ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

FACTORS AFFECTING PROFITABILITY OF INSURANCE COMPANIES IN ETHIOPIA

By: Aron Asfaha

ID No.: GSR/2947/16

Advisor: P. Laxmikantham (PhD)

A Thesis Submitted to Addis Ababa University Department of Accounting and Finance Program in Partial Fulfillment of the Requirements for the Degree of Master of Accounting and Finance

June, 2025

Addis Ababa, Ethiopia

STATEMENT OF DECLARATION

I, the undersigned, declare that this is my own work and has not been submitted to any other university, institution or college for academic purposes.

Aron Asfaha Gebremedhin Signature: _____ Date: _____

ID No.: GSR/2947/16

Statement of Certification

This is to authenticate that Aron Asfaha Gebremedhin has conducted the thesis "**Factors Affecting Profitability of Insurances Companies in Ethiopia**." The work is original and fit for submission to Master of Accounting and Finance.

Advisor:

Name: P. Laxmikantham (PhD)

Signature _____ Date May/2025

ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

I hereby authenticate that the thesis entitled: "**Factors Affecting Profitability of Insurance Companies in Ethiopia**" and submitted in partial fulfillment of the requirements for the Degree of Master's of Accounting and Finance complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Approved by

External examiner: Tenkir Seifu Signature _____ Date 16-07-2025

Internal examiner: Takele Dufe Signature _____ Date 16-07-25

ACKNOWLEDGMENTS

First and foremost, I thank God for his unwavering guidance and protection in the middle of the challenges that I faced during the period of this study. His grace and power have been my never-ending inspiration.

I would also like to appreciate my advisor, P. Laxmikantham (PhD), for his invaluable advice, constructive criticisms, and encouragement throughout proposal development process to the completion of this study. His input and guidance have been instrumental in deciding the quality of this research.

I am also really thankful to all the insurance companies who volunteered for this research by completing the questionnaires. Your support and willingness to assist have been instrumental in making this research a success. The last but not the least I thank to my family, friends and my little angel Award Aron.

TABLE OF CONTENTS

LISTS OF TABLES

Title ***Page***

LISTS OF FIGURE

Title ***Page***

ACRONYMS

CAD	-	Canadian Dollar
CDF	-	Cumulative Distribution Function
EIC	-	Ethiopian Insurance Corporation
GDP	-	Gross Domestic Product
GWP	-	Gross Written Premium
IC	-	Intellectual Capital
NBE	-	National Bank of Ethiopia
ROA	-	Return on Assets
ROE	-	Return on Equity
UNCTAD	-	United Nations Conference on Trade and Development

ABSTRACT

This study investigates the factors affecting the profitability of insurance companies in Ethiopia by employing a mixed research design that integrates both primary and secondary data sources. Primary data were collected through structured questionnaires and unstructured interviews, while secondary data were obtained from audited financial statements and reports from the National Bank of Ethiopia (NBE). A systematic random sampling technique was applied to select five insurance companies for analysis. Probit regression was used to assess binary outcomes from the primary data, and panel data regression was applied to evaluate the impact of internal and external variables on profitability. The Probit analysis revealed that educational qualification and technological adoption significantly enhance profitability, indicating the critical role of skilled personnel and digital tools in driving financial performance. However, property damage insurance related to large infrastructure projects was found to negatively impact profitability. Qualitative findings from interviews highlighted recurring challenges such as strict regulatory environments, limited consumer awareness, delayed premium payments, and volatile interest rates. Results from the panel data regression further confirmed that company size positively influences profitability, while high leverage and inflation exert a negative effect. Exchange rate fluctuations showed a modest positive impact. In conclusion, the study underscores the importance of investing in digital technologies, enhancing staff capabilities, and revising underwriting strategies to align with evolving economic and development contexts. It recommends that Ethiopian insurance firms strengthen outreach in rural areas and adopt more adaptive, risk-sensitive business models to improve overall profitability and sustainability.

***Keywords**: Profitability, Insurance companies, Probit, Technology, Corridor development, NBE, Ethiopia, Financial performance.*

CHAPTER ONE

1. INTRODUCTION

This chapter presents an overview of the factor affecting of profitability of insurance companies. The introduction is structured into several broad sections, including: the background of the study, statement of the problem, research objectives, hypotheses, significance of the study, scope of the study, organization of the study, and limitations of the study.

1.1. Background of the Study

Financial institutions like insurance, banks, and microfinances play an important role in the economy through their effective and efficient financial activities such as resource mobilization, intermediation, and risk transfer. Thus, financial institutions, intermediates, buyers, and sellers transfer risks and losses and mobilize funds from one economic unit to other economic units so as to reduce transaction costs and resource arrangements (Yuvaraj & Abate, 2013). According to Naveed, Zulfqar, and Usman (2011), if financial institutions are efficient and effective when they transfer risk and mobilize savings, then they can cause economic growth, whereas failure in financial institutions can cause crises in the financial system, which may result in the crisis of the economy as a whole. Thus, financial institutions like insurance play a role in the economy through financial intermediation, risk dissemination to society, and stabilizing the financial sector in particular, and the economy at large is part of the immune and repair mechanism of the economy.

Insurance firms are part of the financial organizations providing distinct financial services to facilitate the development in the economy. Insurance as a financial activity, a system of risk transfer wherein an insured individual passes an exposure to risk to an insurer against a consideration of premium payment. As the future is never certain, every business and individual are liable to loss by reason of a variety of uncertainties like war risk, obsolescence of goods , fire risk, or other natural calamity and unexpected falls in prices,. Insurance companies provide protection against such risks; reimburse losses, and position businesses and individuals in the same place they were before the occurrence of the loss if the loss occurs (Batool & Sahi, 2019).

Insurance companies are especially important for developing as well as developed countries. The importance of the insurance industry in the economic development is acknowledged in the first United Nations Conference on Trade and Development (UNCTAD) held in 1964 by stating that "a sound national insurance and reinsurance market is an essential characteristic of economic growth.". They help in the transfer of "losses" financially, economic growth, facilitating trade, efficient use of resources, and creation of liquidity (Haiss & Sumegi, 2008). Insurers also significantly contribute to the nation's private sector by using the capital built up in the form of "premiums" for investment (Gulsun & Umit, 2010). As Teklit and Jasmindeep (2017) point out, there are considerable financial intermediary roles by insurance firms in Ethiopia with regard to risk transferring, employment provision, enhancement of private investment, and success of varied development-related initiatives. Performance of a company has been defined as the output of activity and can be measured in different ways (Hunger & Wheelan, 1997). According to Batool and Sahi (2019), performance is a combination of strategic effectiveness and operational efficiency of a specific company. In order to improve performance, the firm should improve production processes, product, services, and market management. This implies that performance can be measured in different ways depending on the purpose for which the information is required. Alam et al. (2011) stated that measurement of performance includes customer-focused performance, financial and market performance, human resource performance, and organizational effectiveness. Therefore, the appropriate measure selected to assess corporate performance is considered according to the organization type and objectives of evaluation.

Damodaran (2021) stated that financial performance continues to be a primary measure of organizational success, with profitability serving as a key indicator. Profitability, which is used as a metric of financial performance, is one of the most important objectives of financial management. Because profitability shows how efficiently and effectively the management uses the invested resources to generate income (Malik, 2011). For insurance companies to sustain themselves in the competitive globalized market, generating profit is very essential; if insurance companies don’t generate profit, then they can’t attract investors and collect capital, which is a prerequisite to meet their objectives (Teklit & Jasmindeep, 2015). The condition of insurance companies’ financial performance is also necessary considering the macroeconomic stability because the insurance industry has an important role in the country’s economic growth and stability (Ana-Maria & Ghiorghe, 2014).

Financial performance of insurance companies is normally indicated in net premiums earned, profitability from return on equity ,underwriting activities, returns on investment, return on assets, and annual turnover (Aster & Meseret, 2019).

National Bank of Ethiopia (NBE), was began to regulate the insurance sector in the 1990s, supervision the growth of private insurance companies. Previously, the government had set up the Ethiopian Insurance Corporation in 1975. Liberalization entered the market through reforms in 1994, opening the doors for private insurers to enter. This led to massive expansion in the sector, with more insurance companies and a greater number of products offered. However, despite all these advances, Ethiopia's insurance industry still faces a myriad of challenges that must be addressed, such as low penetration, low public consciousness, and poor infrastructure in rural areas. As the National Bank of Ethiopia (2023) depicts, the market remains immature and is controlled by some private and public entities.

Therefore, empirical investigation so as to sort out what are key determinants affecting insurance companies' performance is helpful for insurance managers, investors, financial analysts, supervisory authorities, and policymakers for the economic growth as a whole. The concerned bodies can focus on the relevant factors and stabilize the financial system and economy. Factors that affect insurers' profitability are internal factors, which include specific characteristics of the company, industry factors, and external factors that represent macroeconomic characteristics. The purpose of this study is to investigate and identify the important factors affecting Ethiopian insurance companies' financial performance.

1.2. Statement of the Problem

Favorable financial performance of financial institutions is crucial not only for the financial institutions but also for the success of the economy as a whole. Because financial institutions play an important role in the economy through their effective and efficient financial activities such as resource mobilization, intermediation, and risk transfer (Yuvaraj & Abate, 2013). Therefore, financial institutions are not only involved in saving money and transferring risk but also serve as the lifeblood of the economy by channeling and facilitating funds from one organization to another organization so that trade and investment activities in the economy can be facilitated. The insurance sector, in particular, provides unique financial services such as

protection against risks, indemnity of losses, and simultaneously providing long-term funds for physical and social infrastructure (Cudiamat and Siy, 2017).

Good performance of any business or industry is essential, as it raises the market value of the company, which drives towards the growth of the industry and the economy at large. However, especially the performance of insurance businesses is important since insurance businesses stabilize the economy by compensating the loss of other parts of the economy. Furthermore, insurance companies provide economic and social benefits to society as they create trust among the people and businesses by eradicating fear, reducing loss prevention, and creating employment (Demis, 2016). For insurance companies to provide efficient, equitable, safe, and stable insurance service in the interest and protection of the policyholders, the best possible financial performance is a necessity. Other than this, a profit-earning insurance company is able to attract investors, and this increases the financial solvency and therefore the consumers' confidence (Burca & Batrînca, 2014). That is why it is significant to research factors affecting the financial performance of insurance companies.

Ethiopia's insurance sector has developed rapidly over the past few years. For example, from the NBE's report (2023), the insurance business in the capital increased to birr 22.9 billion at the close of 2023. The non-life insurance business also saw a greater gross written premium of approximately Birr 16.6 billion. The Ethiopian insurance business has grown rapidly over the recent years in numbers (18) and branches (741). However, the Ethiopian insurance industry is one of the underdeveloped industries with low levels of penetration, with an estimated 0.3 million formal insurance clients, and according to NBE (2023), out of the Ethiopian population, only 0.3% have access to insurance services. Smith and Chamberlain (2010) stated that the Ethiopian insurance sector ranked the lowest compared to other countries in Africa by contribution to GDP, where South Africa accounted for 15.3%, Namibia 8.1%, Botswana 3.9%, Morocco 3.4%, Kenya 2.5%, Tunisia 2.0%, Angola 1.4%, Egypt 0.9%, Nigeria, Algeria, and Uganda 0.6%, and Ethiopia 0.2%. Nevertheless, the role of the Ethiopian insurance industry in the GDP growth of the country is very limited, representing only 0.5% (Herald Magazine, 2018), even lower than East African standards like the Kenyan insurance industry, which has a contribution to the national GDP of approximately 2.8%. However, at the firm level, there is a fluctuation in profit within every firm of general insurance in the sector. Since the profitability of

any firm is affected by internal and external factors, this fluctuation is then due to internal and external factors.

Investigation of determinants affecting companies' performance has received much attention from academicians, institutional supervisors, and economists. Considering global studies, a large number of studies have been examined on companies' performance, but literature reviews imply that most of these studies focused on the banking sector rather than the insurance industry (Yuvaraj & Abate, 2013).

In developing countries, including Ethiopia, there are insufficient amounts of studies to adequately investigate factors affecting insurance sector profitability. Out of the studies conducted in Ethiopia, research by Simon (2016), Daniel and Tilahun (2013), and Yuvaraj & Gashaw (2013) focus on firm-specific factors and macroeconomic-related variables affecting the performance of insurers, Asrat and Tesfahun (2016), Meaza (2014), Demis (2016), Teklit and Jasmindeep (2017), Hanna (2015), Mistire (2015), Hadush (2015), Suheyli (2015), and Gemachis (2017).

Unlike most of the earlier research, which was greatly dependent on administrative or secondary data, this research employs structured and unstructured questionnaires to capture the seasonality impact on insurance companies?

The contribution of this study is thus three-fold for the reasons that follow:

1) Previous research in Ethiopia largely used secondary sources of data. The present research is different from earlier research in that it is concerned with primary and secondary data.
2) It examines a broad range of seasonal variables including the impact of the July 2024 floating reform of the exchange rate, the technology adoption, the corridor projects in development in progress, climate risk, and political turmoil.
3) There is a lack of sufficient research studies that comprehensively analyze the determinants of profitability of the Ethiopian insurance sector. The current study bridges this gap.

1.3. Objectives of the Study

1.3.1. General Objective

The main objective of this study was to investigate the factors affecting profitability in Ethiopian insurance companies.

1.3.2. Specific Objectives

Based on the above general objective, the researcher raises the following specific objectives

1. To investigate the effect of age on the profitability of selected Ethiopian insurance companies.
2. To analyze the effect of industry concentration risk on the profitability of selected Ethiopian insurance companies.
3. To explore the effect of diversification on the profitability of selected Ethiopian insurance companies.
4. To assess the effect of the transition to a floating exchange rate on the profitability of selected Ethiopian insurance companies.
5. To study the effect of corridor development on the profitability of selected Ethiopian insurance companies.
6. To evaluate the impact of educational background and qualifications of management and staff on the performance of selected Ethiopian insurance companies.
7. To examine the effects of technology adoption on the profitability of selected Ethiopian insurance companies.
8. To determine the insurance companies' readiness for the anticipated challenges posed by new entrants.
9. To scrutinize the effects of GDP on the profitability of selected Ethiopian insurance companies.
10. To explore the effects of inflation on the profitability of selected Ethiopian insurance companies.
11. To assess the effects of company size on the profitability of selected Ethiopian insurance companies.

12. To analyze the effects of company growth on the profitability of selected Ethiopian insurance companies.
13. To evaluate the effects of exchange rate changes on the profitability of selected Ethiopian insurance companies.
14. To examine the effects of leverage on the profitability of selected Ethiopian insurance companies.

1.4. Hypothesis of the Study

To achieve the objectives and solve the problem intended to be solved in this study, the study developed the following eight research hypotheses. These hypotheses are developed based on related previous studies conducted in different countries.

Ho1: The age of staffs has a positive and significant impact on profitability of Ethiopian insurance companies.

Ho2: Industry concentration is negatively and significantly related with Ethiopian insurance companies' profitability.

Ho3: Diversification is positively and significantly related with profitability of insurance companies in Ethiopia

Ho4: Corridor development has negative and significant effect on companies' profitability.

Ho5: Moving to floating exchange rate has negative and significant effect on companies' profitability

Ho6: Educational background and qualifications of management and staff on the performance has positive effect on selected Ethiopian insurance companies.

Ho7: Technology adoption has positive impact on the profitability of insurance companies.

Ho8: Expected new entrant insurance companies negatively affect the insurance companies.

Ho9: GDP has positive impact on the profitability of selected Ethiopia insurance companies.

Ho10: Inflation has negative impact on the profitability of selected Ethiopia insurance companies.

Ho11: Size of company has positive impact on the profitability of selected Ethiopia insurance companies.

Ho12: Growth of company has positive effects on the profitability of selected Ethiopia insurance companies.

Ho13: Exchange rate has negative impact on the profitability of selected Ethiopia insurance companies.

Ho14: Leverage has negative impact on the profitability of selected Ethiopia insurance companies.

1.5. Significance of the Study

The significance of this study immense from the fact that, insurance companies play an important role in improving economy, building confidence of business and individuals, removing anxiety, and spreading loss. Since for insurance companies to provide stable insurance service for the benefit and protection of policyholder's favorable financial performance is a prerequisite, then this study will provide empirical evidence on the factors affecting financial performance of Ethiopian insurance companies. Furthermore, many parties would benefit from the findings of the study.

1. This study is expected to contribute to insurance companies, top management, and academicians by identifying key factors that influence profitability. Accordingly, top management can use this information to enhance profitability.
2. The government can use this study to identify which companies are operating successfully and which have failed, in order to take appropriate measures to prevent crises and bankruptcies.
3. This study may help investors identify companies with strong potential for success and guide them to invest their resources in the most viable options.
4. Customers are interested in understanding the potential financial performance of insurance companies, as this reflects their ability to meet obligations.
5. Finally, the findings of this study can serve as a basis for future research in the area.

1.6. Scope of the Study

This study intends to investigate the determinants of profitability for insurance companies in Ethiopia. The research used primary data, which were collected using a systematic random sampling method. Sampling was conducted based on insurance companies' year of establishment, and companies that were established between 1975 and 2020.From a total of 18 licensed insurance firms in operation in Ethiopia for the period of study, five companies were randomly selected for analysis. Companies with a history of consistent profitability were selected in particular, to guarantee data relevance and comparability.

Geographically, the study is confined within Addis Ababa since the head office and main offices of all the insurance companies are in the capital. Therefore, all data gathering and analysis are confined within Addis Ababa.

1.7. Organization of the Study

This research is organized into five chapters. The first Chapter includes: back ground of the study, statement of the problem, general and specific objectives, hypothesis, significance of the study and scope. The reviews of related literature part are presented in the second chapter. The third Chapter presents the research design and methodology. This is followed by analysis and results of the study which is incorporated in chapter four. And finally, chapter five deals about conclusion and recommendations.

1.8. Limitation of the Study

The result might not be generalizable to all financial institutions because it focuses only in selected insurance companies and delimited geographically to the head offices.

CHAPTER TWO

2. LITERATURE REVIEW

This chapter integrates the existing literature related to the factor affecting of the profitability of insurance companies. It discusses the relationship between various factors and the profitability of insurance firms, providing the basis for conducting the study in the context of existing research. The literature review is arranged in four general sections: theoretical literature, empirical literature, conceptual framework of the study, and conclusion and knowledge gap.

2.1. Theoretical Review

2.1.1. Over View of Insurance

The financial system is a group of financial institutions that provide an effective payment, credit mechanism, and risk transfer, and thus they mobilize the funds of the economy from savers to the investors (Boadi et al., 2013). According to the insurance business proclamation 746 (2012, P: 6464), an insurance is a contract by the non-life and life insurer to compensate another person against loss or damage in exchange for consideration known as a premium against damage, destruction, loss, or liability for certain risks or perils to which the insurance subject may be exposed or the payment of a sum of money or other such items of value on the happening of certain events. NBE Birritu report (2012, P: 21) expressed insurance as one of the financial sector's sub-sectors, a risk transfer instrument whereby an insured transfers an exposure to risk to an insurer for compensation in terms of payment of premium. It is also a tool of paramount importance in today's economies. Insurance is a contract under which one party assumes significant insurance risk from another party by agreeing to indemnify the policyholder in the case of a specified uncertain future event (the insured event) that adversely affects the policyholder [IFRS, 4].

A stable and well-regulated insurance industry is a key driver of economic growth as it makes economic transactions through the transfer of risk possible, promotes financial intermediation, provides saved funds for use in the future to build infrastructure, improves the ability of the country to take on risks, efficiently allocates resources through risk and saving transfer, creates

liquidity, and provides other advantages. (Charumathi 2012, Gemechs 2017) Ward and Zurbruegg (2000) say that importance of the insurance industry in economic development is seen in the very first United Nations Conference on Trade and Development (UNCTAD) which took place in 1964's by making it clear that "a sound national insurance and reinsurance market is an essential characteristic of economic growth." Chen and Wong (2004) also said that insurance companies benefit all groups and sectors, firms and individuals of the economy by investing money and paying losses of groups and sectors of the economy.

The insurance sector provides a number of significant economic functions that are the same as those of other financial sectors and mainly distinct economic functions. According to Michael Koller (as cited in Abate 2012), insurance companies are involved in the functions of transferring risk and channeling funds from one unit to the other (financial intermediation). Similar to other financial institutions, insurance companies are involved in financial intermediation, which is the allocation of funds from one party to another party, and distinct from other sectors, insurance companies are helping the economy by transferring and sharing risk, which improves the confidence of parties in the economy regarding uncertain events. As Skipper (2001) stated, the insurance sector creates financial and social stability; specifically, it mobilizes and channels savings, encourages loss mitigation, enables risk to be managed more efficiently, fosters efficient capital allocation, can also be a substitute for and complement to government security programmers, and facilitates trade and commerce. And they provide social advantages to society by eliminating fear and anxiousness and improving the quality of lives of individuals. So in general, the insurance sector provides significant functions to the economy through transferring risks by providing insurance coverage and the provision of alternative means for saving and efficient allocation of resources from one party to another party.

According to the stability of the Financial Forum (2000), insurance can be divided into three major categories. Those are life insurance, non-life insurance (general insurance), and reinsurance. Life/health insurance companies are different from general insurance in terms of operation, investment activities, vulnerability, and duration of liabilities. For instance, life insurance provides different services, with protection and investment elements such as saving, pension, term insurance, and permanent health. It is similar to the contractual saving and deposit in addition to their risk transfer mechanism. Whereas, non-life insurance provides short-term

indemnity contracts related to personal and commercial lines like motor insurance policies, fire insurance policies, automobile insurance products, liability insurance policies, and others. General insurance doesn't have an investment element as an expectation of financial return. Generally, general insurance companies function only as risk takers, while life insurers serve as financial intermediaries and risk takers (Chen & Wong 2004). And finally, reinsurance is a contract of indemnity against liability by which an insurance company procures another insurance company to insure it against loss or liability by reason of the original insurance.

2.1.2. Financial Performance

Firm performance, as indicated in Alam et al. (2011), is a broad concept that includes four elements. The first element is customer-focused performance, which consists of customer satisfaction and product or service performance. And the second element is focused on profit, revenue, earnings per share, cash-to-cash cycle time, and market position, and it is stated as financial and market performance. The third element is human resource performance, which covers production and supply chain flexibility and employee satisfaction. And finally, the fourth element is organizational effectiveness measured by time to market and level of innovation. Therefore, financial performance is one of the many different indicators that evaluate how well the firm is performing considering the resources invested.

According to Ngui (2010), financial performance is one of the different measures of firms' performance and specifically evaluates the firm's ability to generate income considering the resources invested to generate that income. Good examples of financial performance include return on asset, return on equity, net asset value, earnings before interest and taxes, and operating income. It is very important for firms to consider that taking a single measure of financial performance is not convincing enough on its own. Rather, a well-performed evaluation of a company's performance should take into account many different measures of its performance. As capital is a scarce resource, relating profits to capital investment is an intuitively appealing concept.

Financial performance is delivered by financial statements that report on the financial position and performance of a firm. These statements are prepared and communicated for external users like lenders, suppliers, financial institutions, and government agencies, and to internal users like

employees and managers. Managers use financial statements to draft a comprehensive financial plan that will maximize shareholders wealth and minimize possible risks that may preexist (Ramadhan, 2010). But as Koller (2011) indicated, the concept of profitability is different from that of profit reported. The reason is that accounting income is designed to report the return to the users of the financial statement and then let them compare the return to their cost of capital.

Profit indicates the total amount of profit in dollar figures, which is reported on the financial statement, whereas profitability indicates the firm's ability to earn profit. Profitability is a relative measure that compares the generated profit with the resources used to generate that profit. Similarly, Ngui (2010) argued that the essence of financial performance measurement is to evaluate the firm's ability to earn a maximum return on the capital employed in the business. Koller (2011) stated that profitability is the most important and reliable indicator, as it gives a broad indicator of the ability of an insurance company to raise its income level.

Hofstrand (2009) also talked about profitability by comparing accounting profit and economic profit. Based on the comparison, accounting profits are the revenues minus the expenses. However, the problem with accounting-based measures of profitability is that they fail to include the opportunity cost, whereas in the economic concept, a firm will be profitable if its profitability is more than what investors can earn by themselves in the capital market. Here, opportunity costs are also deducted from revenue together with operating costs. The economic performance of the organisations might be ascertained by their economic result as well as by their size of profit. Risk and profitability are two major factors which together ascertain the significance of an organisation. A financial decision that raises uncertainty will reduce the value of the organization, and on the contrary, financial decisions that boost the profitability will maximize the value of the organization. Risk and profitability are two core concepts of business organization.

The financial performance of insurance companies can be depicted in different ways, such as net premium earned, underwriting operation, turnover per annum, return on asset, and return on equity. Profit for the insurer is a product of premium collected, less loss and expenses. A loss incurred denotes the process of selecting certain types of risks that have historically produced a profit, which is called underwriting. Good underwriting of risk selection normally produces a favorable loss ratio. Expense ratio is the result of total expenses (excluding claims) to premiums

written, and it depends on the insurance firm's management ability to efficiently manage operations. Therefore, a lower loss ratio and expense ratio indicate favorable financial performance. Swiss Re (2008) further explained that profits are determined not only by underwriting performance, which is determined by risk selection, product pricing, marketing, administrative expenses, and claims management, but also by investment performance, determined by efficient asset allocation and asset management.

2.1.3. Financial Performance Indicators

Studies made on the financial performance of insurance companies largely used Return on Asset (ROA) (Anam Abdullah (2019), Milos, Nada, Branimir, and Vera (2018), Anila (2015), Irem and Bashir (2019)) and Return on Equity (ROE) (Tomislava, Marko, and Ivan (2017), Thomas (2018), Aster and Meseret (2019)) as indicators of financial performance. According to Nugi (2010), it is very important for firms to consider that taking a single measure of financial performance is not convincing enough on its own. Rather, a well-performed evaluation of a company's performance should take into account many different measures of its performance.

A. Return on Asset (ROA)

ROA is among the key ratios capturing a firm's profitability and has been the major ratio applied to measure profitability and is currently the most common measure of profitability in empirical research, Edlira and Dorina (2016), Mohammad and Islam (2017), Wondwossen (2016), Amal et al. (2012), and Edlira and Dorina (2016). ROA is a measure of income to total assets (Khrawish, 2011). It reflects the effectiveness of the management of the insurance in earning income by utilizing company assets at its disposal. That is, it reflects how well the resources of the company are utilized to earn the income. It also gives a reflection of how effective an organization's management is in generating net income from the entire resources of the organization (Khrawish, 2011). Wen (2010) further stated that the higher the ROA, the better the company makes use of its resources.

B. Return on Equity (ROE)

ROE is a profitability measure that identifies how much profit the company earned as a percentage of shareholder equity put in since ROE is net earnings divided by total equity. ROE is

what the investors want in return on their investment. So the higher the ROE, the healthier the company in terms of profitability. It is also clarified by Khrawish (2011) that ROE is the after-tax net income divided by total equity capital. It is the return on investment earned by its shareholders on the amount of funds invested by them. ROE tells us about the effectiveness of management in using shareholders' funds. Therefore, it can be stated from the above line that the greater the ROE, the better is the management in utilizing the shareholders capital. ROE is always compared to the historical ROE of the company as well as the average industry ROE to get more meaning, as it would not mean anything if used on its own (Zairi, 2012).

2.1.4. Theories of Profitability

A theory is a collection of facts that explains a class of events. It is a means of combining together a number of facts that would otherwise be meaningless if we studied them separately. Theory inspires us to raise questions when we analyses the relationship among the facts and uncover the implications. Therefore, theory is then a foundation for other research that can be used to modify, disprove, or verify that theory. The theories are a foundation to understand the relationship between the dependent and independent variables. Theories of profit in fact bring out the source of profit or determinants of profit (Dwvedi, 2002).

Although there are a number of theories of profitability, the theory of profit is generally one of the most debatable or unsatisfactory issues in the area of economics. Different researchers have differently concluded about the factors of profitability. There is no single theory that gives an absolutely accurate and comprehensive discussion on the nature and determinants of profit. Since profitability is the primary objective of most businesses and very crucial to the survival of the business, insurance companies should identify and understand the theories discussed in different finance literature and evaluate their operational activities based on those theories.

There are a number of theories of profit that have been developed from time to time depending on the nature of profit in a competitive economy. Almost in all cases, one theory is basically different from another theory. Some of the most important theories guiding this study are discussed next:

2.1.5. Dynamic Theory of Profit

The dynamic theory of profit, or Clark's theory of profit, was formulated by J.B. Clark in 1900, who stated that profit arises only in the dynamic economy, not in the static or stationary economy, and profit is the difference between the price or revenue and the cost incurred for the production process. (Hadush, 2015)

A dynamic economy, or dynamic society, is characterized by the so-called generic changes, which include population increase, technological advancement in production, an increase in the supply of capital, managerial organization change, and a change in the quantity and quality demand of the society, etc. An efficient entrepreneur then takes advantage of the changing situation in the dynamic economy to increase his or her business's profit by increasing sales or reducing production costs. (businessjargons.com)

On the other hand, a static economy is a changeless economy in which the conditions don't change at all or don't change significantly. Such as, unchanged size of capital, unchanged demand pattern, the method of production is constant, the cost of population size is unchanged, a form of organization is the same, etc. In this economy, because of the static nature of revenue and cost, they have the same amount, and therefore profit is consequently the same, which is zero. The cost of production also remains constant because of the unchanged additional production in each firm. In a static economy with stationary economic conditions and demand and supply, there will not be pure profit as a surplus. Therefore, according to Clark, profit is the result of six dynamic changes, which are (www.economicsdiscussion.net):

1. Increase in population
2. Increase in quantity of customer demand
3. Change in quality of customer demand
4. Increase in capital
5. Advancement in production technology
6. Change in organizational form

According to Clark, an efficient entrepreneur who takes advantage of changing situations in the dynamic economy can earn pure profit according to their efficiency. They may create a new product to satisfy the new taste of customers, or they may introduce a new way of production by

inventing new production technology. And this kind of action helps them to increase the volume of sales, reduce production costs, reduce the length of time in the production process, and finally increase their pure profit. However, according to the theory, this pure profit decreases from time to time when other businesses in the economy start to copy the changes started by the entrepreneur, i.e., when they start producing the newly created product or use the new production technology introduced by the entrepreneur, the demand for inputs of production increases; therefore, the price of inputs and the overall production cost increase. In addition, an increase in supply of product for a given demand decreases the selling price, thereby the pure profit decline. (www.economicsdiscussion.net)

Therefore, according to dynamic theory, the entrepreneur can grasp the advantage created in the economy and earn a profit, but the profit doesn't exist for long periods as the member in the market will recognize the entrepreneur's action and start to copy it. This will increase the number of products in the market, reduce the selling price, and reduce profit. This implies that in order to grasp profit continuously, the entrepreneur must foresee and understand the ever-changing economy and continuously generate new ideas to take advantage of the opportunity presented.

2.1.6. Risk Bearing Theory of Profit

Hawley's risk-bearing theory of profit was proposed by F.B. Hawley in 1907 A.D. The general concept of the theory is that **"**profit is the reward of risk-taking or risk-bearing." The entrepreneurs who have the risk-bearing ability in the production with uncertain futures have a high probability of earning profit. Entrepreneurs have to produce goods based on the expected level of consumption, taking into account the nature of the future, which is uncertain. Risks may emerge because of different factors like sudden falls in the prices, risk due to war, fire, or any other natural calamity, non-availability of crucial materials, better substitute product introduction by the competitor, and product obsolescence. If their expectation goes right, they could sell the products in the future. But if the expectation turns out to be not right, they may not sell their products and reward the profit. (businessjargons.com)

This is the general nature of business. People start businesses with the expectation of generating profit, but the future is uncertain; it may not go with the people's plans and targets. So they have

to anticipate the future and make decisions. If their anticipation is right, they generate income; if it is false, they incur loss. Therefore, profit is the reward for risk-taking ability.

According to this theory, risk bearing is the main function of an entrepreneur. The entrepreneur has to be involved in a business and take risks to generate profit as a reward. It is obvious that no entrepreneur would expose themselves to risk-bearing to get only a normal return. The reward for bearing the risk should be greater than the value of the risk. As the level of risk is different from industry to industry, so is the level of expected profit. Some industries are riskier than others, and entrepreneurs who take risks in such industries expect more profit than entrepreneurs in others. When risk in the activity increases, the expected profit from the activity also increases. Dagim (2019)

However, like any other theories, this theory is criticized on the following issues: Nabraj Lama, (2013), www.economicsdiscussion.net, businessjargons.com

1. The relationship between profit and risks is not clearly explained. There are no functional risks and profits. Entrepreneurs who bear high risks may not necessarily generate high profits, or in other words, all risks don't come with profit when they are taken.
2. It is not a complete theory in that all business is risky, but all entrepreneurs objective is to generate profit as large as they can.
3. This theory deals with only one function of entrepreneurs and considers risk as the only factor of profit. But risk bearing is not the only factor of profit; other determinants of profit, like innovation, initiating, organizational ability, bargaining, and coordinating, also contribute to the total profit.
4. Profit not caused by entrepreneurs' ability to bear risks: This theory stated that profit is the result of entrepreneurs' ability to take risks, but profit results from entrepreneurs' ability to avoid risks.
5. Entrepreneurs always strive to avoid risks, and avoidance of this risk may create larger profits.

2.1.7. Uncertainty Bearing Theory of Profit

The uncertainty-bearing theory of profit is a theory developed on the foundation of the risk-bearing theory of profit, and it was proposed by an American economist, F.H. Knight, in 1921.

Prof. Knight refined and extended Hawley's theory of risk bearing and came up with the new theory of uncertainty bearing. Knight accepts the general concept of Hawley's theory of risk that profit is the result of risk-taking or risk-bearing. But according to Knight, risks are divided as insurable risk (foreseeable risk) and non-insurable risk (uncertainty). Since insurable risks are foreseeable risks, profit is a result of non-insurable risk (uncertainty) bearing rather than risk bearing. Thus, profit is the residual return to the entrepreneur for bearing the uncertainty in business. (www.economicsdiscussion.net)

A. Insurable risks

Insurable risks are risking whose possibility of occurrence can be forecasted because the probability of their occurrences can be calculated using statistical data; it can be measured scientifically. Such risks, which exist due to floods, theft, and death by accident, and fire, are examples of insurable risks. Insurance companies provide insurance service to such kinds of risks by receiving premiums as compensation. Therefore, as the entrepreneur can reduce these risks by purchasing insurance services, they cannot cause the occurrence of profit. As Knight stated, these certain risks are not genuine risks entitled to profit as compensation for entrepreneurs who bear these risks. The premium paid by entrepreneurs to buy an insurance policy is considered part of the cost of production.

B. Non-insurable risks

These risks are risking whose occurrence cannot be foreseen, and because of this, they are identified as uncertain risks or unforeseeable risks. The probability of their occurrence cannot be statistically calculated; it can't be measured scientifically. Non-insurable risks may include technical risk, cyclical risk, competitive risk, risk of demand, and government intervention risk. Entrepreneurs can't avoid these risks since insurance companies don't provide insurance service for such risks even for a large amount of premium compensation because the probability of occurrence cannot be statistically calculated and insurance companies can't afford these uncertainties.

As Prof. Knight stated, bearing such non-insurable risks is the crucial function of the entrepreneur. Based on this theory, there is a positive relationship between uncertainty bearing and profit. As the level of non-insurable risk-taking increases, the level of profit also increases.

Therefore, it is the uncertainty that causes the risks, and bearing such risks is the cause for the emergence of profit. The decision-making process has become one of the important functions considering the uncertainty of events. If the decisions made by the entrepreneur correspond with the subsequent events more than others, then the company has a high probability of making a profit. (Hadush, 2015)

Although uncertainty-bearing theory provides a satisfactory explanation regarding the nature of profit, it is criticized on the following issues. (www.economicsdiscussion.net and businessjargons.com)

1. Uncertainty-bearing function is not the only factor of profit. Uncertainty bearing is not the only function to generate profit; other determinants of profit, like innovation, initiating, organizational ability, bargaining, and coordinating, also contribute to the total profit.
2. Although this theory emphasizes the relationship between uncertainty and profit, it is not possible to determine the monetary value of the uncertainty. This implies the value of profit also remains indeterminate.
3. This theory doesn't consider the emergence of profit in an imperfect market (monopoly market). Monopoly companies generate higher income than competitive companies, but not because of uncertainty.
4. This theory is named as unrealistic because it doesn't distinguish owners and the professional manager as it is in the modern business. Ownership and management of the corporation are separate. In corporations, the owners are called shareholders, and they are the parties who are responsible for bearing uncertainty. But the organization, control, and general decision-making of the corporation are conducted by salaried professional managers. Therefore, this theory does not clearly indicate who the entrepreneurs are.

2.2. Empirical Review

2.2.1. Empirical Findings in Developed Countries

Batool and Sahi (2019) explore determinants of financial performance of insurance firms in UK and USA during global financial crises 2007-2016. The data are derived from 24 insurance firms for the period 2007-2016 and are estimated using panel data techniques. The results are presented through comparison of two insurance sectors. The tested explanatory variables are internal variables (Size of firm, asset turnover, liquidity and leverage) and external variables (west Texas intermediate, cost per impression, gross domestic product and interest rate). The dependent variable financial performance is indicated by ROA and ROE. Findings of the study revealed that for USA size of firm, liquidity, asset turnover, leverage, WTI and GDP have positive and interest rate and CPI have negative significant effect. For UK size of firm, liquidity, GDP, CPI and WTI have positive but leverage, asset turnover and interest rate has negative significant effect; US insurance is effective as compared to UK.

McKinsey (2023) identifies that the non-life insurers in developed markets—the US, UK, Germany, and France—are under cost pressure from inflation and higher reinsurance expenses. Despite that, firms have posted modest profit recovery owing to disciplined underwriting and sound expense management. Similarly, Fitch Ratings (2024) says that in European markets like the UK, Italy, and Germany, insurers have been capable of increasing premiums at a rate higher than claims inflation, which has resulted in improved underwriting performance and predicted profitability gains through 2025. These findings suggest that, other than company-specific factors such as premium growth, retention ratios, and expense ratios, external macroeconomic environments—inflation, claims cost trends, and pricing flexibility, specifically—are major determinants of profitability of advanced non-life insurance markets.

2.2.2. Empirical Findings in Developing Countries

The study in selected Eastern and Central European countries by Kramaric et al. (2017) investigated the impact of insurance companies' internal factors, insurance industry variables and macroeconomic variables on the performance of insurance market. The study focused on the countries of Slovenia, Croatia, Poland and Hungary to cover the period from 2010 to 2014. The

performance is explained by the dependent variables of return on equity (ROE) and return on asset (ROA) and the independent variables include size, type dummy, combined ratio, age, organizational form dummy, composite insurance company, ownership indicating domestic or foreign ownership, share of premium ceded to reinsurance and real GDP per capita growth. The results of the analysis showed that while age significantly and positively influence both dependent variables of ROA and ROE, real GDP significantly and positively affected the performance only in terms of ROE.

Pjanić et al. (2018) considered the Serbian insurance market, one of the underdeveloped branches; its degree of development is significantly lower than that of the European Union member states average, although the branch is developing with favorable prospect on the plate. This study investigates the effect of nonlife insurance companies' firm specific variables including asset growth, underwriting risk, liquidity ratio, premium growth, asset, total revenues, debt ratio, size (company), financial leverage, and operating costs on the performance of Serbian non-life insurance companies. Multilinear regression model was used to perform regression and a variance analysis (ANOVA) to check the significance and impact of independent variables on the dependent variable of profitability in terms of ROA. The findings revealed that growth premiums, operating expenses and proportion of profit in revenues (profit growth) were having a significant and positive impact on dependent variables of ROA. Debt ratio significantly and negatively affected ROA. Though company size positively contributes to ROA, the contribution is not significant. Underwriting risk, liquidity ratio and financial leverage negatively contribute to ROA but the contribution is not significant. The paper finally concludes that the performance of non-life insurance firms is greatly affected by the increase in debt ratio, share of profit in total revenues, premiums and operating costs. Çekrezi (2015) examine the determinants of the financial performance of Albanian insurance companies.

5 private insurance companies are included in the research by the study to study across years 2008-2013. Cross-sectional time series data are employed for the analysis, which are obtained from the state tax authority audited annual reports and from web sites of the insurance companies. The performance of the firms is assessed employing size, leverage, tangibility, risk, and flexibility variables. The analysis outcomes revealed that size and tangibility (fixed asset to total asset) positively contributed towards the financial performance as measured by ROA, while

leverage (total debt to total assets) and risk (standard deviation of sales to average value of sales) negatively influence the performance. Almajali et al. (2012) examined the determinants of financial performance of insurance companies in Jordan.

The research includes 25 insurance companies all insurance companies listed on Amman stock Exchange and covers the period of 2002 to 2007.Popular statistical methods like T test and multiple regressions are used to analyze the data gathered. The research result explores that independent variables of liquidity, management competence index, size and leverage influence the financial performance of Jordanian insurance companies in a positive direction. Jordanian insurance companies were also analyzed in the study by Alomari, and Azzam (2017) with the aim to explore the micro and macroeconomic determinants influence on the insurance companies in Jordan.

Panel data were obtained from 24 listed insurance firms from the period between 2008-2014. While profitability has been represented by ROA, independent factors of leverage, underwriting risks, liquidity, size, GDP, inflation and market share have been examined by this study. As per the findings of the analysis the results show that leverage, liquidity, and under writing risks have negative and significant impact and market share, size of the company and GDP have statically positive and significant impact on ROA. Results also show that inflation has no significant relationship with the profitability of insurance companies of Jordan. Daare (2016) research work examines determinants of general insurance profitability in India.

Financial statements of 4 public and 6 private general insurance companies were collected from the period 2006-2016 and the data collected from the panel was calculated using Fixed Effect Model (FEM). The outcome of the study indicates that liquidity and inflation are adverse factors affecting the performance of general insurance in India, but capital adequacy and GDP are positively related to the profitability of general insurance in India. Hussanie and Joo, (2019) establish the determinants of profitability of Indian life insurance firms.

12 Indian listed life insurance firms for the period 2005-2015 were employed in order to obtain the panel data. The independent variables were tested with the help of econometric analysis. The research employs eleven variables: Liquidity, Tangibility, Investment performance, Premium growth, Loss ratio, Size, Leverage, Operating margin and Commission ratio. The study finds the

result reveals commission ratio, leverage and size effect towards profitability indicated by ROA is not significant, but other variables loss ratio, operating margin, liquidity, investment performance, tangibility and premium growth are significantly related to ROA. Jibran et al. (2016) study on the relationship of profitability of the non-life insurance companies in Pakistan with working capital management, other firm-specific variables along with the macroeconomic variables like GDP and Inflation. The data are analyzed by regressing panel data on Eviews6.current ratio is the metric of the working capital management. The findings elucidated that premium growth, current ratio, and size of the firm are the important drivers in determining the performance of the insurance companies.

Zhang et al. (2021) conducted a panel data analysis using fixed and random effect models on financial institutions across several emerging Asian markets, including China, India, and Indonesia, covering the years 2010–2019. They found that risk factors negatively impact financial performance metrics such as return on assets (ROA) and return on equity (ROE).

Three panel data estimation models were employed in order to test equity returns, profit/interest rate levels, retakaful/reinsurance dependence, company size, liquidity, solvency margin, and contribution/premium growth. The finding of this study reveals that reinsurance dependence, company size and solvency margin are statistically significant factors affecting financial performance of the general Islamic insurance companies. On the other hand, all but equity returns are statistically significant factors of financial performance for conventional insurance. Abdeljawad and Dwaikat (2017) in their research, in this study attempted to examine the determinants of profitability of the insurance companies in Palestine. 7 insurance companies were under consideration while the pane data were collected from 2010-2017. Results of the paper explore that size and age have positive and significant relationships with the profitability in terms of ROA. In contrast, claims ratio has a negative and significant effect on Insurances Company's profitability. And, the remaining variables: leverage, liquidity, premium growth and expense ratio have an insignificant relationship with the ROA. Alali et al. (2018) took into account the effect of macroeconomic determinants on the financial performance of listed general insurance companies in Kuwait's stock exchange. Inflation rate, gross domestic product, GDP per capita, interest rate, and gross domestic product growth are the macroeconomic determinants. The study had collected a panel data from the balance sheet of six listed general insurance

companies at the Kuwait stock exchange for 2011-2017 and was tested through ordinary least squares (OLS). The outcome of the regression explained that none of the variables have any significant association with the profitability of insurance companies in Kuwait. Nigerian study by Ajao and Ogieriakhi (2018) examine the determinants (drivers internal) of the financial performance of insurance firms in Nigeria. The study uses a sample of 12 listed Nigeria insurance firms on the Nigeria stock exchange during the period 2009-2017. The findings of the paper showed that firm's age significantly affected insurance performance and is positively related. On the other hand, growth rate and firm size negatively and significantly influence the insurance company's performance. Although Leverage was found to have a positive correlation with ROA, it has no effect and tangibility negatively correlates with ROA. A research by Mazviona, Dube and akahuhwa (2017) was performed for the purpose of determinants affecting the performance of insurance companies in Zimbabwe. Data was collected for 20 insurance companies from 2010-2014. Factor analysis and multiple linear regression were applied for analyzing the relationship between determinants and performance. Findings explain that claims ratio, expense ratio and size of a company have negative and significant effect on performance of insurance companies. And leverage and liquidity have positive effect on performance. Kwaning, Awuah and Michael (2015) assessed the determinants of the financial performance of Ghanaian nonlife insurance firms. Data was collected between 2009 and 2013 from 10 sampled nonlife insurance firms out of a total of 26 registered insurance firms using purposive sampling. Financial performance as the dependent variable is captured by four variables: Return on Assets (ROA), Investment to Total Assets, Return on Equity (ROE) and Investment Yield. The results of the study indicated that there was low correlation between Return on Assets (ROA) and Gross Written Premium (GWP), Size, Claims, Liquidity and Leverage. But ROA is negatively correlated with claims and positively and significantly correlated with Gross Written Premium (GWP) and Size. Liquidity and leverage are positively and not significant correlation with ROA.

The paper is on Derbali and Jamel (2016) case study of determinants that affect the performance of insurance companies in Tunisia. The research is grounded on 8 Tunisian insurance companies for the period of 2005 to 2015 for a span of eleven years. The internal variables that have been utilized for analysis are leverage, risk, growth, tangibility, size, age and liquidity. According to the paper the outcome of analyses suggests variable growth of premium and age has risen and significantly affected the performance indicated by ROA. Variables size has negative and

significant relationship with ROA. Variables tangibility leverage, liquidity have no impact on the performance of Tunisian insurance companies. Onsongo (2015) analyzes the determinants of financial performance of Kenyan life insurance companies.

Multiple linear regressions were used in order to examine the data collected from 24 Kenyan life insurance firms between 2010-2014. The study has explanatory variables such as Insurance Financial Leverage, Solvency Margin, Investment Ratio, Retention Ratio, diversification, Premiums Growth, Company Size, and dependent variables financial performance measured through ROA. The outcome of the research showed that Diversification and Investment ratio was strongly positively correlated with financial performance and Insurance Financial Leverage had a moderate positive correlation with Financial Performance of Kenyan life insurers. Retention ratio was strongly negatively correlated with financial performance. Firm Size and Premiums Growth weakly negatively correlated with financial performance whereas Solvency Margin weakly positively correlated with Life Insurers' Financial Performance in Kenya. Njeru (2018) analyzes the determinants of financial performance of Kenyan nonlife insurance companies.

The study uses regression analysis to analyze the data collected from all 34 insurance companies that were listed in Kenya during 2016. Historical financial and economic data were collected from the years 2006 to 2016. The study confirmed that firm specific factors have a noticeable impact on performance in terms of ROE while macro-economic and industry specific factors have a non-significant effect. Specifically, claims ratio, expense ratio, investment yield and underwriting margin played an important part in the financial performance. While claims ratio and expense ratio impacted negatively on the return on equity, market share effect on return on equity is not material.

2.2.3. Empirical Findings in Ethiopia

Tesfaye and Mekonnen (2020) used fixed effect models on insurance companies in Ethiopia from 2012–2019 and confirmed the positive influence of firm size and growth on financial performance, while emphasizing the adverse effect of high leverage. Bekele and Getahun (2018) employed panel regression analysis on Ethiopian banking data from 2010–2017, highlighting liquidity and leverage as significant predictors of profitability. Similar objective study by Demis (2016) took 9 samples of 17 insurance companies which were in existence in Ethiopia prior to

2008. The findings of the research indicated that technical provision, under writing risk, inflation and leverage have negative and significant impact; whereas premium growth, age of the company, solvency ratio and GDP possessed positive and significant effect on profitability of Ethiopian insurance sector.

Prof. Jasmindeep and Teklit in their paper Teklit and Jasmindeep (2015) analyzed the key determinants of profitability of insurance companies in Ethiopia. 17 insurance companies were covered in the analysis to collect panel data of the period of 2006-2015 for 10 years. Fixed effect model was used in place of random effect model while analyzing data. This study specifically tests internal variables: size of insurance companies, capital adequacy, leverage ratio, liquidity ratio, loss ratio; and external variables growth rate of GDP, inflation rate, market share. Findings of analysis indicated that size of insurance (positive), capital adequacy (positive), liquidity ratio (negative) and growth rate of GDP (positive) were the most significant factors that strongly drive the profitability of insurance companies in Ethiopia. While, leverage ratio (in positive), loss ratio (in negative) and market share (in positive) and inflation rate (in negative) were shown no meaningful association with insurance companies' profitability. Mistre (2015) examined the effect of variables on the profitability of insurance companies.

The study consisted of a sample of 9 insurance companies over 2003-2014. Audited financial statements that are secondary data and primary data gathered through open ended questionnaires distributed to chief finance officers were used as data source. Regression analysis was employed to scrutinize data from secondary source and data from primary source were streamlined presented to sustain regression result. The regression indicated that size and solvency are positively and significantly correlated with profitability whereas loss ratio and leverage negatively and significantly affect profit. Tangibility, reinsurance dependency and age have negative and insignificant effect, whereas liquidity, growth written premium and GDP have positive and insignificant effect. Asrat and Tesfahun (2016) highlighted the determinants that affect profitability of private insurance companies of Ethiopia.

Panel data obtained from eight private insurance firms selected by purposive sampling method. Data is collected for the 2005-2015 duration. The outcome of the regression showed company size, GDP and premium growth have positive and significant influence on the profitability. Underwriting risk and solvency ratio have negative and significant influence on the profitability.

Inflation rate, interest rate and reinsurance reliance have insignificant influences. Hadush (2015) analyzed the determinants of the profitability of general insurance firms doing business in Ethiopia. Dependent variable is measured by ROA, and explanatory variables included tangibility, premium growth, capital size, liquidity, claim ratio, inflation, and real GDP. Nine insurance firms were covered in the analysis to provide data from 2005-2014. Data used were secondary data (audited financial data) gathered from National Bank of Ethiopia and annual report of companies. The analysis findings showed that growth in volume of capital, tangibility, and premium has strong and positive correlation. Real GDP and claim ratio are strongly and negatively correlated with profitability. Inflation and liquidity are not insignificantly correlated. Dagim (2019) examines determinants of Ethiopian non-life insurance companies' financial performance. The study collected secondary data which are annual report (audited financial statements) obtained from head office of all insurance companies and National Bank of Ethiopia.

Seven insurers are utilized to obtain data of the period 2010-2017 and thus it is a panel data with a total of 56 observations. It has been seen through the process of regression analysis that Inflation rate, Leverage, Interest rate, and Reinsurer dependency are highly and negatively related to profitability. On the other hand, liquidity ratio, size of the firm, and efficiency are positively and statistically correlated with the performance of general insurance firms. Another study on non-life insurance by Gemachis (2017) collected panel data of annual report (audited financial statements) provided by head office of all insurance firms and National Bank of Ethiopia. Data was collected from 12 insurance firms used as a sample for the period of study 2011-2016. The findings of regression results are: underwriting risk, diversification and dependence on reinsurance had a negative and significant impact on ROA. Leverage and industry concentration ration are statistically significant and have a positive effect. Determinants that affect financial performance of Insurance Companies in Ethiopia were analyzed by Taye (2017). The independent variables under test were grouped into industry specific, internal variables (firm specific), and macroeconomic variables.

Quantitative research method and explanatory research design was used. And secondary data (data) for 2011-2016 were collected from among the total of 17 insurance companies that are active in Ethiopia from 12 insurance companies whose names were selected through purposive method of sampling. Random Effect econometric model and descriptive statistics are applied to

analyze the data. According to the study the results of the analysis revealed that the variables volume of capital and previous profit performance significantly and positively influence the financial performance in this research measured by ROA. The other variables Solvency margin and loss ratio have significant and negative influence on ROA. Macroeconomic variables lag GDP rate and recent inflation have significant and positive effect on ROA while exchange rate and lag inflation had significant and negative effect. Daniel and Tilahun (2013) carried out a paper to examine the effects of internal variables (firm specific variables) on Ethiopian insurance companies. Nine insurance companies were considered as a sample to get audited yearly report of 2005-2010. The result of analysis revealed that tangibility, size, and leverage are positively and significant with ROA, whereas loss ratio possesses negative and significant influence. Finally, age, liquidity and growth in writing premium is not significant. Aster and Meseret (2019) studied with the objective to review the determinants of financial performance Insurance Companies operating in Ethiopia during the period 2010-2015. 9 insurance companies were covered to get a Panel data for 2010-2015 and ordinary least squire estimation was used to utilize for the analysis purpose. Based on regression findings:

The size of the companies has a significant and positive impact on the performance as indicated by ROA and ROE.

Liquidity and capital adequacy have a positive impact on the performance as indicated by ROA. But liquidity and capital adequacy negatively correlated with the performance indicated by ROE.

Loss ratio has a significant negative relationship with performance ROA and ROE. Leverage is inversely related with performance, as measured by ROA and ROE. GDP has a negative but non-significant relationship with ROA and ROE. Inflation is significantly and inversely related with performance ROA and ROE. Melat, Kenenisa and Sintayehu (2019) also employed ROE and ROA as measuring factors of performance and collected panel data of nine Ethiopian insurance companies' financial reports from 2006 to 2016. The data is examined using multiple regression and correlation analysis methods. The conclusions of the paper suggest that Firm age and liquidity ratio had positive and significant relationships with return on equity. Underwriting risk negatively and significantly correlated with Return on asset and Return on equity. Firm age affected performance as represented by return on asset in a positive but insignificant manner.

2.3. Conceptual Framework

This study aims to examine the major drivers of the profitability of insurance companies in Ethiopia, grounded on a conceptual model incorporating macroeconomic environment, industry, and human capital drivers. Contrary to previous research, which concentrated on firm-specific financial indicators, this study focuses on more universal structural and organizational drivers that are highly relevant in today's Ethiopia.

Among the human capital variables, educational qualification of management and employees is expected to be a significant profitability driver. Increased education and related qualifications can lead to better decision-making, risk management, and operational efficiency on the part of insurance firms. Concurrently, staff age is also considered as a variable because it reflects levels of experience and institutional memory. But it can be linked with responsiveness to change and flexibility, both of which are essential in a reforming and changing industry.

At the macroeconomic level, the research considers the July 2024 floating exchange rate reform as a major variable. This new phenomenon in the setup of Ethiopian monetary policy is sure to affect insurance business via foreign currency exposure, investment returns, and imported inflation. In addition, climate hazards and political instability have been referred to as systemic causes of possible business disruption, claims aggravation, and general profitability deterioration. Both are becoming more and more relevant and must be taken into consideration in assessing the performance of insurers.

At the sectoral level, the study covers variables such as the impact of corridor development projects that are expected to stimulate economic activity and propel the need for insurance services across various areas. Industry concentration is also considered in order to find out the impact of the degree of competition on pricing strategy, operating efficiency, and market share. Moreover, the possible opening of foreign insurance companies to the Ethiopian market is considered, as it would likely bring in more capital, competition, and innovation albeit potentially threatening local companies' status.

To measure financial performance, Return on Assets (ROA) used as the dependent variables in the research. These indicate a sense of how well insurance companies are managing their assets and generating wealth for shareholders. By the integration of macroeconomic, industry, and

human capital variables, this theoretical framework is aimed to provide a comprehensive analysis of the determinants of profitability of the insurance industry in Ethiopia.

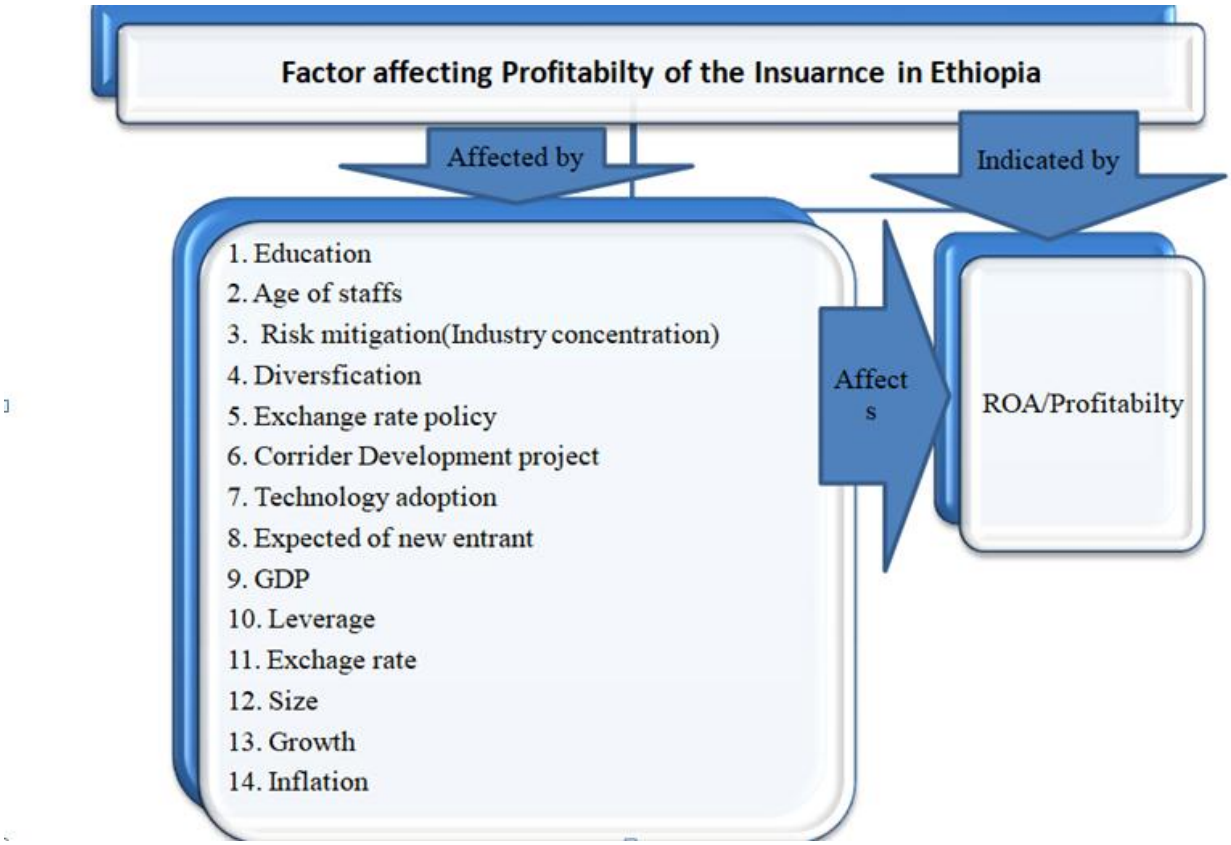

Figure 1: Conceptual framework

Source: Compiled by the researcher from literature review

2.4. Conclusion and Knowledge Gap

Different theories of profit have been developed over time depending on the nature and determinants of profit. The profit theory, however, is often among the most contentious or less satisfying topic in economics. Different thinkers have arrived at different conclusions about the factors of profitability and theories are flawed in some way or another. The basic criticism against these theories is that they describe one role of entrepreneurs and leave other profit factor outside. Economists hence reach the conclusion of "there is no a single theory of profit which gives a correct and comprehensive explanation of the nature and determinant of profit". However, many studies have been conducted on determinants of profitability across different jurisdictions in an endeavor to identify key factors of profitability

Determinants of firm performance research has attracted a lot of attention from institutional regulators, economists and academicians.

Considering global studies, a large number of studies have been examined on companies' performance, but literature review implies that most of these studies focused on banking sector than insurance industry (Yuvaraj & Gashaw, 2013). Most of the studies in Ethiopia about financial performance also focused on non-financial and banking sector. Moreover, in developing countries including Ethiopia, there are insufficient numbers of studies to adequately investigate factors affecting insurance sector financial performance. Out of the few studies conducted in Ethiopia researches by Simon (2016), Daniel and Tilahun (2013) and (Yuvaraj & Gashaw, 2013) focus only on firm specific factors and ignore industry specific and macroeconomic related variables affecting the performance of insurers. Tesfahun (2016), Meaza (2014), Demis (2016), Teklit and Jasmindeep (2017), Asrat and Hanna (2015), Mistire (2015), Hadush (2015), Suheyli (2015) and Gemachis (2017) Although all of these included firm specific and macroeconomic variable, all except Gemachis (2017) fail to consider the industry specific variable which have influence on performance of the selected sectors.

Most of the previous studies, which largely based their research on administrative or secondary data sources, the study differs in that it used both structured and unstructured questionnaires to gather primary data. This approach allows for an in-depth and realistic insight into the seasonality impacts on the performance of insurance companies in Ethiopia, which has not been given much attention in previous studies.

The contribution of value by this research comes through several dimensions. To begin with, compared to other research on the Ethiopian insurance market, which was based substantially on secondary data, this research bases its primary data on industry stakeholders and so presents a more contemporaneous and context-specific picture. Secondly, it covers a broad range of seasonal variables that are often excluded in earlier studies. These are the impact of the July 2024 floating exchange rate adjustment, the corridor expansion projects underway, climatic hazards, and political instability that all have direct and indirect impacts on the profitability of insurance firms.

Finally, the study closes a critical gap in available literature. No definitive and up-to-date research exists systematically analyzing the determinants of profitability in Ethiopia's insurance sector. Focusing on firm-level as well as macroeconomic factors, this study offers valuable inputs that can inform future academic research, policy, and strategy in the industry.

CHAPTER THREE

3. RESEARCH METHODOLOGY

This chapter outlines the research approach applied to investigate the factor affecting of the profitability of insurance companies in Ethiopia. The chapter begins with the explanation of the research technique, types of data and data sources, measurement of variables, data analysis, model specification, and ethical consideration.

3.1. Research Method

Based on the nature of the research perspective and research problem, a research method applied in business and social research can be based on the philosophy of quantitative, qualitative or mixed which is the combination of qualitative and quantitative.

According to Saunders, Lewis, and Thornhill (2019), quantitative research is typically used when researchers aim to test theories and hypotheses that are deductively developed from existing literature. This approach assumes the existence of measurable cause-and-effect relationships between variables. Quantitative research uses structured data collection instruments and statistical techniques to examine these relationships within a sample, with the intention of generalizing the findings to a larger population. It is particularly effective for identifying patterns, testing theoretical propositions, and making objective, data-driven conclusions.

Qualitative research approach is one in which the investigator often makes knowledge claims based primarily on the multiple meanings of individual experiences, constructed meanings, socially and historically collaboration or change oriented with an intent of developing a theory or pattern" (Creswell 2018). Qualitative is used largely as a synonym for any data collection procedure (such as an interview) or data analysis phase (such as coding data) that yields or works with non-numerical data. Qualitative may therefore suggest data aside from words, such as images and video clips. And mixed research is an approach to inquiry that combines or connects both qualitative and quantitative research methods throughout collection and analysis of the study.

Hence, to achieve the goals and to examine the hypotheses established in this research, based on the nature of research problem and research orientation, in this research work quantitative and qualitative research design was employed to examine the factor affecting the profitability of insurance companies in Ethiopia.

3.2. Type and Source of Data

For this study, we gathered data from both primary and secondary sources. The secondary data came from annual reports of insurance companies, using audited financial statements to ensure the data is reliable. We obtained the financial statements of the National Bank of Ethiopia. The analysis database constitutes a balanced panel of sample insurance companies in Ethiopia for a period of 14 years from 2011 to 2024. For representativeness, we utilized a systematic random sampling technique by using the year of incorporation of the insurance companies. The first company selected was Africa Insurance Company S.C., established in 1994. Having passed the systematic selection process, the others were Nyala Insurance Company S.C., established in 1995, Global Insurance Company S.C., established in 1997, Ethio-Life Insurance Company S.C., established in 2008, and Birhan Insurance Share Company, established in 2011. Being the last company of the selected sample to establish business in 2011, panel data begins from the same year through 2024 for all the five firms.

Primary data was gathered through the combination of structured questionnaires and unstructured interviews. The respondents were selected from various departments with the head office. It is a reassuring representation from the important professional positions including managers, accountants, auditors and other related staff members. Using questionnaires and interviews enabled the gathering qualitative data, which in giving deeper insight into the matters being researched, contributed to a better understanding of issues.

3.3. Measurement of Variables

The variables' measurements in this study are based on previous empirical research to ensure consistency and facilitate comparisons, particularly between developed and developing countries. Below is a table summarizing the measurement of the dependent and independent variables.

Table 1: Measurement of variables

Variable	Definition	Expected Effect on Profitability	Expected Sign
ROA	ROA is a profitability ration that indicates how efficiency a company using its assets to generate profit.	Dependent variable	+
Age group	Age of staffs in insurance industry (1=18-25, 2=26-30, 3=30-45, 4= above 45)	Young age may be reduced productivity because of lack of experiences, but adaptable technology, whereas also old age may improve because of experiences.	±
Age2	Aged grouped in the insurance industry, squaring the age.	Experience improves performance and risk assessment	+
Exchange rate impact	Ethiopia implemented floating exchange rate reform in July 2024, this may affect the insurance company profitability's (1 = Negative, 2 = Positive, Neutral)	Depreciation/devaluation led to inflationary pressure and may affect profitability's.	-
Risk mitigation	Whether the company mitigates concentration and other risks (1 = Yes, 2 = No)	Mitigation reduces risk exposure, improving profitability	+
Diversification	Level of operational diversification across products/regions	Reduces risk concentration, improves stability	+
Property damage insurance	Insures property damage from corridor development projects (1 = Yes, 2 = No)	Can be profitable or risky depending on management	-
Techadoption	Effectiveness in adopting new technologies (1=Very effectively, 2=Effectively, 3=Neutral, 4=Ineffectively,5= Very ineffectively)	Improves efficiency and service delivery	+
Education	Highest educational qualification (1 = Diploma, 2= Master's 3= above)	Better education linked to better decision-making	+
Expected of new entrant	The sector expected new entrant of foreign insurance	The lack of readiness of Ethiopian insurance companies	-
GDP	Gross Domestic Product (macro indicator)	Higher GDP implies better business environment and demand for insurance.	+
Exchange rate	Exchange rate fluctuations	Depreciation may increase costs for foreign obligations or asset values.	-
Inflation	General price level changes	High inflation can erode profitability via cost increases.	-
Assets	Total assets held by the company	Larger asset base can improve profitability via economies of scale.	+
leverage	Ratio of debt to equity or total assets	Higher leverage may indicate financial risk, reducing profitability.	-
Growth	Revenue or asset growth	Growth can indicate good prospects and enhance profitability.	+

Source: own computation

3.4. Data Analysis

For the primary data, we used inferential statistical techniques. We started with a correlation matrix to check for multicollinearity issues between our variables and see which ones had significant correlations with our outcome variable. To measure what factors impact whether the profitability, indicated by Return on Assets (ROA), hits a certain level, we used a Probit regression model. This model is suitable for binary outcomes.

For the secondary data, we performed a multiple regression analysis and ran several diagnostic tests to check for issues like heteroskedasticity, multicollinearity, autocorrelation, and normality of residuals, ensuring our results were valid and reliable.

3.5. Sampling Design

3.5.1. Study Population

The target population of this study was employees of five insurance companies from the total of eighteen insurance companies for this investigation. To do this research, we used a systematic random sampling procedure based on establishment year. As a result, the first insurance was chosen at random, and after that, every third insurance was chosen. Thus, using a systematic random sampling procedure, the first insurance that was selected was Africa Insurance Company S.C., followed by the 5th Nyala Insurance Company S.C., the 8th Global Insurance Company S.C., the 11th Ethio-Life Insurance Company S.C., and the 14th Birhan Insurance Share Company.

Table 2: List of insurance companies operating in Ethiopia as of 2024

No.	Name	Establishment Year	No. of staff	Targeted population
1	Ethiopian Insurance Corporation	1975	317	
2	Africa Insurance company S.C	1994	376	Africa Insurance Company S.c(376)
3	Awash insurance company S.C	1994	804	
4	National Insurance company of Ethiopia S.C	1994	360	
5	Nyala Insurance company S.C	1995	382	Nyala Insurance company S.C (382)
6	Nile Insurance company S.C	1995	429	
7	The United Insurance S.C	1997	568	
8	Global Insurance Company S.C	1997	192	Global Insurance Company S.C(192)
9	NIB insurance company	2002	441	
10	Lion Insurance Company S.C	2007	359	
11	Ethio-Life Insurance S.C	2008	315	Ethio-Life Insurance S.C(315)
12	Oromia Insurance Company S.C General	2009	556	
13	Abay Insurance Company	2010	317	
14	Birhan Insurance company S.C	2011	262	Birhan Insurance company S.C(262)
15	Tsehay Insurance	2012	351	
16	Lucy insurance share company	2012	262	
17	Buna insurance company	2013	241	
18	Zemen insurance company	2020	193	
	Total		**8725**	**1527**

Source: Insurance Companies

3.5.2. Primary Data Target

For sampling purposes, the target insurances were categorized as follows for primary sources of data: -

1. Africa Insurance S, C ($N_1 = 376$)
2. Nyala Insurance ($N_2 = 382$)
3. Global Insurance ($N_3 = 192$)
4. Ethio- Life Insurance ($N_4 = 315$)
5. Birhan Insurance S.C ($N_5 = 262$)

3.5.3. Sampling Technique and Sample Size

The researcher's most crucial design decision is choosing an appropriate sample size. A number of elements are crucial in establishing the right sample size. These elements consist of statistical techniques, sampling design, precision, and confidence level. The following is the formula used by Yamane (1996) to calculate the necessary sample size for a population of size N at a 95% confidence level (level of accuracy for sampling error, e = 8%): Chief executive, Finance Managers, Accountants are the respondents.

$$n = \frac{N}{1 + N(e)^2} = \frac{1527}{1 + 1527(0.08)^2} = 141.74 \approx 142$$

Where n is the sample size needed for the study, N is the total population, and e is the sampling error.

The deviation between the parameter and the static is known as the sample error. Margin of error in statistics is the amount of inaccuracy in the results derived by surveys done on random samples. A wide margin of error in statistics means less likelihood of believing the survey or poll outcome, i.e., lower confidence in the outcome to represent a population. The level of confidence is a percentage representing specific probabilities that the sample contains the parameter to be estimated. The level of confidence employed in the study is 95%.

This study employed a stratified random sampling method. A random sample technique was used to choose respondents from each of the five strata that were created. A proportionate technique was used to determine the sample needed from each stratum.

$$n_i = \frac{n * N_i}{N}$$

Stratum -1 Africa Insurance S,C = $n_1 = \frac{n * N_1}{N} = \frac{142 * 376}{1527} = 34.96 \approx 35$

Stratum -2 = Nyala Insurance = $n_2 = \frac{n * N_2}{N} = \frac{142 * 382}{1527} = 35.5 \approx 36$

Stratum -3 = Global Insurance = $n_3 = \frac{n * N_3}{N} = \frac{142 * 192}{1527} = 17.85 \approx 18$

Stratum -4 = Ethio- Life Insurance = $n_4 = \frac{n * N_4}{N} = \frac{142 * 315}{1527} = 29.3 \approx 29$

Stratum -5 = Birhan Insurance = $n_5 = \frac{n * N_5}{N} = \frac{142 * 262}{1527} = 24.36 \approx 24$

$$n = \sum_i^{10} n_i = n_1 + n_2 + n_3 + n_4 + n_5$$
$$= 35 + 36 + 18 + 29 + 24 = 142$$

Table 3: Summary of Population and Sample Size in each Stratum

	Stratum	Population size	Sample size
Insurance Companies	Africa Insurance S,C	376	35
	Nyala Insurance	382	36
	Global Insurance	192	18
	Ethio- Life Insurance	315	29
	Birhan Insurance S.C	262	24
	Total	**1527**	**142**

Source: own computation

3.6. Empirical Estimation for Both Model

For primary analysis, we employed a Probit model to examine what affects factor affecting insurance companies' profitability in Ethiopia. Probit estimation is a nonlinear model of binary data. Probit models assume that the probability of a binary response is a cumulative normal distribution function of the explanatory variables (Horowitz & Savin, 2001).

The model is in general preferred to linear probability models, which may produce nonsensical predicted probabilities outside the 0-1 range (Gomila, 2021; Horowitz & Savin, 2001). Contrary to expectation, although probit is more theoretically appropriate than linear regression to binary outcomes, there is some evidence that linear regression performs better in practice in the estimation of causal treatment effects. Linear coefficients are simpler to interpret, and linear regression can be safer in case of interaction terms or fixed effects (Gomila, 2021).

However, probit models can be extended to handle ordered categorical data with more than two categories and different covariates by outcomes (Kim, 1995). Even though probit regression is a common tool for binary and ordinal outcomes, researchers must have in mind their specific analysis goals. For causal inference with binary outcomes, linear regression may suffice and be more interpretable. For more advanced ordinal data or whenever theoretical assumptions concerning underlying latent variables are essential, the probit models have the added advantage.

For the secondary analysis, we looked at the panel data using both basic and advanced statistics. First off, we gathered descriptive stats for our variables to see what's going on in the sample. Next, we created a correlation matrix to find out how the independent variables relate to each other and to the dependent variable. This would help us spot which independent variables are important, as well as check for any issues with multi-collinearity among them.

After that, we run multiple regression analyses and apply t-statistics to figure out the cause-and-effect relationship between the dependent and independent variables. This would also help us identify the key factors that impact profitability. When dealing with two or more independent variables, we refer to this as multiple correlations and use multiple regression equations, which we can compute using stats software (Gujarati, 2004).

3.7. Model Specification for Primary Data

Following hypotheses development, we specified probit regression of the econometric model: The model is derived on the basis of previous studies.

$$Pr(ROAi = 1) = \Phi(\beta 0 + \beta 1 \cdot AgeGroupi + \beta 2 \cdot age2i + \beta 3 \cdot Exci + \beta 4 \cdot RiskMi + \beta 5 \cdot Divi + \beta 6 \cdot PrD\ i + \beta 7 \cdot TAdi + \beta 8 \cdot Edi)$$

Where:

- $Pr(ROA = 1$; Probability that firm *i* has ROA value takes if the profitability increases 1, otherwise 0,
- Φ: Cumulative distribution function (CDF) of the standard normal distribution, since it's a probit model.

- $\beta 0$: Constant/intercept term.
- βj: Coefficients to be estimated for each explanatory variable.
- $AgeGroupi$: Age group category of the respondent i.
- $age2\_i$: Square of age or a second age variable (to capture non-linear age effects) i.
- $Exci$: Dummy or score representing how much the exchange rate impacts the policy of July, 2024 impacts the insurance company i
- $RiskMi$: Indicator if the firm uses any risk mitigation strategy associated with concentration and other risks i
- $Divi$: Indicator for whether the firm is diversified in products/markets to reduce concentration risks i.
- *Prdi*: Indicator for whether the firm has insurance against property damage whether damaged by the corridor development against profitability i
- *Tadi*: Level or binary indicator of technology adoption, if the insurance company adopted technology to improve services i.
- *Edi*: Education level of the staffs i.

3.8. Model Specification for Secondary Data

Following hypotheses development, the researcher specifies multiple regression of the econometric model: The model is derived on the basis of previous studies.

$$ROAit = \beta 0 + \beta 1Sizeit + \beta 2Infit + \beta 3LEVit + \beta 4GDPit + \beta 5Irit + \beta 6Exrit + \beta 7Growthit + \mu it$$

Where:

- i = company index
- t= time (year) index
- $ROAi$t = Return on Assets for company *i* in year *t*

- $\beta 0$ = Intercept (constant term)
- μit = Error term
- $Size$ = Log of total assets (proxy for company size)
- *Inf* = Inflation rate
- *LEV* = Leverage ratio
- *GDP* = Real Gross Domestic Product growth rate
- *Ir*= Interest rate
- *Exr*= Exchange rate
- G*rowth*= Growth rate of company revenue or assets

3.9. Ethical Considerations

The Research has been undertaken with the highest regard for ethical standards that would preserve dignity of the participants with confidentiality of the ideals and narratives of the respondent. The Privacy, safety and consent of the participants of this research work was ensured and respected. The study did not violate the privacy of the respondents as much as did explain that the purpose of the gathering of data was only to enable to the fulfillment of master degree in accounting and finance. Also, the data collection was conducted in a manner that it would be inclusive to encompass relevant participants who can provide the needed data and information to meet the study objective and enable one to explore the research questions.

CHAPTER FOUR

4. REGRESSION RESULTS, DISCUSSION AND SUMMARY

This chapter explains the findings, discussion, and results summary of the analysis of the data of the chosen insurance companies. It establishes significant trends and relations recorded in this research, interprets the findings in relation to the research questions and existing literature, and provides a summary of primary and secondary data sources main findings.

4.1. Primary Data Analysis

This Section presents the findings based on data collected from selected insurance. The study managed to collect primary data from five insurance firms, consisting of a total of 142 respondents, sampled out of a total of 1,527 employees. The respondents were selected purposefully to represent employees who were directly engaged in operational activities so that the views reflect informed opinions on the key issues under the study.

All the questionnaires distributed were duly filled and returned, representing a 100% response rate. A response rate this high is considered excellent and provides a very good basis for drawing valid and reliable inferences that are representative of the target population in the selected insurance companies (See table 4 of Summary Stastics).

4.1.1. Summary of Statistics

The dataset comprises 142 observations used to estimate the determinants of profitability's of insurances, a binary variable that takes the value 1 if the firm is profitable and 0 otherwise. On average, 88% of the firms in the sample are profitable, with a standard deviation of approximately 0.33.

The average age group of the respondents is around 2.37 (on a scale of 1 to 4), with values ranging from 1 (youngest group) to 4 (oldest group). The variable age squared (age2) has a mean of 6.37 and varies from 1 to 16, capturing potential nonlinear effects of age on profitability.

Table 4: Summary Statistics

Variables	Obs	Mean	Std.dev.	Min	Max
ROA	142	0.88028170	0.32578100	0	1
Agegroup	142	2.37323900	0.86384560	1	4
Age2	142	6.37323900	3.97618600	1	16
Exchangera~t	142	2.05633800	0.72223690	1	3
Riskmitiga~n	142	1.80714300	0.39595850	1	2
Diversific~n	142	2.28873200	0.73976210	1	5
Propertyda~e	142	1.59859200	0.49191850	1	2
Techadoption	142	1.92957700	0.78684110	1	4
Education	142	2.06338000	0.54856080	1	3

Source: own stata computation

Regarding exposure to macroeconomic factors, the Exchange Rate reform Impact variable has a mean value of 2.06 (scale: 1 to 3). This is showing that a moderate level of exchange rate influence on businesses. Risk Mitigation measures, likely a binary variable, have an average of 1.81, implying that most firms in the sample reported applying at least one form of risk management (Table 4).

Business Diversification scores average around 2.29 on a scale from 1 to 5. This indicating that moderate levels of diversification among the firms. Property Damage by corridor development is a binary variable with a mean of 1.60, indicating that approximately 60% of firms have this form of insurance. The Technology Adoption variable, measured on a scale of 1 to 4, has a mean of 1.93. It is showing relatively low to moderate levels of technology uptake (Table 4).

Finally, Education level among firm owners/managers has an average of 2.06 on a 3-point scale, implying that most respondents have at least a bachelor or master education.

4.1.2. Diagnostic and Interpretation

The stability of the probit regression model was checked by checking whether the model's assumptions were met. First, the data used for the analysis were a random cross-sectional sample such that observations are identically and independently distributed. This satisfies one of the most fundamental prerequisites for stable estimation of probit models.

Second, to check for the existence of multicollinearity in the explanatory variables, a correlation matrix was created. The outcome revealed that the majority of the variables were not highly correlated with one another. Nonetheless, there was high correlation between the variables age group and age2, and this is anticipated as age2 is a squared variable intended to measure non-linear effects of age. Although this does create some degree of multicollinearity, it is theoretically sound and common in empirical models for modeling curvature in age effects. No perfect multicollinearity existed, and overall, the no perfect linear relationship assumption between explanatory variables remains intact.

Third, standard errors were constructed that were able to handle any heteroskedasticity in the error terms. This adjustment is done such that the standard errors of the coefficient estimates remain valid even if the variance of the error terms does not remain homogeneous across observations (see table 5).

Table 5: Diagnostic robustness

	ROA	Age group	Age2	Exchan~t	Riskmi~n	D~ific~n	Proper~e	Techad~n	Educat~n
ROA	1.0000								
Agegroup	-0.1153	1.0000							
Age2	-0.0993	0.9814	1.0000						
Exchangera~t	0.0372	0.0140	0.0275	1.0000					
Riskmitiga~n	0.2063	0.0465	0.0409	0.3280	1.0000				
Diversific~n	0.0289	0.1833	0.1629	0.2709	0.1686	1.0000			
Propertyda~e	-0.1745	-0.1246	-0.1454	0.0830	0.0003	-0.0452	1.0000		
Techadoption	0.2526	-0.1791	-0.1808	0.0457	-0.0821	0.0905	0.1626	1.0000	
Education	0.5621	0.1432	0.1304	0.1579	0.1797	0.0885	-0.0850	0.2781	1.0000

Source: own stata computition

Finally, general model specification and goodness-of-fit were verified. Likelihood ratio chi-square test indicated that the model is significant at 1% level, i.e., the combined explanatory variables perform better to predict the dependent variable than would result from a model with no predictors. The pseudo-R-squared value of 0.6494 is quite good for a probit model. This is suggesting that the variables in the model explain much of the variation in the outcome variable.

Marginal effects were also conducted to see the applicability of the independent variables in practice. The estimates showed that variable Education is having significant and strong positive marginal effect on the probability that a firm is able to do better. Other variables, such as techadoption and property damage insurance, were found to be having marginal significance and demonstrated that they might help in making profitability.

Lastly, the diagnostic tests confirm that the probit model used in the analysis is statistically valid and sound. The primary assumptions are adequately met, and the model provides strong explanations of the determinants of firm performance in terms of industry standards (Table 5).

4.1.3. Probit Regression Results

Table 6: Probit Regression Results

						Number of obs = 142
						LR chi2(8) = 67.24
						Prob > chi2 = 0.000
						Pseudo R2 = 0.6494
ROA	**Coefficient**	**Std.err**	**Z**	**P>|z|**	**[95% conf. Interval]**	
Agegroup	-3.0192240	2.2563900	-1.34000	0.181000	-7.4416670	1.4032190
Age2	0.5235621	0.4845651	1.08000	0.280000	-0.4261680	1.4732920
Exchangerateimpact	-0.1075441	0.3795972	-0.28000	0.777000	-0.8515409	0.6364527
Riskmitigation	0.3985644	0.7612453	0.52000	0.601000	-1.0934490	1.8905780
Diversification	0.1092507	0.4148999	0.26000	0.792000	-0.7039382	0.9224397
Propertydamageinsurance	-1.1044970	0.6101033	-1.81000	0.070000	-2.3002770	0.0912839
Techadoption	0.9317157	0.5019716	1.86000	0.063000	-0.0521305	1.9155620
Education	2.9711540	0.6931935	4.29000	0.000000	1.6125190	4.3297880
_cons	-0.5143371	3.0943680	-0.17000	0.868000	-6.5791860	5.5505120

Source: stata own computation

The Probit regression results was estimated to examine the factor affecting of the probability of the insurance companies in Ethiopia. The model contains 142 observations and indicates general statistical significance (LR chi2(8) = 67.24, $p < 0.001$), where the pseudo-R-squared is 0.6494, which is an excellent fit (See Table 6).

Based on the coefficient estimates, education exerts a statistically significant positive (coefficient = 2.971, $p < 0.001$) effect. This is showing that higher educational levels among staff's and decision-makers considerably increase the likelihood of superior financial performance.

Adoption of technology is significant with a positive coefficient (0.932, p = 0.063). This suggesting that firms embracing new technologies experience superior of companies' performances. Property damage due to the corridor development has a negative coefficient of -1.104, p = 0.070, which is marginal and can imply that firms that have this type of insurance can face expenses or risks that lower profitability slightly (See Table 6).

Other explanatory variables such as age group, age squared, exchange rate effect, risk reduction, and diversification don't offer statistically significant coefficients.

4.1.4. Marginal Effects Probit Regression

Table 7: Marginal Effects Probit Regression

				Number of obs = 142		
ROA	**Coefficient**	**Std.err**	**Z**	**P>|z|**	**[95% conf. Interval]**	
Age group	-0.2206042	0.1610937	-1.370	0.171	-0.5363422	0.0951337
Age2	0.0382549	0.0348807	1.100	0.273	-0.0301101	0.1066198
Exchange rate impact	-0.0078579	0.0277103	-0.280	0.777	-0.0621691	0.0464534
Risk mitigation	0.0291217	0.0560825	0.520	0.604	-0.0807979	0.1390414
Diversification	0.0079826	0.0302084	0.260	0.792	-0.0512249	0.0671900
Property damage insurance	-0.0807017	0.0441639	-1.830	0.068	-0.1672613	0.0058578
Techadoption	0.0680772	0.0368168	1.850	0.064	-0.0040823	0.1402368
Education	0.2170919	0.0380979	5.700	0.000	0.1424215	0.2917624

Source: own stata computation

As seen in Table 7, the Probit regression marginal effects reveal that factor affecting of insurance companies' profitability's in Ethiopia. An additional unit in education level significantly increases the possibility of outperforming the industry by about 21.7 percentage points. This is suggesting that there is the positive relationship between higher education and profitability. As firms that adopt new technologies are more likely to experience improved profitability by around 6.8 percentage points. Although this effect is statistically significant at the margin, it shows that embracing technological innovations could result in improved profitability (see table 7).

Conversely, property damage of by corridor development appears to have a marginally negative impact on performance such that it will be less likely to perform better by about 8.1 percentage

points. This could indicate greater costs or risk elements with such insurance that will decrease profitability marginally.

These other controls, including firm age, exchange rate impact, risk prevention measures, and diversification, either lack statistically significant coefficients on profitabiliy in this model or do not have statistically significant coefficients. While some of them share estimated positive or negative coefficients, none of them having statistical significance means that their relative impacts on profitability.

In short, the evidence points towards the critical role of education and technological advances in enhancing firm profitability, but cautioning that some risk-related measures have costs that affect returns (see Table 7).

4.2. Secondary Data Analysis

The first part looks at primary data, focusing on sector-specific and institutional factors like corridor development projects, changes in the floating exchange rate, the expected entry of foreign insurers, and staff age and education. We analyzed these factors through cross-sectional analysis to see how they affect profitability in the insurance sector.

The second part makes use of secondary panel data to carry out regression analysis. This involves testing the assumptions of the Classical Linear Regression Model (CLRM), including checks for heteroskedasticity, multicollinearity, autocorrelation, and normality. We also performed correlation analysis to understand the relationships between the key macroeconomic variables like GDP growth, inflation, interest rates, and exchange rates and their impact on the profitability of insurance companies.

4.2.1. Classical Linear Regression Model (CLRM) Assumptions and Diagnostic Tests

Before going into the panel data econometrics, we ran some diagnostic tests to check if the basic assumptions of the classical linear regression model were met. Brook (2008) pointed out that keeping the data valid is essential for the results of the research to be reliable. This helps identify any mistakes in the model and fix them to improve the research quality. The next sections will go

over the results from the diagnostic tests we did, like checking for normality, heteroscedasticity, autocorrelation, and multicollinearity. We'll present the test results, the rules we followed, and discuss what they mean in the following subsections.

4.2.2. Heteroscedasticity Test

Brooks (2008) pointed out that we often assume that the error terms have the same variance, which is called homoscedasticity. If the variance isn't constant, then we call it heteroscedasticity. You can check for this using the White test, which helps determine if there's a consistent variance (homoscedasticity) or inconsistent variance (heteroscedasticity) in the error terms.

Heteroskedasticity Test (Breusch–Pagan/Cook–Weisberg)

To check if there's a problem with heteroskedasticity in the model, we used the Breusch–Pagan/Cook–Weisberg test, assuming the errors follow a normal pattern. This test looks at whether the leftover values from our model have a constant variance (called homoscedasticity) or not (called heteroskedasticity). The null hypothesis says the leftover values have constant variance, while the alternative says they don’t. If the p-value is less than 0.05, we reject the null hypothesis.

In our case, the test gave us a chi-square value of 0.17 and a p-value of 0.6796. Since the p-value is much greater than 0.05, we don’t reject the null hypothesis. So, we can say there’s no sign of heteroskedasticity in the model, which means our assumption of constant variance still stands. This shows that the variance of the errors stays the same across different observations, which supports the trustworthiness of the estimated coefficients.

4.2.3. Multicollinearity

When you use the panel least squares method, one basic assumption is that the independent variables don't mix with each other. If these variables don't relate to one another, they are considered orthogonal. If they are orthogonal, changing the number of variables in a regression equation won’t affect the coefficients of the others. But if one independent variable can be exactly predicted by the others, that’s called perfect collinearity, and you can't use OLS in that case.

According to Churchill (2005), when there's multicollinearity, it reduces the information we have about how the independent variables impact the dependent variables. This might lead us to think some variables aren't connected to the dependent ones when they actually are. The assumption allows for some correlation among independent variables, but not perfect correlation. Without that, multiple regression would lose its usefulness in econometric analysis.

There are different views on the multicollinearity issue. Gujarati (2004) pointed out that multicollinearity is a problem when the correlation between variables is over 0.75. Cooper (2008) raised the bar a bit, saying that a correlation over 0.8 can make estimates inefficient and results less reliable. Hair (2006) noted that a correlation below 0.9 shouldn't really cause serious multicollinearity issues. So, it seems there's no clear consensus on what level of correlation leads to problems with multicollinearity.

Table 8: Correlation Matrix of Explanatory Variables

	ROA	GROWTH	LEVERAGE	logass~s	gdp	infla	ex
ROA	1.0000						
GROWTH	-0.0125	1.0000					
LEVERAGE	-0.6984	0.3184	1.0000				
log assets	0.0261	-0.0288	-0.0444	1.0000			
gdp	0.1483	0.1772	0.0995	-0.3699	1.0000		
infla	-0.0243	0.0755	-0.0085	-0.2401	0.6224	1.0000	
ex	0.2921	0.0827	0.0091	-0.1456	0.5458	0.1355	1.0000

Source: own stata computation

In this study, we created a correlation matrix to look at how six independent variables relate to each other: GROWTH, LEVERAGE, logassets, GDP, inflation, and exchange rate (EX). The results, shown in Table 8, revealed that the strongest correlation we found was –0.6984 between ROA and LEVERAGE. Experts have set standards for multicollinearity. For example, Gujarati (2004) says 0.75 is a warning sign, Cooper (2008) suggests 0.80, and Hair (2006) goes with 0.90. Since our correlation values are below these numbers, we don't see any major issues with multicollinearity. So, we can say that these independent variables aren't strongly linked to each other. This means that adding or removing one from the regression model won't really change

the estimated values of the others. As a result, we can trust that our regression estimates are stable and reliable.

Table 9: Testing muti-colinearity problem

Variable	VIF	1/VIF
gdp	2.84	0.352174
infla	1.83	0.545947
ex	1.6	0.626035
logassets	1.17	0.856798
GROWTH	1.14	0.875104
LEVERAGE	1.13	0.8848
Mean VIF	1.62	

Source: own stata computation

The table above shows how the independent variables relate to each other. As Morgan et al. (2004) pointed out, a variance inflation factor (VIF) over 10 or a tolerance value (1/VIF) under 0.1 suggests multi-collinearity issues. In this case, none of the VIFs are above 10, and none of the 1/VIF values are below 0.1. This means that the independent variables in this study don't explain each other, so we can keep all of them in our model.

4.2.4. Regression Result Analysis of Secondary Data

Table 10: Regression Result Analysis of Secondary data

Source	SS	df	MS			
Model	382.769372	6	63.79	Number of obs	=	70
Residual	211.912157	63	3.36	F(6,63)	=	18.97
Total	594.681529	69	8.62	Prob > F	=	0.000
				R-squared	=	0.6494
				Adj R-squared	=	0.6097
				Root MSE	=	1.834
ROA	Coefficient	Std.err	z	P>|z|	[95% conf.	interval]
GROWTH	0.0163579	0.0066817	2.4500000	0.0170	0.0030056	0.0297101
LEVERAGE	-2.7470400	0.2795903	-9.8300000	0.0000	-3.3057570	-2.1883230
logassets	0.0007017	0.0008942	0.7800000	0.4360	-0.0010852	0.0024887
gdp	1.4487440	0.7660306	1.8900000	0.0630	-0.0820456	2.9795340
infla	-0.0677362	0.0335776	-2.0200000	0.0480	-0.1348358	-0.0006366
ex	0.0021548	0.0010823	1.9900000	0.0510	-0.0000080	0.0043176
_cons	8.7165770	1.2273560	7.1000000	0.0000	6.2639020	11.1692500

Source: own stata computation

The regression table above shows how different factors affect how well insurance companies in Ethiopia perform financially, specifically looking at their Return on Assets (ROA). The model looks at both company-specific and broader economic factors.

With an R-squared value of 0.6494, around 65% of the changes in ROA can be explained by the variables in this model. The adjusted R-squared value of 0.6097 supports this, even after considering the number of variables used. Scholars like Cameron and Hsiao, mentioned in Nyamsogoro's work, suggest that an R-squared over 20% is good for panel data analysis, which means this study has strong explanatory power.

The F-statistic is 18.97 with a p-value of 0.000, showing that the overall model is statistically significant at the 1% level. This means that the independent variables together do a good job of explaining the changes in ROA, and we can reject the idea that all coefficients are zero. Growth has a positive and significant effect on ROA ($p = 0.017$), indicating that as insurance companies grow, they tend to be more profitable. On the other hand, leverage has a strong negative relationship with ROA ($p = 0.000$), meaning more debt is associated with less profitability for these firms. Company size, measured by assets, has a positive but not significant impact on ROA ($p = 0.436$), suggesting size doesn't really affect profit.

GDP has a positive relationship with ROA and is somewhat significant at the 10% level ($p = 0.063$), hinting that the overall economy might influence profitability. Inflation, on the contrary, is negatively related to ROA ($p = 0.048$), indicating that rising inflation can be bad for the financial performance of insurance companies. Finally, exchange rates also show a positive effect on ROA and are marginally significant ($p = 0.051$), which suggests that changes in exchange rates might affect profitability, possibly through foreign investments or currency value changes.

4.2.5. Discussion of Findings

4.2.5.1. Discussion of Multiple Regression Results

This study examined the profitability of Ethiopian insurance companies by analyzing multiple regression results, with a focus on the impact of key determinants using secondary data sources.

The growth coefficient of the firm is 0.0164 with a p-value of 0.017, and it is positive and statistically significant at the 5% level. This indicates that as Ethiopian insurance companies increase in size in terms of total assets, they become more profitable. This finding supports the efficiency-resource theory, which asserts that expansion enables companies to exploit economies of scale, reduce risk, and improve operating efficiency.

The result agrees with Abate (2012) and Ahmed et al. (2011), who documented a positive impact of asset growth on profitability in the Pakistani and Ethiopian insurance sectors, respectively. Pervan and Visic (2012) also documented that asset growth significantly enhances the performance of insurance companies in Croatia. Chen and Wong (2004) in the Asian insurance market also observed that high growth is an indication of firm stability and hence, consequently, attracts more customers, leading to enhanced profits. This contrast, however, with that of Ajao and Ogieriakhi (2018) who posited a negative relationship in the Nigerian insurance sector on the basis that rapid growth may be unsustainable and would lead to inefficiencies if accompanied by inefficient risk management and excessive costs.

The regression also reveals that leverage has a statistically significant and negative coefficient of -2.747 and p-value of 0.000, which means that greater usage of debt finance diminishes profitability significantly. Increased leverage implies increased financial risk, particularly for insurance companies whose liabilities are already in doubt with the attendant claim obligations.

It supports the pecking order model of how firms choose their sources of financing. It indicates that firms value internal financing above debt as a way of avoiding financial distress cost. It supports the findings of Pjanić et al. (2018) of the European market, Çekrezi (2015) of Albania, and Yuvaraj and Abate (2013) of Ethiopia that established that excessive leverage damages insurer profitability.

Mistre (2015) and Almajali et al. (2012) also provide empirical evidence to support the belief that a high debt-to-equity ratio increases financial risk, ultimately hurting performance. However, there are studies such as Khan et al. (2015) and Teklit and Jasmindeep (2017), which have shown a positive relationship, suggesting that under certain regulatory environments, leverage may be used efficiently enough to enhance returns. However, aggregate evidence, including this study, is biased towards a negative impact.

Firm size, employing the natural logarithm of assets as the measure, is statistically insignificant (coefficient = 0.0007, p-value = 0.436) and hence does not verify scale economies and operational synergies for bigger insurers to realize better profitability in the Ethiopian insurance industry.

This is opposed to earlier studies such as Kaya (2015) and Daniel and Tilahun (2013), who created a strong positive impact of firm size on profitability. Lee (2014), in a study of Taiwanese insurance company performance, also created that larger companies have brand recognition, resource access, and risk diversification, which improves performance.

However, Cekrezi (2015) and Mistre (2015) added that beyond a point, larger size can create diseconomies of scale, yielding rising management complexity and inefficiency. Irrelevance in this study may imply that Ethiopian insurers have not yet maximally benefited from size advantages or suffer structural inefficiencies that offset such benefits.

The growth coefficient for GDP is 1.449 with a p-value of 0.063 and reflects a positive but statistically not significant relationship with profitability. While an expanding economy tends to spur the buying of insurance due to rising incomes and business, the implication of this result is that economic growth in Ethiopia has not always served to enhance the insurers' profitability.

This agrees with Aster and Meseret (2013) and Lee (2014), who also confirmed that GDP growth had little effect on insurance profitability. A reason being that the benefits of economic growth could be negated by increased competition or regulation in the insurance sector.

However, this finding contrasts with that of Batool and Sahi (2019) and Kramaric et al. (2017), who found a positive and significant relationship in Pakistan and Croatia, respectively. These studies posit that macroeconomic growth raises business wealth and household income, causing demand for insurance products to be increased. The divergence could be due to the unusual performance of the insurance market in Ethiopia, with low competition and market penetration narrowing margins.

Inflation is negatively and statistically related to profitability (coefficient = -0.0677, p-value = 0.048). Inflationary pressures lower insurer profitability through presumably rising claims and administration costs that eat into real returns, especially when premiums are fixed in advance.

This is consistent with the monetary decline hypothesis in which inflation lowers real profitability since purchasing power is declining. It is consistent with studies in Romania by Burca and Batrinca (2014) and in Kenya by Mwangi and Murungi (2015), where the two indicated a negative influence of inflation on profitability.

Conversely, Hussain (2015) found a positive relationship in Pakistan, arguing that inflation could raise nominal asset prices, which would generate higher returns in the short run. However, these benefits appear to be absent in the Ethiopian context, where cost inflation will not be followed by corresponding premium adjustments.

Exchange rate is positively and marginally significant to profitability (coefficient = 0.0022, p-value = 0.051), suggesting that appreciation of the exchange rate moderately increases insurer profitability. This could be due to a strong domestic currency lowering the price of foreign services like reinsurance and imports of technology.

This result is consistent with studies in emerging markets where exchange rate stability improves investment and reduces foreign cost of liability, e.g., Owolabi and Adegbite (2012) for Nigeria. However, the marginal significance hints at prudence since Ethiopian insurance companies could have limited foreign exchange exposure on account of regulatory overhang. Conversely, Mlambo and Biekpe (2007) observed a negative effect of exchange rate volatility on financial institutions in Southern Africa, emphasizing the dangers of currency movement. Mixed findings indicate that the effect of the exchange rate on insurer profitability is situationally dependent, based on the level of internationalization and exposure.

4.2.5.2. Discussion of Probit Regression Results

The probit regression results inform us about the determinants that have an important role to play in the profitability of insurance companies in Ethiopia. In particular, education, use of technology, and property damage insured by the companies are key determinants, each with important policy and practice implications for the insurance sector in Ethiopia.

Among all the variables, education has the highest and statistically significant positive impact on profitability (coefficient = 0.217, $p < 0.01$). It suggests that better-educated insurance personnel or managers would be likely to produce successful insurance firms. In Ethiopia where skill

shortages and low financial literacy remain prevailing constraints, the result emphasizes the imperative need for strengthening human capital development.

This conclusion is consistent with the regional studies. N'Souvi et al. (2021) stated that in Africa, participants with higher levels of education in the insurance industry are more likely to adopt innovative and adapt to the new market dynamics. Therefore, it becomes imperative to focus on actively professional, graduate retention, and training programs within the Ethiopian insurance industry. The core essence of human capital is further supported by evidence from other nations. Nicholas Asare et al. (2011) studied 36 life and non-life insurance companies in Ghana from 2007 to 2011, and they found a strong positive association between profitability and intellectual capital (IC). The impact of human capital on intellectual capital (IC) was the most significant. Such trends have also been documented in Indonesia. Nurmala Ahmar (2017) analyzed 10 listed insurance firms from 2010-2013 and found that human capital and capital employed had a positive impact on financial performance, unlike structural capital. Z. John Liu (2014) covering 2008-2011, also noted the impact of human capital on the operational efficiency of general insurance companies. All these contextually divergent studies have one thing in common, the overwhelming impact of human capital especially in regards to education and skill enhancement on profitability and innovation in the insurance sectors.

Adoption of technology also has a significant and positive impact on profitability (coefficient = 0.068, $p = 0.064$). This indicated that insurance companies that embrace digital applications and new systems are expected to perform well. In Ethiopia, financial sector digitalization is yet in its initial stages with low insurtech penetration, poor infrastructure, and data issues. Despite these constraints, the positive impact of technology adoption in Ethiopia is consistent with trends elsewhere on the globe. Alabdullah (2023) study shows that the financial sector including insurances technologies make business more profitable because they make operations more efficient and reduce costs.

Supporting evidence from other countries in Africa further reinforces this view. In Kenya, for example, a study by Florence Mueni and Caren Angima (2022) confirmed that digitalization led to perceived customer satisfaction, speed of service delivery, and profitability for insurance firms. Similarly, Ahmed et al's (2023) study in Somalia concluded that technology positively affected organizational performance, particularly in enhancing efficiency and quality of services.

Globally, the benefits of digital uptake are equally evident. A study published in 2023 in MDPI on Chinese insurance companies revealed that artificial intelligence, big data, and blockchain technologies play a significant role in reducing information asymmetry and transaction costs. This, in turn, boosts innovation and operational efficiency in the insurance sector. These findings collectively underscore the imperative of embracing digital transformation in the insurance industry.

For Ethiopia, investment in digital infrastructure and encouragement of the use of emerging technologies offers a window of opportunity for better performance, profitability, and competitiveness in the sector.

Notably, property damage by corridor development has a negative and significant impact on profitability (coefficient = -0.081, p = 0.068). This indicates that insurance providers with high involvement in covering properties tend to incur greater loss or inefficiencies.

In Ethiopia, property damage has increasingly been linked with corridor development projects, particularly corridor-type developments in roads. Such losses are usually uninsured in most cases, especially given the comparatively less developed state of the Ethiopian insurance industry and the largely restricted access to cover for property insurance.

Nevertheless, compared with the Ethiopian case where development-induced damage is the most dominant issue, studies in other countries reveal that insured damages to properties are triggered most often by natural disasters and meteorological hazards. A prime example is the study of Benjamin J. Keys and Philip Mulder (2024), where the subject is the United States. Their research highlights how property owners' insurance premiums have increased dramatically in states that are prone to catastrophes like Florida, California, and Texas, primarily due to the increasing risks associated with hurricanes, wildfires, and flooding, and higher reinsurance costs. The same trends occur in other countries. In Australia, the 2022 floods were the costliest natural disaster in the country's history at over AUD 5 billion in insured losses, as assessed by the Insurance Council of Australia.

These global experiences demonstrate that property loss under insurance can arise from a wide diversity of causes including environmental, climatic, and systemic economic occurrences. In contrast, Ethiopian property risks are characterized by developmental factors and the lack of

comprehensive insurance mechanisms. This contrast serves to emphasize the need for Ethiopia not just to deepen its coverage of insurance but also to introduce policies that protect properties against man-made perils, so that it develops a more resilient and more inclusive property risk management system. Other controls including agegroup, Exchange Rate Impact, Risk Mitigation, and Diversification were not statistically significant. The exchange rate fluctuation has not affected the profitability of the insurance companies, but in unstructured interview these variables affected the sector.

Finally, results of the unstructured interviews indicated that preparation for the entry of the new insurance shows that they are not ready. Most of the participants did not actively prepare or expect the entry of the new insurance companies. The major obstacles to the profitability of insurance companies are inflation, consumer unawareness, National Bank of Ethiopia (NBE) rules, over competition as there are many insurance companies in the sector, consumer delay in paying premiums, low consumer expectations, and volatile interest rates. This is aligning with previous studies results. For example. Chilekezi (2024) explains how inflation has a major impact on the operation of insurance in Nigeria, noting that higher inflation translates to higher operating expenses for insurance firms, eventually eating into their profitability and financial sustainability. In the same vein, EIOPA (2023) noted how European insurers were struggling with inflationary pressures, especially with higher liabilities and lower real investment returns. Concerning managing risks beyond macroeconomic ones, Gerrard (2006) addresses the risk management practices of insurers in Kenya, with a focus on methods of handling an extensive range of risks, including economic, legal, political, and operational uncertainties.

4.2.6. Summary of Finding

The probit regression results showed that education, technology adoption, and property damage cover are statistically significant factors of insurance company profitability. These findings imply that companies investing in human capital with expertise and telecommunication infrastructure, and offering suitable risk coverage products, particularly for property loss, are expected to enjoy superior financial performance. These results point to the importance of operating upgradation and market-oriented product innovation in enhancing profitability. The multiple regression analysis also provided further details concerning the quantitative impact of internal and external variables on profitability, as measured by Return on Assets (ROA):

1. Firm Growth positively and significantly affected profitability, showing that asset growth enhances operating efficiency and returns. This is in line with findings by Abate (2012), Ahmed et al. (2011), and Pervan and Visic (2012), but contradicts Ajao and Ogieriakhi (2018) who found that growth can be negative if it leads to inefficiencies.
2. Leverage exhibited a negative and highly significant relationship with profitability, validating the theory that high debt financing increases financial risk and reduces performance. The result supports research by Pjanić et al. (2018), Çekrezi (2015), and Yuvaraj and Abate (2013), but contrasts with studies like Khan et al. (2015) that argue potential benefits of leverage under different regulatory environments.
3. Firm Size, proxied by the natural logarithm of total assets, had a positive but insignificant impact on profitability. This indicates that size does not necessarily confer financial gains in the Ethiopian insurance sector. The finding contradicts earlier work by Kaya (2015) and Daniel and Tilahun (2013) that reported significant scale economies, but supports reasoning by Cekrezi (2015) that diseconomies of scale can occur in large companies.
4. GDP Growth had a positive but insignificant effect on profitability. While economic growth tends to be good for business expansion and demand for insurance, its impact appears to be weak in Ethiopia, possibly due to underdeveloped markets. The result is in agreement with Aster and Meseret (2013) and Lee (2014), though it varies from Batool and Sahi (2019) and Kramaric et al. (2017) who found GDP to be a significant predictor of insurer profitability.
5. Inflation negatively and significantly affected profitability. Rising inflation likely increases claim expenses and operating expenses, reducing real returns. This supports the monetary decline hypothesis and is consistent with findings by Burca and Batrinca (2014) and Mwangi and Murungi (2015).
6. Exchange Rate positively and borderline significantly affected profitability, suggesting that currency appreciation may lower the cost of foreign inputs such as reinsurance. This supports evidence from emerging markets by Owolabi and Adegbite (2012), though its borderline significance should be cautiously interpreted in light of Ethiopia's low foreign exchange exposure.
7. Education was the most important variable with evident positive and statistically significant relationship with profitability. This finding confirms the key role of human

capital development in propelling insurance firms' performance. In a situation in which professional competences and economic literacy are insufficient, higher levels of education within staff enable them better to improve strategic management decisions and operating performances. This result is consistent with a series of international research works conducted in Ghana, Indonesia, and China, among others, wherein all of them confirm that human capital, in most cases education, possesses a high positive correlation with the financial performance in the insurance industry.

8. Technology adoption also had a positive impact on profitability. Though marginally noteworthy, this discovery shows that insurance companies that implement digital systems and solutions are likely to achieve operational efficiency and improved customer service, hence profitability. Despite low insurtech penetration and sparse digital infrastructure in Ethiopia, this discovery is consistent with research in Kenya, Somalia, and China, where digital transformation proved to improve efficiency, reduce costs, and make innovation in the insurance industry possible.
9. On the other hand, property damage specifically in connection with infrastructure corridor development was found to have a profound and adverse impact on profitability This suggests that insurers with extensive exposure to property risk in terms of development schemes might incur higher cost, losses, or inefficiency. Contrary to worldwide patterns, where exposure to risk of property damage usually corresponds to natural disasters, the Ethiopian context is defined by issues like uninsured damage resulting from development and inadequate risk-sharing mechanisms. This is an indication of the importance of more extensive property insurance coverage and regulatory backing for the management of man-made hazards.
10. Other controls such as age of staff, perception of exchange rates, risk mitigation activities, and diversification measures were not statistically significant in determining profitability. This is possibly because the relatively limited, focused, and less diversified size of Ethiopia's insurance market is one where demographic has not yet had strong impact on firm-level outcomes.
11. Results of the unstructured interviews indicated that preparation for the entry of the new insurance providers was neutral in its rating. Most of the participants did not actively prepare or expect the entry of the new insurance companies. The major obstacles to the

profitability of insurance companies are inflation, consumer unawareness, National Bank of Ethiopia (NBE) rules, over competition as there are many insurance companies in the sector, consumer delay in paying premiums, low consumer expectations, and volatile interest rates. Notably, projected inflationary pressures as a consequence of exchange rate reforms were seen through profitability outcomes, align to outcomes in Nigeria and Europe where inflation has had a noticeable effect on insurance business.

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

This chapter presents the results, conclusion, and recommendations from data analysis gathered from the focused insurance companies. It summarizes the principal findings of the study, draws conclusions on the research objectives and hypotheses, and provides practical recommendations to stakeholders to enhance the profitability of insurance firms in Ethiopia.

5.1. Conclusion

This study investigates the factor affecting of the profitability of insurance firms in Ethiopia using a mixed research design was employed to capture the richness of the issue by utilizing both primary and secondary data sources. Primary data were collected through structured questionnaires and unstructured interviews, while secondary data were obtained from audited financial reports and publications from the National Bank of Ethiopia (NBE). Data were collected from five insurance firms such as Africa Insurance, Nyala Insurance, Global Insurance, Ethio-Life& General Insurance, and Birhan Insurance selected using systematic random sampling. The companies provided both primary data, through questionnaires of key officials, and secondary data, through audited financial reports from 2011 to 2024 gathered from the National Bank of Ethiopia. Probit regression model was used in the research to model the primary (binary) outcomes and multiple regressions for panel data analysis to examine the impact of various variables.

Probit regression analysis identified that there were several variables that were significant in shaping the impact of an insurance company. They involved risk avoidance practices, diversification in products and services, use of technology, and employees' qualifications. The findings place emphasis on the significant roles of education, technology adoption, and property damage cover in shaping firm performance in the industry. Among these, education was the most dominant factor with a very positive impact, emphasizing the importance of investment in human capital. This supports the need for better training, retention of graduates, and schemes for professional development to address Ethiopia’s skill shortages and improve managerial competence in insurance firms.

Embracing technology also showed a positive effect on profitability, which means that digitalization no matter how nascent in Ethiopia bodes well with operational effectiveness and competitiveness. Investment in digital infrastructure, improved data systems, and encouraging insures innovations are therefore pivotal to revamping the industry. Conversely, property damage by corridor development was found to have a detrimental impact on profitability, particularly due to development-related losses linked to infrastructure projects. This suggests an urgent necessity for restructuring property insurance policies and establishing all-encompassing coverage frameworks that address man-made and developmental losses.

Results of the unstructured interviews indicated that preparation for the entry of the new insurance providers was neutral in its rating. Most of the participants did not actively prepare or expect the entry of the new insurance companies. The major obstacles to the profitability of insurance companies are inflation, consumer unawareness, National Bank of Ethiopia (NBE) rules, over competition as there are many insurance companies in the sector, consumer delay in paying premiums, low consumer expectations, and volatile interest rates. Notably, projected inflationary pressures as a consequence of exchange rate reforms were seen through profitability outcomes, align to outcomes in Nigeria and Europe where inflation has had a noticeable effect on insurance business.

Firm Growth positively and significantly affected profitability, showing that asset growth enhances operating efficiency and returns. This is in line with findings by Abate (2012), Ahmed et al. (2011), and Pervan and Visic (2012), but contradicts Ajao and Ogieriakhi (2018) who found that growth can be negative if it leads to inefficiencies. Leverage exhibited a negative and highly significant relationship with profitability, validating the theory that high debt financing increases financial risk and reduces performance. The result supports research by Pjanić et al. (2018), Çekrezi (2015), and Yuvaraj and Abate (2013), but contrasts with studies like Khan et al. (2015) that argue potential benefits of leverage under different regulatory environments.

Firm Size, proxied by the natural logarithm of total assets, had a positive but insignificant impact on profitability. This indicates that size does not necessarily confer financial gains in the Ethiopian insurance sector. The finding contradicts earlier work by Kaya (2015) and Daniel and Tilahun (2013) that reported significant scale economies, but supports reasoning by Cekrezi (2015) that diseconomies of scale can occur in large companies.

GDP Growth had a positive but insignificant effect on profitability. While economic growth tends to be good for business expansion and demand for insurance, its impact appears to be weak in Ethiopia, possibly due to underdeveloped markets. The result is in agreement with Aster and Meseret (2013) and Lee (2014), though it varies from Batool and Sahi (2019) and Kramaric et al. (2017) who found GDP to be a significant predictor of insurer profitability. Inflation negatively and significantly affected profitability. Rising inflation likely increases claim expenses and operating expenses, reducing real returns. This supports the monetary decline hypothesis and is consistent with findings by Burca and Batrinca (2014) and Mwangi and Murungi (2015). Exchange Rate positively and borderline significantly affected profitability, suggesting that currency appreciation may lower the cost of foreign inputs such as reinsurance. This supports evidence from emerging markets by Owolabi and Adegbite (2012), though its borderline significance should be cautiously interpreted in light of Ethiopia's low foreign exchange exposure.

Overall, the study concludes that improving human capital, driving digital revolution, and strengthening risk management practices are at the center of making the Ethiopian insurance market sustainable, profitable, and resilient. Addressing structural inefficiencies and regulation issues will also go a long way in enabling companies to gear up towards market developments and compete well within an evolving financial environment.

5.2. Recommendations

Based on this analysis into the profitability of insurance companies in Ethiopia, the following proposed recommendations:

1. **Invest in Technological Innovation (Insurtech):**
   Insurance companies should invest in modern technologies such as digital platforms, automation, and customer relationship management systems. Enhanced digital capability can improve operational efficiency, reduce costs, and expand outreach—especially in underserved rural areas.

2. **Enhance Staff Education and Training:**
   Since education was found to have a significant positive effect on profitability, insurers should provide continuous professional development for employees and recruit skilled professionals to strengthen technical competence, strategic planning, and service quality.

3. **Revise Underwriting Strategies for Infrastructure-Linked Risks:**
   The negative effect of property damage coverage in large development projects suggests a need to reassess pricing and risk assessment mechanisms. Companies should adopt more robust actuarial models and diversify their risk pools.

4. **Manage Leverage Prudently:**
   Given the adverse effect of high leverage on profitability, insurers should maintain optimal debt-equity ratios and improve internal capital generation to reduce financial risk and dependence on external financing.

5. **Mitigate Inflationary Pressure:**
   Since inflation significantly reduces profitability, insurance firms should consider inflation-adjusted pricing strategies and invest in inflation-hedged financial instruments to preserve real income.

6. **Capitalize on Exchange Rate Movements:**
   With exchange rate changes showing a modest positive effect, insurers can strategically manage foreign-denominated assets and liabilities to benefit from currency movements, particularly after Ethiopia's shift to a floating exchange rate regime.

7. **Strengthen Public Awareness and Outreach:**
   The low level of consumer awareness remains a structural barrier to growth. Companies should invest in education campaigns and financial literacy programs to boost insurance uptake, particularly in rural and underserved regions.

8. **Engage with Regulators for Sector Reform:**
   Insurers should actively engage with the National Bank of Ethiopia and other policymakers to advocate for more flexible regulations that encourage innovation, market entry, and healthy competition.

9. **Prepare for Competitive Pressure from New Entrants:**
   With potential market liberalization, local insurers must build competitive advantages by improving customer service, product innovation, and pricing strategies to retain market share and remain resilient against foreign competitors.

REFERENCE

Abate G. A., (2012). Factors Affecting Profitability of Insurance Companies in Ethiopia: Panel Evidence, MSC thesis, Addis Ababa University

Abate, G., & Yuvaraj, S. (2013) .A study on performance of insurance companies in Ethiopia .International Journal of Marketing, Financial Services and Management Research, 2(7), 138 -150.

Aster, K.A., & Meseret, T.A. (2019) .Determinants of Financial Performance; Evidence from Ethiopia Insurance Companies .Journal of Accounting, Finance and Auditing Studies, 5/, 155-172

Abdeljawad, I., & Dwaikat, L.M. (2017) .The determinants of profitability of insurance companies in Palestine .Faculty of Economics and Social Sciences An-Najah National University

Ajao, M.G., & Ogieriakhi, E. (2018) .Firm Specific Factors and Performance of Insurance Firms in Nigeria .Amity Journal of Finance, 3 (1), (14-28)

Alali, M.S., Boyabes, H.S., & Alfailakawi, A.S. (2018).The evaluation of macroeconomic factors influence on the financial performance of general insurance companies listed at the Kuwait stock exchange. International Academic Journal of Economics and Finance, Volume 3, Issue 2, pp. 427-434

Almajali, A. Y., Alamro, S. A., & Al-Soub, Y. Z. (2012) .Factors affects the Financial Performance of Jordanian Insurance Companies Listed at Amman Stock Exchange .*Journal of Management Research*, *4*(2). Doi: 10.5296/jmr.v4i2.1482

Alomari, M.W., & Azzam, I.A. (2017) .Effect of the micro and macro factors on the performance of the listed Jordanian insurance companies' .International Journal of Business and Social Science, Vol. 8, No. 2

Ana-Maria, B., & Ghiorghe, B. (2014) .The Determinants of Financial Performance in the Romanian Insurance Market .International Journal of Academic Research in Accounting, Finance and Management Sciences. Vol. 4, No.1, pp. 299–308

Asrat, L., & Tesfahun, T. (2016) .Determinants of profitability in private insurance company's in Ethiopia .Journal of Poverty, Investment and Development,Vol.26, Pp.85-92

Association of Ethiopian Micro-Finance Institutions, (2011).Retrieved from http://microfinanceafrica.net/tag/association-ofethiopian-microfinance institutions/

Batool, A., & Sahi, A. (2019).Determinants of Financial Performance of Insurance Companies of USA and UK during Global Financial Crisis (2007–2016) .International Journal of Accounting Research, 7:194. Doi: 10.35248/2472-114X.19.7.194

Boadi, Antwi & Lartey, (2013) .Determinants of profitability of insurance firms in Ghana, International Journal of Business and Social Research, vol. 3, no. 3, p. 43-50.

Burca, M., & Batrinca, G. (2014) .The determinants of financial performance in the Romanian insurance market .International Journal of Academic Research in Accounting, Finance and Management Sciences, 4 (1), 299-308.

Çekrezi, A. (2015). Determinants of financial performance of the insurance companies: a case of albania International. Journal of Economics, Commerce and Management, Vol. III, Issue 4

Charumathi, B. (2012). On the Determinants of Profitability of Indian Life Insurers – An Empirical Study .Proceedings of the World Congress on Engineering, 1, 978-88.

Chen & Wong, (2004) .Determinants of financial health of Asian insurance companies' .Journal of Risk and Insurance, Vol. 71, No 3

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

Cudiamat, A., & Siy, S.G. (2017) .Determinants of profitability in life Insurance companies: Evidence from the Philippines, Essays in Economics and Business Studies, Pp.165-185

Daare, W.J. (2016).Factors affecting general insurance companies profitability: empirical study in india. International Journal of Marketing, Financial Services & Management Research, Vol.5 (12), DECEMBER (2016), pp. 1-8

Dagim A. (2019). Factors affecting financial performance of non-life insurances companies in Ethiopia .An empirical study, Master's thesis, Addis Ababa University, Ethiopia

Daniel, M., & Tilahun, T. (2013) .firm specific factors that determine insurance companies' performance in Ethiopia .European scientific journal, edition vol.9, no.10 issn: 1857 – 7881 (print) e - issn 1857- 7431, Arbaminch university and Bahridar university.

Demis, H. (2016). Macroeconomic and firm specific determinants of profitability of insurance industry in Ethiopia .Global Journal of Management and Business Research, 6(7)

Derbali, A., & Jamel, L. (2016) .Determinants of performance of Tunisia insurance companies: Case of life insurance. Higher Institute of Management of Sousse, University of Sousse, Tunisia

Doumpos, M., Gaganis, C., & Pasiouras, F. (2012) .Estimating and Explaining the Financial Performance of Property and Casualty Insurers: A Two-Stage Analysis .The Business and Economics Research Journal, Volume 5, 155-170

Dwivedi, D.N. (2002). Managerial Economics (6th ed.), New Delhi: Vikas Publishing House PVT Ltd.

Ethiopia-African Economic Outlook, (2016) .http://www.et.undp.org/content/ Ethiopia /en/home/library/poverty/2016.html

Financial stability Forum, (2000) .Report by the study group on insurance issues and developments, Online available: http:/www.iajsweb.org/famesets/observers.html under other document.

Gemechis, D. (2017). Profitability Determinants in the Insurance Sector in Ethiopia. An empirical study, Master's thesis, Addis Ababa University, Ethiopia

Gujrati, D.N. (2004) .Basic Econometric, (4th Ed.) .The mcgraw-Hill Companies .newyork

Gulsun, I., & Umit, G. (2010) .Early warning model with statistical analysis procedures Turkish insurance companies .African Journal of Business Management ,4(5), 623 630: Retrieved from http://www.academicjournals.org/AJBM: Academic Journals

Hadush, G.A. (2015). Determinants of Profitability of Insurance companies in Ethiopia: An empirical study. Master's thesis, Addis Ababa University, Ethiopia

Haiss, P., & Sümegi, K. (2008) .The relationship between insurance and economic growth in Europe: A theoretical and empirical analysis, Empirical, 35(4), Pp.405-431.

Hanna, M. D. (2015). Determinants of insurance companies' profitability in Ethiopia .Master's thesis, Addis Ababa University, Ethiopia

Hofstrand, D. (2009). Understanding profitability .File C3-24, Lowa state university; sited@http://www.extension.iastate.edu/agdm/wholefarm/pdf/c3-24.pdf

Hussanie, I., & Joo, B.A. (2019) .Determinants of profitability of life insurers in India- panel evidence. International Journal of Management Studies, VI, Issue1 (7), DOI URL: http://dx.doi.org/10.18843/ijms/v6i1 (7)/07

Ismail, M. (2013) .Determinants of financial performance: the case of general takaful and insurance companies in Malaysia. International review of business research papers, vol. 9. No. 6. , pp. 111 – 130

Jibran, Q.M., Sameen, M., Kashif, A., & Nouman K. (2016). Determinants that affect the profitability of non-life insurance companies: evidence from Pakistan. Research Journal of Recent Sciences, Vol. 5(4), 6 11

Kaya, E.O. (2015).The Effects of Firm-Specific Factors on the Profitability of Non-Life Insurance Companies in Turkey .Int. J. Financial Stud., 3, 510-529; doi: 10.3390/ijfs3040510

Khan, M.K., Nouman, M., & Khan, M. (2015) .Determinants of financial performance of financial sectors (an assessment through economic value added). School of Economics, Northeast Normal University, Changchun Jilin, China, https://mpra.ub.uni-muenchen.de/id/eprint/81281

Khrawish, H. A. (2011). Determinants of Commercial Banks Performance: Evidence from Jordan .International Research, Zarqa University, Journal of Finance and Economics, Vol. 5(5), pp. 19-45.

Kothari, C. (2008). Research Methodology: Methods and techniques .New Delhi, India: New age international publication.

Kramaric, T.P., Miletic, M., & Pavic, I. (2017) .Profitability determinants of insurance markets in selected central and eastern European countries .International Journal of Economic Sciences, Vol. VI, No. 2, DOI: 10.20472/ES.2017.6.2.006

Malik, H. (2011). Determinants of insurance companies' profitability: An analysis of insurance sector of Pakistan. Academic Research International, 1(3), 2223-9553

Mazviona, B.W., Dube, M., & Sakahuhwa,T. (2017) .An analysis of factors affecting the performance of insurance companies in Zimbabwe. Journal of Finance and Investment Analysis ISSN: 2241-0998 (print version), 2241-0996

Meaza, M.G. (2014). Determinants of insurance companies' profitability in Ethiopia .Master's thesis .Addis Ababa University, Ethiopia

Melat, B., Kenenisa, L., & Sintayehu, T. (2019) .Determinants of Financial Performance of Insurance Companies in Ethiopia .Horn of Africa Journal of Business and Economics (HAJBE), 2(1), PP: 23-34

Mistire, S. (2015). The Determinants of profitability on insurance sector: Evidence from insurance companies in Ethiopia. Master's thesis, Addis Ababa University, Ethiopia

National Bank of Ethiopia Birritu report, (2012) .Financial service can put power in to the hand of poor households allowing them to progress from hand to mouth survival to planning for the future".

National Bank of Ethiopia (2019) .Annual report of national bank of Ethiopia .Retrieved from http//www.nbe.gov.et

Naveed, A., Zulfqar, A., & Ahmad, U. (2011) .Determinants of Performance: A Case Of Life Insurance Sector of Pakistan .International Research Journal of Finance and Economics, Euro journals Publishing, Inc.

Ngui, A. N. (2010). A survey of the use of financial performance indicators by SACCOS in Kenya, An unpublished MBA Thesis, University of Nairobi

Njeru, T. (2018) .An Investigation of the factors influencing the financial performance of non-life insurance business in Kenya (Thesis) .Strathmore University, Retrieved from http://su plus.strathmore.edu/handle/11071/6084

Onsongo, B.J. (2015) .Determinants of financial performance for life insurance companies in Kenya. A research project submitted in partial fulfillment of the requirement for the award of the degree of Master of Science in finance, school of business, university of Nairobi

Pjanić, M., Milenković, N., Kalaš, B., & Mirović, V. (2018) .Profitability determinants of non-life insurance companies in Serbia. *Ekonomika Preduzeca, 66*(5-6), 333–345. Doi: 10.5937/ekopre1806333p

Ramadhan, Z. W. (2010). The relationship between interest rates and financial Performance of firms listed at the Nairobi securities Exchange. MBA Project, University of Nairobi

Skipper, J.R., & Harold, D. (2001) .Insurance in the General Agreement on Trade in Services .Washington, AEI Press USA, Pp.1-84

Smith, A., & Chamberlain, D. (2010) .Challenges and opportunities for micro insurance in Ethiopia analysis of the supply, demand and regularity: Access to Insurance Initiatives. Retrieved fromwww.access-toinsurance.org/useful.../document details.html?Dam

Suyehli, R. (2015). Determinants of insurance company's profitability in Ethiopia .Master's thesis .Addis Ababa University, Ethiopia

Swiss Re (2008), Profitability of Non-Life Insurance Industry. Egypt, Available At Www.Insureegypt.Com

Teddlie, C., & Tashakkori, A. (2003) .Major issues and controversies in the use of mixed methods in the social and behavioral sciences .In A. Tashakkori & C. Teddlie (Eds.), Handbook of mixed methods in social & behavioral research (pp. 3-50). Thousand Oaks, CA: Sage.

Taye, T.T. (2018) .Analysis of Factors Affecting Financial Performance Evidence from Selected Ethiopian Insurance Companies International Journal of Science and Research, Volume 7 Issue 12

Teklit, A. B., & Jasmindeep, K. (2017) .Determinants of insurance companies' profitability: Analysis of insurance sector in Ethiopia Punjabi University, Patiala, India .International Journal of Research in Finance and Marketing (IJRFM), Vol. 7, Issue4. Retrieved from http://euroasiapub.org/current.php?Title=IJRFM

Ward, D., & Zurbruegg (2000) .Does Insurance Promote Economic Growth .Evidence from OECD countries, The Journal of Risk and Insurance

Wen, W. (2010) .Ownership Structure and Banking Performance: New Evidence in China. Universitat Autònoma de Barcelona, Departament D"economia de L"empresa, 2010.

Zairi, M. (2012) .Measuring Performance for Business Results .Dordrecht: Springer Netherlands

APPENDIX

Questionnaire

Addis Ababa University

College of Business and Economics

Department of Accounting and Finance

Dear Sir/Madam,

My name is **Aron,** and I am a **Master's student at Addis Ababa University**. I am currently conducting research titled "**The Factors Affecting the profitability of Insurance Companies in Ethiopia.**" The purpose of this questionnaire is to gather data regarding the financial performance of insurance companies for the completion of my Master's degree at Addis Ababa University. I would greatly appreciate your insights on the financial performance of your company. Your specific responses to the questions will assist me in completing my thesis. All information provided will be used solely for academic purposes and will remain confidential.

Thank you in advance for your valuable time and participation in this research.

Instructions: Please check or fill in the blank spaces with your possible answers to the corresponding questions, and provide comments on the open-ended questions.

Questionnaire: Factors Affecting Insurance Companies' profitability

1. Name of the Insurance Company:- _____
2. Your Position/Role:- _____
3. Years of Experience in the Insurance Industry: _____
4. Sex: ☐ Male ☐ Female
5. Marital Status; ☐ Single ☐ Married ☐ Divorced ☐ Widow
6. Age

   18-25 ☐ 26-30 ☐ 30-45 ☐ above 45 ☐

7. Education qualification: -

   ☐ Diploma ☐ Bachelor ☐ Master ☐ above Master

8. What impact do you anticipate from the transition to a floating exchange rate on your company's financial performance?

   ☐ Positive ☐ Negative ☐Neutral

9. Has your company taken measures to mitigate risks associated with exchange rate fluctuations?

   Yes ☐ No ☐

10. If your answer for Q9 is "yes" how?

    ……

    ……

11. Has the Return on Assets (ROA) in your company increased over the past few years?

    ☐ Yes ☐ No

12. What is your perception of competition among insurance companies in Ethiopia?

    ☐ Very high ☐ High ☐ Moderate ☐ Low

    ☐ Very low

13. To what extent does your company diversify its operations across different business lines or regions?

    ☐ Very high ☐ High ☐ Moderate ☐ Low

    ☐ Very low

14. How often does your company provide insurance products for old collateral held by banks?

    ☐ Frequently ☐ Occasionally ☐ Rarely ☐ Never

15. Does the old collateral affect your company's profitability?

    ☐ Yes ☐ No

16. Has your company developed insurance products tailored to cover movable assets used as collateral by banks?

☐ Yes ☐ No

17. Does your company insure property damage by construction or collider development projects?

☐ Yes ☐ No

18. If your answer is "Yes" for Q 17, does it affect your company's profitability?

☐ Yes ☐ No

19. Does the compliance requirements from the National Bank of Ethiopia (NBE)?

☐ Yes ☐ No

20. How significantly do natural disasters affect your company's claim payouts?

☐ Very significantly ☐ Significantly ☐ Moderately

☐ Slightly ☐ Not at all

21. How well does your company adopt new technologies to improve operations?

☐ Very effectively ☐ Effectively ☐ Neutral

☐ Ineffectively ☐ Very ineffectively

22. Is your company prepared for increased competition if the insurance market opens to foreign insurers?

☐ Fully prepared ☐ Somewhat prepared ☐ Neutral

☐ Unprepared ☐ Very unprepared

23. What are the biggest challenges your company faces in adapting to changes in the insurance market?

---

24. How does your company plan to address the challenges associated with the move to a floating exchange rate?

What strategies is your company implementing to develop insurance products for movable and collateral assets?

---

25. What challenges does your company foresee with the opening of the insurance market to foreign firms?

What opportunities does your company see in a more open insurance market?

……

……

26. Are there any other factors or considerations you believe are critical to the success of insurance companies in Ethiopia?

……

……

```
. reg ROA  GROWTH  LEVERAGE   logassets gdp infla ex

      Source |       SS           df       MS      Number of obs   =        70
-------------+----------------------------------   F(6, 63)        =     18.97
       Model |  382.769372         6  63.7948953   Prob > F        =    0.0000
    Residual |  211.912157        63  3.36368504   R-squared       =    0.6437
-------------+----------------------------------   Adj R-squared   =    0.6097
       Total |  594.681529        69  8.61857289   Root MSE        =     1.834

------------------------------------------------------------------------------
         ROA | Coefficient  Std. err.      t    P>|t|     [95% conf. interval]
-------------+----------------------------------------------------------------
      GROWTH |   .0163579   .0066817     2.45   0.017     .0030056    .0297101
    LEVERAGE |   -2.74704   .2795903    -9.83   0.000    -3.305757   -2.188323
   logassets |   .0007017   .0008942     0.78   0.436    -.0010852    .0024887
         gdp |   1.448744   .7660306     1.89   0.063    -.0820456    2.979534
       infla |  -.0677362   .0335776    -2.02   0.048    -.1348358   -.0006366
          ex |   .0021548   .0010823     1.99   0.051    -8.04e-06    .0043176
       _cons |   8.716577   1.227356     7.10   0.000     6.263902    11.16925
------------------------------------------------------------------------------

. vif

    Variable |       VIF       1/VIF
-------------+----------------------
         gdp |      2.84    0.352174
       infla |      1.83    0.545947
          ex |      1.60    0.626035
   logassets |      1.17    0.856798
      GROWTH |      1.14    0.875104
    LEVERAGE |      1.13    0.884800
-------------+----------------------
    Mean VIF |      1.62

. correlate ROA  GROWTH  LEVERAGE   logassets gdp infla ex
(obs=70)

             |      ROA   GROWTH LEVERAGE logass~s      gdp    infla       ex
-------------+---------------------------------------------------------------
         ROA |   1.0000
      GROWTH |  -0.0125   1.0000
    LEVERAGE |  -0.6984   0.3184   1.0000
   logassets |   0.0261  -0.0288  -0.0444   1.0000
         gdp |   0.1483   0.1772   0.0995  -0.3699   1.0000
       infla |  -0.0243   0.0755  -0.0085  -0.2401   0.6224   1.0000
          ex |   0.2921   0.0827   0.0091  -0.1456   0.5458   0.1355   1.0000


.
```

Unstructured Interview questionnaire.

Q1. What are the major regulatory challenges your company is facing from NBE or other government agencies?

Q2. Which macroeconomic factors most negatively impact your insurance business?

Q3. What are the major competitive challenges you experience in the Ethiopian insurance market?

Q4. How do pricing strategies among competitors affect your operations?

Q5. What challenges do you face with insurance product innovation and customer acceptance?

Q6. What internal challenges affect your company's ability to compete and grow?:

Q7. How does your company respond to risk and uncertainty?

Q8. What customer-side challenges hinder your insurance business?

NBE and Financial Report Data Sample

Item	Global	Africa	Nyala	Berhan	Ethio Life & Gen.
Current Assets					
Cash and bank balances:					
Cash on hand	1,072,956.63	1,421,594.00	157,992,141.00	245,766.48	**2,890.00**
Cash at bank	28,618,553.91	85,017,031.00		22,270,810.34	**37,205,100.00**
Petty cash					
Revenue stamp					
Bearing interest Deposites :					
Banks			440,974,970.00		
Non bank finan. Inst.	197,477.00				
Others (specify)					
Trade debtors	2,957,131.15	50,058,008.00	22,757,330.00	627,851.07	395.55
Less: prov. for bad debtful a/c	(2,012,431.56)	(50,058,008.00)	(22,757,330.00)	(347,871.21)	
Other debtors (specify)	6,510,329.74	65,389,089.00	33,343,852.00	956,744.86	1,407,495.38
Less: prov. for bad debtful a/c			(2,185,900.00)		
Accrude interest recievable	4,491,878.77	14,641,808.00	23,791,867.00	6,470,163.39	5,424,783.04
Less: prov. for bad debtful a/c					
Due from reinsurers	9,494,829.79	840,119.00	2,240,292.00	6,786,276.54	32,207,172.00
Less: prov. for bad debtful a/c					
Due from ceding companies					
Less: prov. for bad debtful a/c					
Prepayments	1,171,148.02	5,466,767.00	6,729,778.00	1,757,231.30	5,350,884.24
Withhold tax recievables		4,533,708.00		1,046,249.71	484,354.27
Short term investments					
Fixed time deposites	81,500,000.00	176,047,861.00		118,048,204.04	95,799,168.14
Special savings accounts					
Current account life					
Current account non- life					
Others (specify)	367,855.21	596,033.00	183,452,801.00	2,241,000.00	

					616,761.09
Total Current Asset	#########	**353,954,010.00**	**846,339,801.00**	**160,102,426.52**	**178,499,003.71**
Investment					
Equity Investment	19,068,000.00	101,674,000.00	119,186,000.00	27,000,000.00	9,681,625.01
Treasury bills			1,181,600.00		
Other (specify)	630,000.00	21,100,000.00		11,500,000.00	
Sub total	**19,698,000.00**	**122,774,000.00**	**120,367,600.00**	**38,500,000.00**	**9,681,625.01**
Statutary deposit	12,058,400.00	23,739,600.00	29,829,300.00	**1,349,600.00**	**10,662,099.00**
Deferred Charges			641,519.00	**502,863.09**	
Fixed Assets					
Land &building	22,481,580.25	247,612,763.00	29,623,619.00	7,209,669.75	
Less: Accum. Depr.	(9,132,891.75)	-43903341	(7,511,851.00)		
Furn.,fixt. and office equip.	2,796,189.42	7,986,246.00	11,954,100.00	3,507,760.86	**3,350,318.00**
Less: Accum. Depr.	(1,936,182.68)	(6,258,500.00)	(6,370,869.00)	(2,465,522.20)	(2,072,167.00)
Comp.r equip. and software	1,985,380.52	10,775,421.00	10,882,268.00	1,309,579.78	1,884,705.00
Less: Accum. Depr.	(1,242,643.13)	(9,376,380.00)	(8,454,166.00)	(874,646.71)	(1,317,588.00)
Motor vehicles	10,509,641.73	29,051,697.00	33,852,135.00	9,307,215.48	15,245,984.00
Less: Accum. Depr.	(6,021,451.55)	(17,191,142.00)	(20,502,185.00)	(6,008,349.98)	(6,907,200.00)
Other (specify)	5,825,449.00		53,869,105.00		
Less: Accum. Depr.	(2,202,339.80)		(17,405,877.00)		
Intangible assets(land lease+others)		2,143,403.00	2,412,300.00	3,021,660.17	1,914,947.00
Less: Ammortization			(767,245.00)	(1,076,692.58)	(1,867,072.00)
Total fixed asset	**23,062,732.01**	**220,840,167.00**	**81,581,334.00**	**13,930,674.57**	**10,231,927.00**
Total Assets	#########	**721,307,777.00**	##########	**214,385,564.18**	**209,074,654.72**
Current liability					
Insurance Funds					

Provision for un earned premiums	33,599,881.20	172,836,034.00	154,000,153.00	42,141,307.90	**41,035,102.00**
Other technical provisions	6,210,668.08	18,901,205.00		7,551,145.16	**6,570,611.00**
Inward business reserve					
Special reserve-guarantee bonds					
Special reserve-disputed claims					
Insur, provid.,and pens. Fund					
Other (specify)					
Outstanding claims	29,021,069.24	143,884,908.00	313,822,137.00	44,150,351.00	26,461,323.43
Bank overdraft					
Short term loan					
Due to reinsurers	24,524,901.14	61,290,150.00	69,042,851.00	17,693,659.70	52,864,093.05
Due to ceding companies				2,562,763.38	
Provision for					
Tax	1,917,916.08	1,620,959.00	3,765,868.00		330,107.39
Devidend payable	2,680,504.24	5,372,414.00	11,618,952.00		
Director's remuneration				270,000.00	
Creditors and accruals	9,775,275.43	88,236,751.00	96,136,908.00	6,542,158.36	6,397,847.12
Employees' liabilities					
Current account-life					
Current account(non-life)			15,795,190.00		
Other (specify)		508,433.00		1,375,557.73	2,962,907.00
Total Current Liability	#########	**492,650,854.00**	**664,182,059.00**	**122,286,943.23**	**136,621,990.99**
Long term liability					
Land lease payables	5,989,971.61			781,200.00	
Total liability	#########	**492,650,854.00**	**664,182,059.00**	**123,068,143.23**	**136,621,990.99**
Net Asset					
Financed by					
Shareholder's Fund					
Paid up Capital	#########	158,264,000.00		86,548,212.63	

					71,080,659.30
Share premium	69,900.00	14,235,140.00	236,798,000.00	1,237,799.78	
Legal reserve	10,651,485.15	30,849,296.00	57,856,997.00	1,792,331.97	1,266,022.59
Genaral reserve	290,485.00				
Retained earnings	12,727,603.37	31,119,167.00	98,012,353.00	1,739,076.57	11,030,178.17
Inter business current account		(5,810,679.00)			(10,924,198.50)
Other (specify)					
Total Shareholder's Fund	#########	**228,656,924.00**	**392,667,350.00**	**91,317,420.95**	**72,452,661.56**
Total Liability & Shareholder's Fund	#########	**721,307,778.00**	##########	**214,385,564.18**	**209,074,652.55**