses from remote loss trades. No exception can be made for the unprecedented mortgage crisis that hit the US in 2007. Any financial institution should be able to classify and categorize the liquidity risk to which it is exposed, according to Acerbi and Scandolo's 2007

analysis. Microfinance institutions' deals, product portfolio, cash flow reporting, and balance sheet structure all play a significant role in how much liquidity they need and the sources of liquidity they have available to meet those needs. Therefore, in order to prevent a negative impact on its earnings and capital, every financial institution must assess its liquidity position.

2.2.3. Credit Market Theory

The terms of credits must be transparent to the market, according to a neoclassical credit market model. The only price mechanism, if collateral and other constraints (covenants) are held constant, is the interest rate. The interest rate rises when credit is in higher demand and there is a fixed supply of customers, and vice versa. Accordingly, it is thought that the interest premium will increase the greater the borrower's risk of failing (Ewert, 2000).

2.2.4. Firm Characteristics Theories

All other things being equal, these theories state that the number of borrowing relationships will be declining for small, high-quality, informationally opaque, and constrained enterprises (Godlewski and Ziane, 2008). According to Robert and Gary (1994), cited by Hamisu (2011), the most visible signs of failed banks are not low operating efficiency but rather a rise in the proportion of non-performing loans. In collapsed banks, non-performing loans have often been linked to local macroeconomic issues. According to DeYoung and Whalen (1994), referenced in Hamisu (2011) 17, the US Office of the Comptroller of the Currency determined that the quality of management made the difference between failed banks and those that survived or overcame issues. Superior managers not only operate their banks with the utmost efficiency, resulting in significant profits as compared to their counterparts, but they also enforce higher criteria for loan underwriting and monitoring than their competitors, improving credit quality.

2.3. Empirical review

Although numerous scholars have examined the topic of commercial banks' credit risk management in Ethiopia, and out of Ethiopia relatively little research has been done to determine how MFIs' profitability is affected by credit risk management. In the section that follows, an attempt is made to compile all of the material that has been written about how microfinance institutions handle credit risk.

A different study Achou and Tenguh (2008) There is a considerable correlation between financial institutions' performance (in terms of profitability) and credit risk management (in terms of loan

performance), according to studies on bank performance and credit risk management. Performance improves as a result of better credit risk management. Financial institutions must therefore take great care to manage credit risk responsibly, preserve their own assets, and look out for the interests of their investors. The same is true for organizations that provide microfinance. The researchers employ a mixed-methods approach.

Abafita (2003) as a single MFI and case study, Oromia Credit and Savings Share Company (OCSSCO) was discussed in connection to microfinance and loan payback performance. He discovered that the borrowers' overall repayment behavior and screening procedure are sound, and the credit program has positively impacted the borrowers' incomes, access to education, access to healthcare, and nutritional status.

Tinishu Meshesha (2014) studied "Microfinance Credit Rationing and Loan Repayment Performance: A Case of Omo Microfinance Konso Sub Branch the findings of the study revealed that credit schemes have a positive effect on raising borrowers' incomes, levels of education, health, and nutritional status.

Soke Fun Ho and Yusoff (2009), the majority of financial institution and bank losses, according to a study on credit risk management strategies of a few chosen financial institutions in Malaysia, come from customers who are unable to fulfill their obligations in connection with lending, trading, settlement, and other financial transactions. The dealings a bank has with people, companies, financial institutions, or governments give rise to credit risk. Both credit risk and liquidity may be attracted to a bad portfolio.

Gizaw, Kebede and Selvaraj (2015) studied how credit risk affected the Ethiopian commercial banks' profitability. The goal of the study will to determine how credit risk impacted the financial performance of commercial banks in Ethiopia. Data for the study will gathered from yearly reports of eight sample commercial banks and the National Bank of Ethiopia during a 12-year period (2003-2014). Regression using panel data and descriptive statistics will utilized to analyze data. The research's findings indicate that the profitability of commercial banks in Ethiopia will impacted by loan loss provisions, nonperforming loans, credit risk management practices, and insufficient capital.

Sindani (2012) reported that Loan performance is impacted by the credit risk controls implemented by microfinance institutions, credit insurance, the signing of covenants with clients, loan diversification, customer credit ratings, reporting on financial situations, and the decision to forgo additional borrowing. The effectiveness of loans was impacted by the collection policies employed by microfinance institutions; strict policies had a significant influence, while lenient policies also had an impact but not to the same extent as strict ones.

Amanuel (2015) conducted a study to look into the connection between credit risk management and the success of Ethiopian microfinance institutions. This was accomplished by compiling information from 12 MFIs' annual reports, which AEMFI issued from 2003 to 2012. Their proxies have been utilized to test the link between the two abstract ideas. The chosen proxies for profitability are ROE and ROA, and the proxies for credit risk management are PAR>30 days, LLPR, WOR, and RC. The results showed that credit risk management does indeed have statistically significant effects on commercial banks' profitability. LLPR and WOR, two of the four credit risk management proxies, significantly affect ROE and ROA, whereas PAR>30 days and RC have negligible effects.

Adamu, et al (2014) conducted a study on credit portfolio management in microlending institutions utilizing Nigerian lending practices. They discovered that the competent and efficient management of a microfinance bank's credit portfolio is essential to its success. The danger Portfolios turned out to be the root of recurrent issues and the reason for many microfinances banks' collapse. The quality and profitability of assets are not always guaranteed by credit rules, processes, systems, and controls. Therefore, they claimed, a practical approach is required for good loan portfolio management. They suggested that microfinance institutions adopt a practical approach and hire operations research specialists among their staff.

Mwithi (2012) carried of a study in Nyeri County, Kenya, to ascertain the connection between credit risk management procedures and the volume of non-performing loans from microfinance firms. According to the survey, MFIs had a high degree of evaluation and control of credit risk. Additionally, it was discovered that profitability and liquidity had an impact on how well MFIs in Nyeri County managed their institutions' non-performing loans (NPLs), and that asymmetric information in the loan market had a similar impact. According to the survey, a significant number of MFIs in Nyeri County experience NPLs as a result of their failure to enforce covenants. The

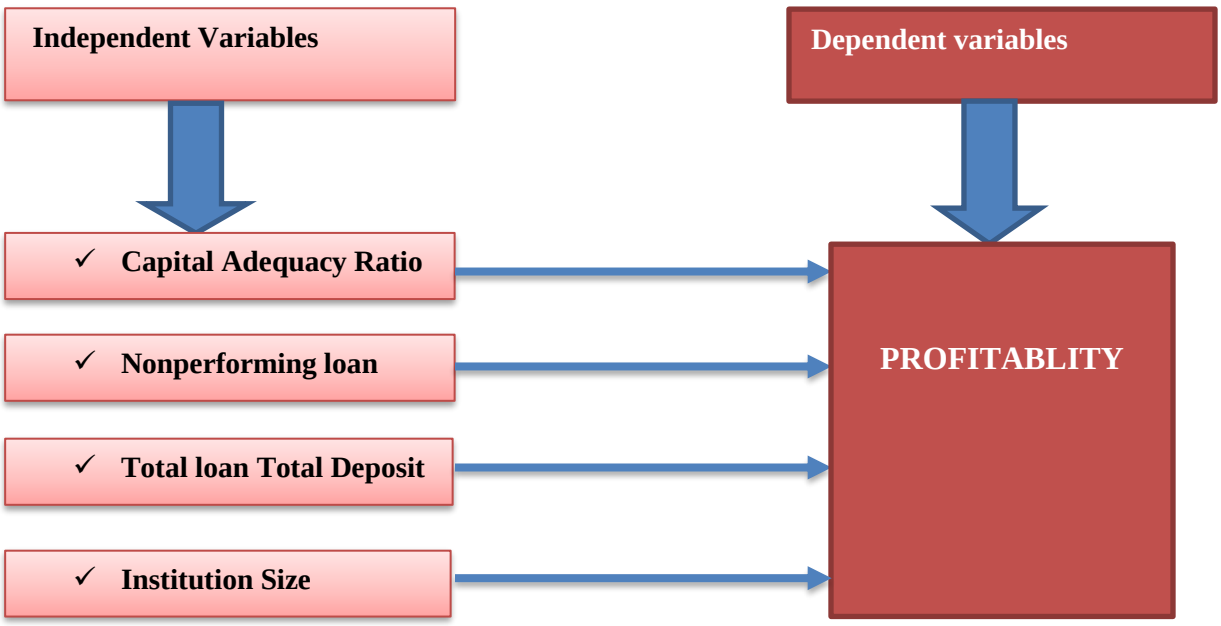
study found that there will a correlation between the level of non-performing loans and the credit risk management strategies used by microfinance institutions in Nyeri County.

Muriu, (2011) investigated the factors affect microfinances profitability. He employed the Generalized Method of Moments (GMM) approach with an unbalanced panel dataset made up of 210 MFIs operating from 1997 to 2008 in 32 different countries. Both ROA and ROE served as stand-ins for profitability. The amount of loans that are 30 days or more past due (PAR>30) and still have interest owed is a measure of credit risk, and it is negatively and strongly correlated with the profitability of MFIs. Therefore, this analysis shows evidence to support the hypothesis that lower MFI profitability is typically related with increasing exposure to credit risk.

2.3. Conceptual framework

Profitability is the dependent variable in this framework, while credit risk management is an independent variable. Capital adequacy ratio, Loan to deposit ratio, Capital loan to total asset, Non-Performing Loan to Total Loan (NPLTL), Loan loss provision ratio, and Cost per loan ratio are the operationalization of the independent variable credit risk management, while Return on Asset and Return on Equity are the operationalization of the dependent variable profitability.

Figure 2.1 Conceptual Framework



Source: Researcher's Description

2.4. Research hypothesis

The following hypotheses were examined in order to answer the aforementioned research question about the effects of credit risk management on the financial performance of Addis Credit and Saving MFI in Addis Ababa.

Hypothesis 1: Liquidity has positive effects and statistically significant impact on profitability of Addis credit and saving institution.

Hypothesis 2: Non-performing loan has negative and statistically significant impact on profitability of Addis credit and saving institution.

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Hypothesis 3: Capital adequacy has Negative and statistically significant impact on profitability of Addis credit and saving institution.

Hypothesis 4: Institution size has positive and statistically significant impact on profitability of Addis credit and saving institution.

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CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

3.1. Research Design and Approach

Examining the effects of credit risk management on the profitability of an Addis credit and saving microfinance organization in Addis Ababa is the main goal of this study. A quantitative approach is utilized in an explanatory research design to accomplish this goal. The researcher was thus able to analyze the effect of credit risk management on the profitability of Addis Credit and Saving Micro-Finance Institution in Addis Ababa thanks to explanatory research design.

As both the independent and dependent variables are measurable, the objective of this chapter is to empirically analyze the quantitative effects of credit risk management on Addis Credit and saving institution Profitability over a six-year period (2017-2022). To this purpose, the hypothesis is tested by measuring the relative weighting of the independent factors taken into consideration here on a dependent variable using multiple linear regressions. This regression model determines how many units of standard deviation are altered in the dependent variables for each unit of standard deviation change in each of the independent variables using the (P) weighting.

3.2. Source of Data

The analysis is based on secondary data taken from published Addis Credit and Saving institution account statements of accounts. For the period (2017-2022), the published accounts, primarily the balance sheet and income statements of Addis Credit and Saving institution, are used.

3.3. Data Gathering Tools

Secondary data sources were utilized in this study to further its goal. It was gathered by an examination of the credit history of Addis and a carefully chosen institution with 6 years of audited reports.

3.4. Sample size and Sampling techniques

The goal of the study was to empirically investigate the effect of credit risk management on the profitability of Addis Credit and Saving institution in Ethiopia Addis Ababa over the course of six years (2017-2022) in order to determine the recent period's short-term effects, which are more advantageous for other MFIs and avoid time bias. Employing the Addis credit and saving institution in the sample systematic sampling approach is a probability strategy.

3.5. Method of Data Analysis

For this study Addis credit and saving microfinance institution is yearly financial records were used to collect quantitative data. After then, the information gathered was sort and adjusted to become the entire data set required for this study. The acquired panel data was then subjected to multiple linear regression analysis and descriptive statistics. The mean, maximum and lowest values and standard deviations of the descriptive statistics were used to examine the overall patterns of the data from 2017 to 2022. The relative significance of each independent variable in explaining the variance in the financial performance of the Addis Credit and Saving Institution in Addis Ababa Was determine using a multiple linear regression model. With the premise that there is a linear relationship between the two variables, regression analysis is a statistical approach used to examine the relationship between a predictor variable or variables and predicted variable(s).

The meaning of a variable is:

Return on Equity (ROE) and Return on Assets (ROA) were employed in this study's regression analysis as indicators of profitability.

- **Dependent variable**

  The return on asset (ROA) ratio compares a company's total assets to its profits before interest and taxes (EBIT). The ratio is regarded as a measure of how well a business uses its assets to produce revenue before it is required to pay contractual obligations. The formula is as follows: ROA=EBIT/Total Assets. A metric of financial performance known as return on equity (ROE) is obtained by dividing net income by shareholders' equity. ROE is referred to as the return on net assets since shareholders' equity is determined by subtracting a company's debt from its assets. The return on shareholders' equity ratio demonstrates how much money is paid back to the owners relative to the amount they initially invested or withheld for the business. The formula is as follows ROE= Net income before tax/ Total Equity.

- **Independent variable**

  Capital Adequacy Ratio (CAR) is the ratio of a bank's capital in relation to its risk weighted assets and current liabilities. It is decided by central banks and bank regulators to prevent commercial banks from taking excess leverage and becoming insolvent in the process.

Liquidity: refers to the ease with which an asset, or security, can be converted into ready cash without affecting its market price. Cash is the most liquid of assets, while tangible items are less liquid. The two main types of liquidity include market liquidity and accounting liquidity.

Non-performing Loan to Total Loan (NPLTL): The ratio of bank nonperforming loans to total gross loans is the value of nonperforming loans (gross value of the loan as recorded on the balance sheet) divided by the total value of the loan portfolio (including nonperforming loans before the deduction of loan loss provisions). . The formula is as follows NPLTL=performing loan/total loan.

Institution Size: The market value of all the securities in a fund is its asset size. Assets under management is another name for it. Total assets, which can be impacted by supply, demand, and market return, are reported by funds on a regular basis. The researcher selects institution size as the fourth independent variable. Institutional size was regarded to be a significant factor in studies on the factors that influence an institution's profitability (Athanasoglou et al., 2005; Kosmidou, 2008). Growing size has proven to have some favorable effects on profitability. The size of Addis credit and saving institution, as defined by the log of total asset, has expanded for the past six years, according to study done on the factors affecting the profitability of the institution between 2017 and 2022.

In the model, the following is the 'a priori expectation':

Table 3.1 Priori Expectation

Variables	***Symbol***	***Expected sign***
ROA	Return on Asset	
ROE	Return on Equity	
NPLR	Nonperforming Loan	Negative
CAR	Capital Adequacy Ratio	Negative
TLTD	Total loan Total Deposit	Positive
SIZE	Institution Size	

Source: Researcher’s Description

CHAPTER FOUR

4. Analysis of the Data, Findings, and Discussion

The findings from the regression output on the correlation between credit risk management and profitability of Addis credit and saving institutions in Addis Ababa are discussed in this chapter along with their interpretation and presentation. To better understand the data, it stated the result of descriptive statistics. The outcomes of statistical analyses use then shown and explained.

4.1. Descriptive statistics

The descriptive statistics of the dependent and independent variables for the Addis Credit and Saving Institution in Addis Ababa from the years 2017 to 2022 are summarized in Table 4.1. The table displays the mean, minimum, maximum, standard deviation, and number of observations for the independent variables Bank Size, Capital Adequacy (CA), Total Loan to Total Deposit (TLTD), and Non-performing Loan to Total Loan (NPLTL), as well as the dependent variables Return on Asset (ROA) and Return on Equity (ROE).

The standard deviation, which demonstrates how much variation there is from the average value, is shown in Table 4.1 along with the average indicators of variables generated from the financial statements. A low standard deviation suggests that the data point tends to be extremely close to the mean, while a high standard deviation denotes that the data point is dispersed throughout a wide range of values, according to Brooks (2008). It displays the variables' summary data from the analysis. The data, which represent average values over multiple years, indicate the major variables' trajectory from 2017 to 2022. According to the report, Addis Credit and Saving Institution's average profit levels between 2017 and 2022 were 10.27 and 31.63 percent, respectively. Additionally, it has been noted that the spread of ROA is 24.99, with maximum and minimum observations of 61.3 percent and 0.045 percent, respectively. With a maximum observation of 188.89 and a minimum observation of 0.143, ROE has a standard deviation of 77.041. With a mean value of 0.015 and a standard deviation of 0.00215, nonperforming loans as a percentage of total loans range from 0.017 percent to 0.0123 percent. Contrarily, the capital adequacy ratio has a mean value of 0.36 and a standard deviation of 0.091, with maximum and minimum value observations of 0.54 percent and 0.28 percent, respectively. Additionally, Institution size has a mean value of 8.26, a standard deviation of 1.78, a maximum value observation of 9.96%, and a lowest value observation of 6.56%. A maximum value observation of

0.78 percent and a minimum observation of 0.37 percent are found for the Total Loan Total Deposit, which has a mean value of 0.54 and a standard deviation of 0.15. The indicator with the greatest spread, as shown by the standard deviation, is Return on Equity (ROE), which has a standard deviation of 77.041. This indicates that the sample Addis credit and saving institutions in our study had a higher variety in their Return on Equity (ROE).

Table 4.1. Descriptive statics

	Mean	Std.Dev	Min	Max
Return on Asset	10.26954	24.99972	0.045054	61.3
Return on Equity	31.62806	77.04088	0.143513	188.8871
Nonperforming loan to Total Loan	0.01534	0.00215	0.012328	0.017279
Capital Adequacy Ratio	0.358739	0.091535	0.284285	0.538172
Institution Size	8.263942	1.78395	6.556085	9.96409
Total Loan to Total Deposit	0.539187	0.149077	0.37417	0.781193

Source: Stata output from Addis credit and saving institution financial statements

4.2. Test Results for the classical linear regression model Assumptions

Different tests were run to make the data ready for analysis and to get reliable output from the research. In this study as mentioned in chapter three different tests were carried out to ensure that the data fits the basic assumptions of classical line regression model. i.e., the CLS assumptions, are fulfilled when the explanatory variables are regressed against the dependent variables. Consequently, the results for model misspecification tests are presented as follows.

4.2.1. Correlation Analysis

(Brooks, 2008) claims that the degree of linear relationship between two variables is measured by their correlation. The Pearson product moment of correlation coefficient was utilized to determine the relationship between the independent factors and the dependent variable. The correlation coefficient between any two variables always ranges from one to one, from positive to negative. An exact positive link between the two variables is shown by a correlation coefficient of one, whereas an exact negative association is indicated by a correlation coefficient of one. On the other side, a correlation value of zero shows that there is no linear link between the two variables. The correlation analysis results for the explanatory factors (i.e., capital adequacy, non-performing loan, loan to deposit ratio, and Institution size) and the dependent variable (ROA) and (ROE) are shown

in the following tables. No-performing loans and the total loan to deposit ratio were favorably connected with ROA and ROE, as indicated in table 4.2 above, with correlation coefficients of 0.346 and 0.795, respectively. This association demonstrates how the ratio of total loans to deposits (LDR) and nonperforming loans (NPL) increased ROA and ROE while also moving in the same direction. Other variables Capital Adequacy and Institution Size had negative correlations with ROA and ROE, with coefficients of (-0.183) and (-0.47), respectively. This suggests that the return on asset changes in the opposite way as the various factors rise. Since there is no correlation above 0.8 in this study according to Cooper and Scheduler (2003) and Lewis Beck (1993), it can be concluded in this study that there is no problem of multicollinearity, thus enhanced the reliability for regression analysis.

Table 4.2. Correlation Matrix of ROA, ROE and Explanatory Variable

	ROA	*ROE*	*NPLR*	*CAR*	*SIZE*	*TLTD*
Return on Asset (ROA)	1					
Return on Equity (ROE)	1	1				
Non-performing loan (NPLR)	0.346	0.346	1			
Capital Adequacy (CAR)	-0.183	-0.183	-0.23	1		
Institution Size (SIZE)	-0.47	-0.47	-0.71	0.257	1	
Total loan Total Deposit (TLTD)	0.796	0.796	0.727	-0.163	-0.784	1

Source: Stata output from Addis credit and saving institution financial statements

4.2.2. Test for Heteroscedasticity

Heteroscedasticity is a systematic pattern in the errors where the variances of the errors are not constant (Gujarati, 2004). Heteroscedasticity makes estimators not efficient because the estimated variances and covariance of the coefficients are biased and inconsistent and thus, the tests of hypotheses are no longer valid. In this study as shown in table 4.3, both the F-statistic and Chi-Square versions of the test statistic gave the same conclusion that there is no evidence for the presence of Heteroscedasticity, since the p-values were in excess of 0.05 which is 0.4533.

Table 4.3: heteroscedasticity

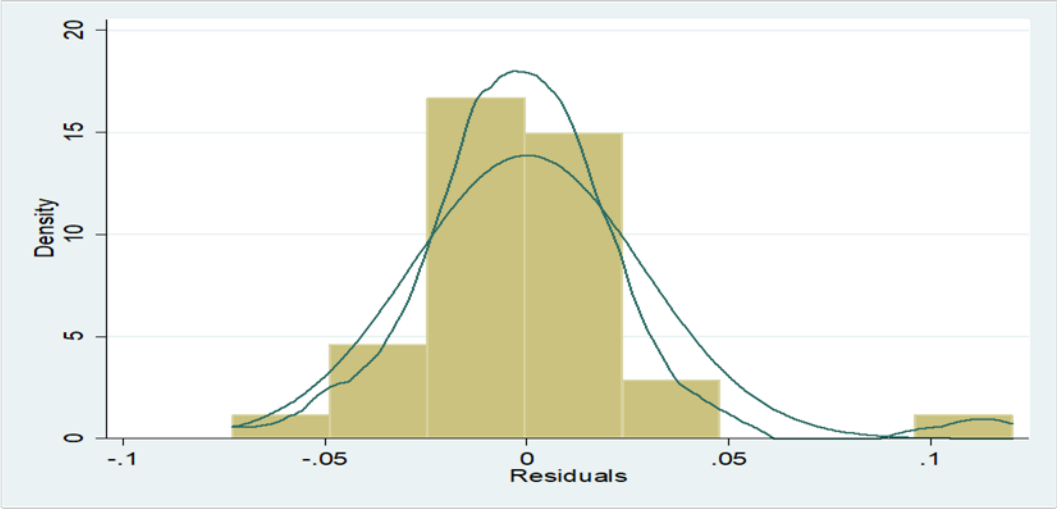
```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of ROA

         chi2(1)      =     0.56
         Prob > chi2  =   0.4533
```

Source: Stata output from Addis credit and saving institution financial statements

4.2.3. Test of normality

One of the assumptions of linear regression analysis is that the residual is normally distributed, at the mean of zero and standard deviation of one. One way of testing normality is using kdensity to produce a kernel density plot with the normal option requesting that a normal density be overlaid on the plot. kdensity stands for kernel density estimate. It can be thought of as a histogram with narrow bins and moving average.

Figure 4.1 Histogram



Source: Stata output from Addis credit and saving institution financial statements

4.2.4. Test for Multicollinearity

Based on table 4.3 multi-collinearity indicates a linear relationship between explanatory variables which may cause the regression model biased (Gujarati, 2004). So as to examine the possible degree of multicollinearity among the explanatory variables, Variance Inflation Factor (VIF) technique was employed to detect the multicollinearity problem and strengthen the analysis.

Besides to correlation analysis multicollinearity problem is also identified by Variance Inflation Factor (VIF). Theoretically, a VIF greater than 10 may suggest that the concerned variable is multicollinear and a variable is less than the level of significance (0.05), then it indicates the variable is multicollinear with others in the model. Hence, the VIF's result in Table below shows none of the VIFs is excessively high, suggests that there is no perfect or strong collinearity between the explanatory variables.

Table 4.4: Variance Inflation Factor

. Vif

Variable	VIF	1/VIF
NPL	2.99	0.334448161
CAR	2.74	0.364963504
TLTD	1.42	0.704225352
SIZE	2.25	0.444444444
Mean VIF	1.88	

Source: Stata output from Addis credit and saving institution financial statements

4.2.5. Hausman Test

The data collected from secondary sources of data were estimated and regressed using the panel model, which included cross sectional and time series observations for Addis credit and saving institution that ranges between the periods 2017 to 2022. Fixed effects and random effects models are commonly used models for the panel data. In order to choose fixed or random effect model a formal test so called Hausman specification test was used which was based on the null hypothesis in favor of fixed effect model estimator. When the test is made it is important to see the p-value because the decision was made on the basis of this value, accordingly if the p value is higher than 0.05 (i.e. it is insignificant) hence random effects is preferable whereas if p value is lower than 0.05 (i.e. it is significant) fixed effect is preferable (Gujarati, (2004)). Hence according to Hausman test for this panel data model shown that, the model is better off if random effect model is used since the p-value for the model is 0.1120, which is greater than 0.05(significant).

Table 4.5 Hausman Test

hausman fe re

Coefficients

	(b) Fe	(B) Re	(b-B) Difference	sqrt(diag(v_b-v_B)) S.E.
NPL	**.237146**	**.2438563**	**-.0067103**	**.1144**
CAR	**.0727458**	**.06428**	**.0084658**	**.0196621**
TLTD	**.0033448**	**.0032139**	**.0001309**	**.0001378**
SIZE	**-.3626406**	**-.3183517**	**-.0442889**	**.0193889**

b=consistent under Ho and Ha; obtained from xtreg
B= inconsistent under Ha, efficent under Ho; obtained from xtreg

Test: Ho: differencev in coefficients not systeamatic

chi2(5) = (b-B)'{ (V_b-V_B)^(-1)](b-B)
= 8.93
Prob>chi2= 0.1120
(v_b-v_B is not positive definite)

Source: Stata output from Addis credit and saving institution financial statements

4.3. Regression Analysis: Results and Discussions

According to the aforementioned correlation test, multicollinearity is not a concern. If the issue doesn't exist, we can move on to the regression analysis and discussion. However, the researcher discovered a heteroskedasticity issue based on the heteroskedasticity test. The researcher set out to address this issue in order to obtained heteroskedasticity robust standard error by using the robust option. In order to ensure the accuracy of the random effects model, the researcher also performed the Husman test. Econometrically, a model is strong and has a high level of predictive power when the overall probability (P) value (Prob > F) is between 0 and 0.05, indicating that significant findings will be obtained when applied in additional research. With Prob > F = 0.00, the model utilized for this study's analysis has a strong predictive power. In table 4.3 below, the estimation outcome of the prais-Winsten regression model utilized in this investigation was displayed. The goodness of fit of the explanatory factors in explaining the fluctuations in profitability as evaluated by ROA was calculated using R-squared. The model's R-squared

statistics were 99 percent, as displayed in the below table. The outcome shows that the explanatory factors in the model explained 99.9% of the variation in the dependent variable. The loan to deposit ratio, capital adequacy, institution size, and non-performing loans all together account for around 99 percent of the variation in return on asset. Other variables outside the model account for the remaining 1% of the variation in profitability (as determined by return on assets). The researcher discovered the estimated regression equation shown in table 4.3 above; ROA=-0.28458+NPLR (-0.24422) +CAR (-0.16533) +SIZE (0.270006) +TLTD (0.977592) …. SUM it

The null hypothesis can be categorically rejected at 1.63 percent level of significance because the p-value was (0.0163), which was sufficiently low and indicates the model's validity and reliability at this level of significance. In addition, F- statistics (21.06) which is used to test the overall significance of the model was presented.The results are displayed in table 4.3 along with the regression coefficients. The results show that all risk management indicators, including Non-performing Loan to Total Loan (NPLTL), Capital Adequacy (CA), Institution Size, and Total Loan to Total Deposit (TLTD), are important in predicting the Addis Credit and Saving Institution's profitability as measured by Return on Asset (ROA). With a beta value of -0.24422 and t value of -16.49, which is significant at 5%, and a beta value of -0.16533 and t value of -14.08, which is significant at 5%, respectively, the nonperforming loan to total loan ratio and capital adequacy have a significant but negative effect on return on asset. With a beta value of 0.977592 and a t value of 82.02, which is significant at 5%, and a beta value of 0.270006 and a t value of 15.56, which is significant at 5%, respectively, the total loan to total deposit (TLTD) and institution size also have a positive and substantial impact on return on asset.

Table 4.3. Regression Analysis

Prais-Winsten AR (1) regression -- iterated estimates

Roe	**Coef.**	**Std. Err**	**T**	**P>t**	**[95% Conf. Interval]**	
Nplr	-0.24422	0.148099	-16.49	0.039	0.432401	-0.56046
Car	-0.16533	0.117446	-14.08	0.045	-0.31456	-0.16096
Size	0.270006	0.173482	15.56	0.041	0.495764	0.490435
tltd	0.977592	0.119195	82.02	0.008	0.826141	0.112904
_cons	-0.28458	0.346011	-8.22	0.077	-0.72423	0.155064
Obs	6					
Prov>F	0.016					

Adj R-square	0.9

Source: Stata output from Addis credit and saving institution financial statements

4.4. Hypothesis test

According to the previously stated hypothesis, Table 4.4 below provides a summary of the discussion above.

Table 4.4. Overview of the hypothesis test

Hypothesis	**Acceptance**	**Remarks**
Hypothesis 1: Liquidity has positive effects and statistically significant impact on profitability of Addis credit and saving institution.	ACCEPT	Significant regression Model (P value of 0.008)
Hypothesis 2: Non-performing loan has negative and statistically significant impact on profitability of Addis credit and saving institution.	ACCEPT	Significant regression Model (P value of 0.039)
Hypothesis 3: Capital adequacy has positive and statistically significant impact on profitability of Addis credit and saving institution.	ACCEPT	Significant regression Model (P value of 0.045)
Hypothesis 4: Institution size has positive and statistically significant impact on profitability of Addis credit and saving institution.	ACCEPT	Significant regression Model (P value of 0.041)

Source: Stata output from Addis credit and saving institution financial statements

The p-values accurately reflect the independent variables' statistical importance in explaining profitability. According to the table above, the non-performing loan to total loan (NPLTL) ratio, a credit risk management measure, has a substantial impact on return on asset (ROA) and return on equity (ROE) by (P=0.039). Non-performing Loan Total Loan (NPLTL) ratio has a considerable impact on Addis Credit and Saving Institution's Return on Asset (ROA) and Return on Equity (ROE). This finding is consistent with Rashid et al.'s (2014) research, which indicated that ROA

and ROE has a strong and negative association with non-performing loans. Capital adequacy and Return on Asset (ROA) and Return on Equity (ROE) have a negative and statistically significant relationship, respectively (P=0.045). Additionally, as shown by (P = 0.008), the Total Loan to Total Deposit (TLTD) ratio has statistical significance in describing the profitability of Addis Credit and Saving Institution assessed in terms of ROA. As a result, the study accepts the hypothesis that the Total Loan Total Deposit (TLTD) ratio has a positive, significant impact on the Return on Asset (ROA) and Return on Equity (ROE) of the Addis Credit and Saving Institution in Addis Ababa. Additionally, as demonstrated by (P = 0.008), the Total Loan to Total Deposit (TLTD) ratio positively influences the profitability of the Addis credit and saving institution as evaluated by ROE. As a result, the study accepts the hypothesis that the Total Loan Total Deposit (TLTD) ratio has a positive, significant impact on the Return on Asset (ROA) of the Addis Credit and Saving Institution in Addis Ababa. Additionally, as demonstrated by (P = 0.008), the Total Loan to Total Deposit (TLTD) ratio positively influences the profitability of the Addis credit and saving institution as evaluated by ROE. As a result, the study accepts the hypothesis that the Total Loan Total Deposit (TLTD) ratio has a positive, significant impact on the Return on Asset (ROA) of the Addis Credit and Saving Institution in Addis Ababa. Additionally, as demonstrated by (P = 0.008), the Total Loan to Total Deposit (TLTD) ratio positively influences the profitability of the Addis credit and saving institution as evaluated by ROE. As a result, the study accepts the hypothesis that Total Loan Total Deposit (TLTD) ratio has a positive substantial impact on Return on Asset (ROA) and Return on Equity (ROE) of Addis Credit and Saving Institution in Addis Ababa. As a result, the study accepts the hypothesis that the Total Loan Total Deposit (TLTD) ratio has a positive, significant impact on the Return on Asset (ROA) of the Addis Credit and Saving Institution in Addis Ababa. Additionally, as demonstrated by (P = 0.008), the Total Loan to Total Deposit (TLTD) ratio positively influences the profitability of the Addis credit and saving institution as evaluated by ROE. As a result, the study accepts the hypothesis that Total Loan Total Deposit (TLTD) ratio has a positive substantial impact on Return on Asset (ROA) and Return on Equity (ROE) of Addis Credit and Saving Institution in Addis Ababa.

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The findings, conclusions, and recommendations of the study are summarized in this chapter. The purpose of the study was to determine how credit risk management affected the Addis credit and saving institutions' profitability as measured by their Return on Asset (ROA) and Return on Equity (ROE) ratios.

5.1. Summary of Findings

The purpose of the study was to examine the impact of credit risk management on the profitability of Addis credit and saving institutions in Addis Ababa, it was stated at the outset of the investigation. We employed proxies for two abstract ideas to evaluate the link between them. The ROE and ROA have been used by the study as stand-ins for profitability. To measure the amount of credit level of the Addis credit and saving institution, the traditional credit risk ratio indicators of Non-Performing Loan to Total Loan (NPLTL), Capital Adequacy (CAR), Total Loan to Total Deposit (TLTD), and Institution Size are used as independent variables. This was accomplished by gathering information from the Addis Credit and Saving Institution's headquarters in Addis Ababa, as well as from their annual report for the years 2017 through 2022, which was made public by an external auditor. The Multicollinearity was examined in order to uphold the data validity and robustness of the research's regressed results. Based on the six years of data, the study created four hypotheses and two regression tests for the two independent variables, ROE and ROA. Multiple linear regression was then used to evaluate these hypotheses, and t-tests for significance showed varying degrees of significance among the independent variables as well as when they were combined, compared to the dependent variable. The following are the key findings of the study regarding each independent variable, as determined by inferential statistics:

- According to the study, the ratio of non-performing loans to total loans (NPLTL) considerably and negatively affects both return on assets (ROA) and return on equity (ROE). It suggests that one should anticipate that NPLTL will rise in line with the expansion of the entire portfolio. The anticipation of loan loss will rise as the loan portfolio expands, which will negatively impact the Addis Credit and Savings Institution's profitability.

- Ratio of total loans to total deposits Findings show that the ratio of total loans to total deposits (TLTD) considerably and positively affects the profitability of MFIs as determined by return on assets (ROA) and return on equity (ROE). Generally speaking, the ratio of total loans to total deposits (TLTD) contributes positively to the statistical significance of the profitability of MFIs as evaluated by ROA and ROE.
- The study's findings regarding the capital adequacy ratio (CAR) revealed that it has a negative and significant impact on both return on assets (ROA) and return on equity (ROE). When ROA and ROE are used as metrics to determine MFI profitability, CAR has a negative statistically significant influence.
- Return on Asset (ROA) and Return on Equity (ROE) are favorably and considerably impacted by Institution Size, the other measure of credit risk management. Size explains the profitability of MFIs as assessed by ROA and ROE in a way that is statistically significant.

5.2. Conclusion

The standard credit risk management measures NPLTL and CAR, which are quantified in terms of ROA and ROE, have a substantial impact on the profitability of MFIs in Addis Ababa, according to the study's findings. The study also comes to the conclusion that the profitability of Addis Credit and Savings Institution in Addis Ababa has a negative association with the two classic credit risk management indicators, NPLTL and CAR.

The profitability of Addis Credit and Saving Institution in Addis Ababa, which is evaluated in terms of ROA and ROE, is significantly impacted by institution size and TLTD, along with the other standard credit risk management indicators. The study also finds a positive association between the profitability of Addis Credit and Savings Institution in Addis Ababa and the two conventional credit risk management indicators, SIZE and TLTD.

5.3. Recommendation.

The study's conclusions led to the following suggestions.

- In order to increase profitability, the report advises Addis credit and saving institution managers to focus on managing and controlling credit risk, particularly the management of non-performing loans. According to the study's findings, the profitability of Addis Credit

and Saving Institution in Addis Ababa is strongly impacted negatively by traditional credit risk management measures, particularly the non-performing loan ratio (NPLTL). Therefore, institution managers may need to increase the NPLTL ratio in order to assist the institution run more effectively.

- The report advises Addis Credit and Saving Institution to develop a strict credit risk management policy and maintain constant awareness of credit risk as a significant risk affecting its performance.
- Addis credit and saving institution should maintain their CAR by decreasing the risk related to the weighted assets.
- In order to increase profitability, the report advises Addis credit and saving institution managers to focus on managing and controlling credit risk, particularly the management of Total loan Total Deposit. According to the study's findings, the profitability of Addis Credit and Saving Institution in Addis Ababa is strongly impacted Positively by traditional credit risk management measures, particularly the Total loan Total Deposit (TLTD). Therefore, institution managers may need to increase the Management of loan receivable in order to assist the institution run more effectively.

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