FINANCIAL DISTRESS AND ITS DETERMINANTS IN BANK AND INSURANCE INDUSTRY

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Declaration

I declare that the thesis for the M.Sc. degree in Accounting and Finance at the University of Addis Ababa, herby submitted by me, is my original work and have not previously been submitted for a degree at this or any other University, and that all references materials contained therein have been duly acknowledged.

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Certification

This is to certify that the thesis prepared by Goitom Tariku entitled: Financial Distress & Its Determinants In Bank and Insurance Industry submitted in partial fulfillments of the requirements for the Degree of Master of Science in Accounting and Finance complies with the rules and regulations of the university and meets the expected standards with respect of originality and quality.

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Abstract

The major focus of this study is to investigate empirically the determinants of financial distress in the case of Bank and Insurance Industry as they are corporately governed institution in Ethiopia. Three main Commercial Banks and Ten Insurance Companies were included in the sample that had at least five years annual report. Document review was used on audited data from 2013-2017 annual reports. In line with the focus of the study, its adopted quantitative methods of research approaches to test the study hypothesis. The study applied Altman's- Z-Score model as proxy for financial distress with its fixed effect estimate to test a series of hypotheses that emerge through the review of existing literature. The collected data analyzed using descriptive statistics, correlation analysis, and regression analysis. To confidently forward conclusion, normality, multicollinearity, heteroscedastcity and autocorrelation tests were conducted on the data. The data was processed using stata 13 statistical packages. The results show that Liqudity (LIq) and Profitability (Prof) have positive and significant influences to Z-Score as a proxy of financial distress. On the other hand, leverage (Lev), Efficiency and inflation (fIR)) has a negative and significant relation with Z-Score. Other variables such as Firm Size (fsize) and Economic Growth have no significant impact on the status of firm's financial distress in Bank and Insurance Companies found In Ethiopia. In general, the research concludes common distress determinants including macroeconomic factors determine the level of financial distress of Ethiopian Insurance and banks. Finally, both Industries must take remedies and apply early warning systems to predict financial distress before bankruptcy was given as recommendation.

Keywords: Financial Distress, Bankruptcy, Altman's z-score, Corporate Governance, Bank and Insurance Companies.

ACRONYMS

DW:	Durbin-Watson Statistic
EAT:	Earning After Tax
EBIT:	Earnings before Interest and Tax
EFF:	Efficiency of Firm
FD:	Financial Distress
FE:	Fixed Effect
FIR:	Firm Inflation Rate
FSIZE:	Firm Size
GDP:	Gross Domestic Product
LEV:	Firm Leverage
LIq :	Firm Liquidity
LOG:	Natural Logarithm
MOFED:	Ministry of Finance and Economic Development
NBE:	National bank of Ethiopia
NPL:	Non Performing Loan
Prof:	Profitability of Firm
TA:	Total Assets of firm
TL:	Total liability of firm
TL:	Total liability of firm

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CHAPTER ONE

1. Introduction

1.1. Background of the Study

An important part of financial stability analysis entails assessing the degree of corporate sector credit risk facing banks. For financial stability analysis on a euro area-wide basis, it is important to ascertain whether common or country-specific factors drive corporate failures. If the factors that give rise to financial distress are the same across countries, then aggregation of individual corporate sectors into a single group is justified, whereas if country-specific factors are more important, this would call for analyzing conditions in each individual corporate sector(Koller, 2011).

The best performance of any industry in general and any firm in particular plays the role of increasing the market value of that specific firm coupled with the role of leading towards the growth of the whole industry which ultimately leads to the overall success of the economy. Measuring the performance of financial institutions has gained the relevance in the corporate finance literature because as intermediaries, these companies in the sector are not only providing the mechanism of saving money and transferring risk, but also helps to channel funds in an appropriate way from surplus economic units to deficit economic units so as to support the investment activities in the economy (Hifaz, 2011).

However, disruptions like financial distress impede the ability of the financial sector to intermediate financial flows and might also be restrain economic activity (Zamorski and Lee, 2015).

According to Koller (2011), financial distress is observed in a country when a fairly reasonable proportion of banks are unable to meet their obligations to customers, owners and economy because of weakness in financial, operational or managerial capabilities & leads them to illiquid or insolvent. In this regard the banking crisis observed in sub-Saharan Africa region in the year 1980s and 1990s; the financial crisis in Asia in the year 1997 to 1998; and, the recent financial crisis in US and Europe in the year 2007/08 were an example of this kind of financial distress and failure (Betz, et al., 2013).

On the other hand, developing countries face a micro level insurance and bank distress or failure when an insurance and bank liquidated, merged with a healthier bank under government pressure or rescued with state financial support (Hifza, 2011). Despite its form, micro or macro, financial distress imposes significant costs to the economy on indicators of corporate financial indicator.

The motivation for empirical research in corporate bankruptcy prediction is clear – the early detection of financial distress and the use of corrective measures (such as corporate governance) are preferable to protection under bankruptcy law (Aziz & Dar, 2006). If it is possible to recognize failing companies in advance then appropriate action can be taken to reverse the process before it is too late (Taffler, 1982).

Natalia (2007) points out that averting financial distress effectively and efficiently is dependent on early detection since it allows more time for response. The distress state of a firm should guide management and other stakeholders on the appropriate salvage strategies. Altman and Hotchkiss (2006); Brigham and Daves (2010) argue that if a firm is far too gone, that is beyond reorganization, it must be liquidated. Some sick companies should be allowed to die and die quickly.

Brigham and Daves (2010) further state that maintaining companies on life support does not serve the interests bankruptcy laws were meant to protect. An efficient resolution of financial distress should have two goals. The first goal is to continue viable firms and liquid firms that should be liquidated. The second goal is to help a viable firm recover as quickly as possible from its financial distress (Brigham & Daves, 2010). This research is therefore motivated in the relevance of Altman's Z-score model in predicting financial distress among listed firms at the insurance and banking industry.

1.2. Statement of the Problem

In East Africa, financial distress analysis has been done on several industries such as; pharmaceutical companies (Islam & Mili, 2012), cement companies (Hossain & Moudud-Ul-Huq, 2014) and some other industries but yet not done on NBFIs.

Nyanumba & Memba (2013) analyzed Z-score on 15 commercial banks of Kenya find out that most of the banks belong to distress zone. They find out that only 7% of the sample banks were

in healthy financial position in 2009 which started declining gradually and after 2011 there was none. They also revealed a transition of the banks from the distress zone to grey zone.

Mostofa, Rezina, & Hasan (2016) investigated the insolvency level and probability to be bankrupted of the banking industry in Kenya. They performed their research work on 25 conventional and non-conventional commercial banks and find out a promising result compared to other research works. 24 % of the sample banks were in safe zone and20 % banks were in risky zone was their final finding. Chowdhury and Barua (2009) used Z score model to predict the bankruptcy risk of DSE (Dhaka Stock Exchange) listed Z category companies and their results indicated that 5 out of 53 companies are out of dangers and forty-one companies were in distress zone due to weaker managerial capacity and poor efficiency in operational activities. They also discussed regarding the applicability of z-score model in Tanzania.

Odipo & Sitati (2017) researched on in insurance and banking Corporation of Kenya from 2012 to 2016 and find out that long term solvency and liquidity were not satisfactory at that time to determine distress level. They also suggested some techniques to improve the situation like; using modern techniques for asset management, modern marketing policies etc.

As far as the Ethiopian banking sector is concerned, there is research attempt made by Ephrem (2015). He tried to identify the determinants of financial distress based on six commercial banks, using Altman Z-score, which deviates from what it has to be. Based on the OLS regression the study reported that non-performing loan have significantly negative effect on the financial distress of commercial banks. Finding of the study indicate that capital to loan ratio, net interest income to total revenue ratio have statistically significant positive influence on the financial health of banks whereas the nonperforming loan ratio has statically significant negative influence on the financial health of the banks. But, it is not seen solvency and liquidity as determinants of financial Distress incorporate governance finical institutions (Such as Banks & Insurance).

Similar study conducted by Tadesse (2017) on the Determinants of Financial Distress which is Empirical Evidence from Banks in Ethiopia which is both bank specific and macroeconomic factors determine the level of financial distress of Ethiopian commercial banks.

The FE regression model identified capital adequacy, management efficiency, earning ability and bank size as having negative effect on banking financial distress and except size all of them

appeared significant; whereas asset quality and liquidity appeared as having positive effect, but liquidity was only significant.

In Both Studies the Bank and Insurance Industries together has not been observed as corporate Governance level and their common Determinants of Distress, Such us Leverage; profitability; Liquidity; firm size, efficiency is not evaluated.

Upcoming to current study, Financial Distress and Its Determinants in Bank and Insurance Industry which is determinably for common detrimental of finical distress for two industries; Leverage ratio; profitability; Liquidity; firm size, efficiency, Inflation rate, Economic growth, based on the model by (Altman & Hotchkiss, 2006) which is the book portrayed to show up corporate financial distress and bankruptcy Predicting to avoid bankruptcy, Analyze and invest.

1.3. Objective of the Study

1.3.1. General Objective

The principal objective of this research is to identify the Financial Distress &Its Determinants in Bank and Insurance Industry in Ethiopia.

1.3.2. Specific Objectives

1) To determine the extent of financial distress in Bank and Insurance Industries found Ethiopia.
2) To identify the specific determinants of financial distress (Leverage ratio; profitability; Liquidity; firm size, efficiency) of the Bank and Insurance Industries found in Ethiopia.
3) To examine the effect of macroeconomic financial distress determinants (Inflation rate, Economic growth) in Bank and Insurance Industry found Ethiopia.

1.4. Research Hypothesis

In many quantitative studies, writers use research questions. However, a more formal statement of research employs hypotheses. These hypotheses are predictions about the outcome of the results, and they may be written as alternative hypotheses specifying the exact results to be expected (more or less, higher or lower of something). They also may be stated in the null form,

indicating no expected difference or no relationship between groups on a dependent variable (Creswell 2009).

Therefore, in order to achieve the objective of the study, a number of hypotheses were tested regarding the determinants of financial distress in Ethiopia insurance companies and banks based on different empirical research and theoretical reviewed made. The reason is that there is rare theory developed in relation to insurance companies and banks financial distress.

Hypothesis: based on review of relevant and related literatures the study hypothesizes as

H1. Firm Size has positive and significant effect on financial distress of insurance companies and banks in Ethiopia.

H2. Leverage has a negative and significant effect on financial distress of Ethiopian bank and insurance companies.

H3. Profitability has positive and significant impact on the financial distress of insurance and bank industries

H4. Liquidity ratio has positive and significant impact on financial distress insurance companies and bank in Ethiopia.

H5. Efficiency has negative and significant impact on financial distress of insurance and bank industries.

H6. Economic growth has negative/positive impact on financial distress of insurance and bank industries in Ethiopia.

H7. Inflation has negative and significant impact on profitability of insurance and bank industries in Ethiopia.

1.5. Significance of the Study

The study was significant to the following group of stakeholders as discussed below;

The study is expected to contribute to the selected management of banks and insurances under the study that is expressing the case of insurance and Bank. Its findings are of great use to the management of the banks in the area of financial distress and how to prevent such occurrence as will be indicated in the recommendations of the study.

The study will be of great use to the government and national bank which regulates the banking sector. The government will benefit by taking into consideration the determinant that will be

highlighted that cause financial distress in corporate governance. In this way, they will adjust appropriately in order to prevent such scenarios

This study could serve as reference material for both academicians and researchers who can expound on the research gap which was created by the study. In addition, the scholars will benefit from the theoretical and empirical literature generated by the study on determinants of financial distress in corporate governance and financial institutions.

1.6. Scope of the Study

The geographical scope of the study covered two private and one government owned commercial Bank, specifically the Awash Bank S.C, Dashen bank S.C and Commercial bank of Ethiopia and 10 insurance companies namely Ethiopian Insurance Corporation General, National Insurance Company of Ethiopia S.C, Awash Insurance Company S.C, Africa Insurance Company S.C, Nyala Insurance Company S.C, Nile Insurance Company S.C , Global Insurance Company S.C, The United Insurance S.C , NIB Insurance Company and Lion Insurance Company S.C are included.

The study will also focus on the four determinants of corporate Finical distress that is Leverage ratio; profitability; Liquidity; firm size, efficiency, Inflation rate, Economic growth.

1.7. Organizations of the Study

This chapter covers the statement of the problem along with the purpose of the study in which this report had introduced as well as the background of the study. The research questions have indicated the direction as well as the focus of this study, which will later outline the importance of this report and how it could benefit those that use this report. Chapter two will discuss literature review in line with the research questions. Chapter three highlight research methodology that will be used in the study. Chapter four will look at the findings while chapter five highlights summary, discussions and recommendations.

CHAPTER TWO

Literature Review

2.1 Introduction

This chapter reviews theoretical and empirical literature relevant to the objectives of this study. Based on the literature, a conceptual framework was developed, which forms the basis for comparison of data analysis and models. The chapter is organized as follows: theoretical review and conceptual framework of the study, the empirical review, and embedded critique of existing literature, summary and gaps to be filled by the study.

2.2 Theoretical Review of Financial Distress

A theory is asset of interrelated concepts, definitions, and propositions that present a systematic view of events or situations by specifying relations among variables, in order to explain and predict the events or situations (Van Ryan & Heaney, 1992). Theoretical literature is concerned primarily with theories or hypotheses rather than practical application. Theoretical literature begins with a formal model that seeks to explain participation patterns in terms of underlying theory (Heilbrun & Gray, 1993).

Baldwin and Scott (1983) stated that when a firm's business deteriorates to the point where it cannot meet its financial obligations, the firm is said to have entered the state of financial distress. They suggest that the first signals of distress are usually violations of debt covenants coupled with the omission or reduction of dividends. Beaver (1966) observed that financial distress manifests through any of the following events: bankruptcy, bond default, bank account overdrawn, or nonpayment of a preferred stock dividend. Lau (1987), on the other hand, classified a firm into a five-state process of financial distress, that is,

- state 0: financial stability;
- state 1: omitting or reducing dividend payments more than 40% below previous year;
- state 2: technical default and
- default on loan payments;
- state 3: protection under the Bankruptcy Act;
- state 4: bankruptcy and insolvency.

Theories in financial distress, according to Mueller (1986) assert that the states of a firm can be subdivided into four sub-intervals: deterioration of performance, failure, insolvency, and default. Whereas deterioration and failure affect the profitability of the company, insolvency and default are rooted in its liquidity. Theoretically, the outcome of each interval can be positive, implying that the company breaks the downward trend, or negative indicating the continuing deterioration of the firm value and a movement downwards from one sub-interval of the spiral to another. In many real cases, when entering financial distress, the company traverses all the stages of decline, Mueller (1986) further argued. Theories of financial distress may be useful in explaining the causes of financial challenges facing insurance companies and bank industries in Ethiopia. They are used to determine indicators of financial distress in insurance companies and how the challenges could be resolved.

There are several theories which can be used to outline the characteristics of a firm in financial distress; to select the predictors to the models; and to justify the functional form between these predictors and these are: Liquid Asset Theory, Liquidity and Profitability Theory, Balance Sheet Decomposition Measure, Gambler ‘s Ruin Theory, Cash Management Theory and Credit Risk Theory. Most of the mentioned theories have been applied by Altman & Hotchkiss (2006).

2.2.1 Liquid Asset Theory

The theory behind the model can best be explained within the framework of a cash flow. Beaver (1966) wrote: The firm is viewed as a reservoir of liquid assets, which is supplied by inflows and drained by outflows. The reservoir serves as a cushion or buffer against variations in the flows. The solvency of the firm can be defined in terms of the probability that the reservoir will be exhausted at which point the firm will be unable to pay its obligations as they mature and may result in failure). It was argued that firms with positive cash flow are able to raise their capital and borrow from the capital market, while firms with negative or insufficient cash inflow are unable to borrow and therefore face the risk of default.

According to this argument, a firm is assumed to go bankrupt (default) whenever the current year profit or cash flow is negative or less than the debt obligations or whenever the sum of its current year profit and the expected value of equity (without current income) is negative (less than zero)(Scott, 1981).

Beaver‘s simple model was based on the technical insolvency concept originally presented by (Walter, 1957). Technical insolvency exists when a firm cannot meet its current financial obligations, signifying a lack of liquidity (Altman & Hotchkiss, 2006). The theory, based on this concept, showing net cash flows relative to current liabilities should be the primary criterion used to describe a company in a financial distress state.

This study is anchored on the Liquid Asset theory, given its emphasis on liquidity. The theory does not explain the other four variables under the current study which are: profitability, leverage, firm size and efficiency.

2.2.2 Liquidity and Profitability Theory

According to Hashi (1997), when the firm‘s indicators (liquidity and profitability) are good it is perceived as healthy, but it is perceived as unhealthy and at risk of bankruptcy if the indicators are poor. Two major categories of these indicators: liquidity and profitability. A positive and high measurement of these two implies a lower risk of bankruptcy. The obvious weakness of this theory is its generality. On the flip side, however, this weakness ensures that the theory does not conflict with, and is inclusive of other more prescriptive theories. However, entrance or exit of a company does not always mean physical inclusion in or exclusion from an industry.

Entrance or exit can be observed as increase or decrease in operations, resource raise or shortage, or change in field of activity.

In this context, competition process could be perceived as remaining or inclusion of efficient resources in the industry and exclusion of inefficient ones from the industry. For example, decreasing demand in some insurance result in the phase out of the division handling such a product. Theoretically, in highly competitive markets; insolvency, default, bankruptcy so called financial distress is rarely observable (Hashi, 1997).

This model shows that the firm can fail although its profitability is good. If the growth rate significantly exceeds the internal rate of return, the revenue flow can be insufficient to finance expenditure and the firm is unable to pay its obligations if it is heavily indebted. Laitinen (1991) applied a steady state approach and expanded the model to include indebtedness (loan-taking intensiveness) and liquidity (harmony of finance).

The current study is anchored on liquidity and profitability theory, given its emphasis on Liquidity, leverage, efficiency and profitability which are part of the variables in the study. The theory does not take in to consideration firm size which is part of what the current study investigated in bank and insurance companies in Ethiopia.

The theory notes clearly that profitability alone does not guarantee success, just like Ethiopia, where in the year it collapsed, it had made profit. The profitability should be greater than the rate of growth (expansion) rate of the, company.

2.2.3 Balance Sheet Decomposition Measure (BSDM)

One way of identifying firms 'financial distress could be a careful look at the changes occurring in their balance sheets (Aziz & Dar, 2006). Following this procedure, the argument would tag along this guideline: like any enterprise, firms would tend to maintain a state of equilibrium that ensures sustaining existing firms 'structure‖ (Natalia, 2007). If a firm's financial statements reflect significant changes in their balance sheet composition of assets and liabilities over a reasonable period of time, it is more likely that the firms are incapable of maintaining the equilibrium state (Monti & Moriano, 2010). Since these changes are likely to become uncontrollable in future, one can foresee financial distress in these firms. This economic rationale of firms 'likely failure is the argument of BSDM or entropy theory (Slotemaker, 2008).

2.2.4 Gambler's Ruin Theory

The basic idea of this theory relates with the game of a gambler, who plays with an arbitrary sum of money. Gambler would play with some probabilities of gain and loss. Game would continue until the gambler loses all his money (Espen, 1999). Theory would also talk about gambler's ultimate ruin and expected duration of the game. In context of the firm's failure, firm would take the place of a gambler. Firm would continue to operate until its net worth goes to zero, point where it would go bankrupt (Espen, 1999).

The theory assumes that a firm has got some given amount of capital in cash, which would keep entering or exiting the firm on random basis depending on firm's operations. In any given period, the firm would experience either positive or negative cash flow. Over a number of periods, there is one possible composite probability that cash flow will be always negative. Such a situation

would lead the firm to declare bankruptcy, as it has gone out of cash (Aziz & Dar, 2006). Hence, under this approach, the firm remains solvent as long as its net worth is greater than zero. This net worth is calculated from the liquidation value of stockholders 'equity (Espen, 1999).

2.2.5 Liquidity Risk Theories

According to Westgaard and Wijst (2001), liquidity Risk is the risk that a borrower will default, that is, fail to repay an amount owed to the bank. Liquidity Risk includes all of the counterparties and reasons for which they may default on their obligations to repay. For example, a macroeconomic theory is one that relates to credit portfolio risk measurement that was introduced by Wilson (1997 &1998).

The theory states that liquidity Risk cycles follow business cycles closely, that is, a worsening economy would be followed by downgrades and defaults increase. Here defaults probability of a firm is a function of macroeconomic variables like unemployment rate, interest rates, growth rate, government expenses, foreign exchange rates, and aggregate savings etc.

Another view point on credit Risk refers credit as the provision of goods and services to a person or entity on agreed terms and conditions where the payments are to be made later with or without interest. During the contract period, not all debtors will repay their dues as and when they fall due. When the debtor does not pay their dues on the due date, the lender is exposed to credit risks which may in turn lead to default. Liquidity Risk is therefore the investor's risk of loss, financial or otherwise, arising from a borrower who does not pay his or her dues as agreed in the contractual terms (Nyunja, 2011).

2.3. Empirical Review of Financial Distress

According to Baldwin and Scott (1983), when a firm's business deteriorates to the point where it cannot meet its financial obligations, the firm is said to have entered the state of financial distress. The first signals of financial distress are usually violations of debt covenants coupled with the omission or reduction of dividends. Financial distress is a term in Corporate Finance used to indicate a condition when promises to creditors of a company are broken or honored with difficulty. Sometimes financial distress can lead to bankruptcy.

Financial distress may be due to perceptions about firms 'capacity to manage economic resources (such as income and savings), pay bills, repay debts, and provide for the needs over a firm's life (Barbara et al., 2006). Beaver (1966) emphasized that financial distress could be due to any of the following events: bankruptcy, bond default, bank account overdrawn, or non-payment of a preferred stock dividend. Lau (1987), on the other hand, classified a firm into a five-state financial distress: state 0: financial stability; state 1: omitting or reducing dividend payments more than 40% below previous year; state 2: technical default and default on loan payments; state 3: protection under the Bankruptcy Act; and state 4: bankruptcy and insolvency.

Gruszczynski (2004), study focused on financial distress of companies in Poland. The following were found to play a critical role in determining financial distress in companies in Poland. Financial distress is determined mainly by the degree of liquidity, profitability and by the size of debt. According to the findings from this study, the best predictors of financial distress of Polish companies in the second half of nineties were: the loss of liquidity (liquidity ratio), diminishing profitability (return on assets), increasing debt (debt ratio), and decreasing turnover of liabilities. The study focused on Liquidity, profitability and size of debt (leverage) as determinants of financial distress in Poland insurance and bank industries.

Almeida and Philippon (2000) research was done in United States for public companies which had issued corporate bonds and got difficulties to pay coupon and the principal. Other variables which have been evaluated: Capital structure and corporate valuation practice in related with financial distress in direct cost and indirect cost.

The empirical result indicated that distress costs are too small to overcome the tax benefits of increased leverage. The marginal tax benefit is constant up to a certain amount of leverage and then it starts declining because firms do not pay taxes in all states of nature and because higher leverage decrease additional marginal benefits. The study focused on companies in USA which issued corporate bonds and had difficulties paying principal and interest. The findings showed that distress cost is less than tax benefits of increased leverage.

A study by Dollery (2009) indicated that financial distress in insurance companies is hard to evaluate because of several reasons, namely: firstly different insurance regulators Employ mixed approaches to measuring and recording financial data 'with significant inconsistencies' between different insurance companies; secondly, asset valuation was both infrequent and typically made

different assumptions about the longevity of insurance and bank industries assets; and finally, incomplete ‘financial and asset management records, especially in smaller firms, rendered accurate comparisons impossible. PWC Report (2006) adopted two separate methods in their evaluation of the financial viability of insurance and bank industries. In the first place, the PWC report applied, financial ratio analysis to a sample of 20 insurance and bank industries weighted by the number and type of Insurance Cover. Secondly, the PWC Report used descriptive statistics, surveys, interviews and data from questionnaires to analyses the financial viability of insurance and bank industries.

The Financial Sustainability Review Board (FSRB) of 2005 advanced a set of key financial indicators for assessing insurance and bank industries financial sustainability ‘. These indicators were: (a) net financial liabilities as the key indicator of the insurance companies` indebtedness to other sectors of the economy ‘;(b) operating surplus or deficit as the key indicator of the intergenerational equity of the funding of the insurance and bank industries operations ‘; (c) net outlays on the renewal or replacement of existing assets as the key indicator of the intergenerational equity of the funding of the insurance and bank industries infrastructure renewal or replacement activities‘; and (d) net borrowing or lending as the key indicator of the impact of the insurance companies` annual transactions both operating and capital – upon the company`s indebtedness to other sectors of the economy‘.

According to insurance companies` index (ICI) of 2006 key performance benchmarks such as Net Debt (net borrowing /lending), Altman‘s Z ‘‘Score and Solvency Margin may be used to assess financial distress in insurance companies. The current study used the Z ‘‘Score to measure financial distress in insurance companies in Ethiopia, the Altman‘s model specifies that any firm that has a score over 2.60 is considered to be financially health. Firms that scored between 1.10 and 2.60 was deemed to fall within a gray area, thus they had some risk of financial troubles.

Whereas, firms that scored below 1.10 was considered financially distressed. Solvency margin and net debt were also used to measure financial distress of insurance companies in Ethiopia.

2.3.1. Firm Profitability

Profitability ratios give an indication of how effective a company is generating profits given sales and or its capital assets. Profitability ratios measure a company's ability to generate revenue in excess of expenses. Some measures of profitability include; gross margin, net margin, operating margin, return on capital employed, return on equity, and return on assets. The research conducted on financially distressed firm suggests taking actions of adjusting the business to increase profitability (Chang-e, 2006). Some other researchers such as Hotchkiss (1995) explored the achievement of bankrupt reorganization firms in US of America and focused on profitability. Financial distress plays a significant role in a firm 's operation and profitability through the influence of cost implications, such as administrative and legal costs associated with the bankruptcy process (i.e., direct financial distress costs) or increased costs of debt that is, indirect financial distress costs for example (Betker, 1997 & Beaver, 1966).

Karels & Plakash (1987) divided all possible causes of financial distress arising out of decline in profitability into two groups: internal risk factors and external shocks. Internal risk factors can be attributed to poor management. Potential forms of the appearance of bad management are the absence of a sense of a need for change, inadequate communication, overexpansion, unintentionally improper handling of projects, or fraud. Exogenous shocks are independent of managerial skills. They can be classified into inefficiencies in regulatory development, turbulences in the labor market, or natural disasters (Karels et al., 1987). According to Gu & Kim, (2002), on profitability and performance of companies, concluded that net profit margin, return on equity and return on assets are adopted as measures of overall profitability.

The current study adopted the following variables of firm profitability in insurance and bank industries in Ethiopia that may lead to financial distress; net profit margin, loss ratio, return on assets, premium growth and return on equity.

2.3.2. Firm Liquidity

Firm's liquidity is the ability of an asset to be converted to cash quickly at low cost. Liquid assets can be converted into cash quickly and cheaply Brealey et al. (2000). The liquidity of a firm is measured by its ability to satisfy its short-term obligations as they fall due.

Liquidity refers to the solvency of the firm‘s overall financial position the ease with which it can pay its bills. Because a common precursor to financial distress and bankruptcy is low or declining liquidity, these ratios are viewed as good leading indicators of cash flow problems (Brealey et al., 2000).

Therefore, Liquidity ratios measure the ability of a company to pay it short term debts obligations. Examples of this financial ratio include current ratio, quick (or acid test) ratio, and working capital as percentage of sales. The difference between these ratios is the type of current asset used; a more conservative liquidity ratio (for example, the quick ratio) will exclude those current assets which cannot be easily converted into cash.

Stakeholders will normally prefer larger ratios of liquid assets to short term debt since it is an indication that the firm can pay off its short term debts and still fund its operations. We presume that the average liquidity ratios of healthy firms are higher than those of financially distressed firms (Gitman, 1991).

A study by Turetsky & McEven (2001) sought to illustrate dependence of the risk of default on the change in liquidity through empirical investigation of firm longevity. The scholars examined the factors influencing the shift from the upper to the lower level of the downward spiral. Results show that the volatile decrease in cash flows from positive to negative has an enormous impact on subsequent default; a one-unit increase in liquidity measured by the current ratio reduces the risk of default by approximately 47%.

The study focused on effect of liquidity on financial distress and firm‘s longevity. The finding from this study depicts the important role liquidity plays in financial distress. It shows that a one-unit increase in liquidity decrease risk of default by 47%. The findings from this study was only limited to Liquidity effect on financial distress. The current study looked at five variables as possible determinants of financial distress. Pranowo et al. (2010) analyzed financial distress by mapping 220 financial companies which are listed in Indonesia Stock Exchange into the steps of integral financial distress.

The result indicated that deterioration had the most effect on financial distress for Indonesia public companies and mapping into five different industrial sectors. The findings show that the

number of deterioration companies and cash flow problem companies increased over the period of study.

In general, every time number of good companies going down, companies in the status of deterioration increased. The results also suggest that management of public companies must control its financial performance very carefully in order to get information in advance whether the companies are still in good financial condition or are already at the stage of financial distress. The findings from the above study in Indonesia was only limited to Liquidity effect on financial distress. The current study looked at five variables as possible determinants of financial distress.

The current study adopted the following variables of firm liquidity in insurance and bank industries in Ethiopia that may lead to financial distress; current ratio and working capital as percentage of sales.

2.3.3. Firm Efficiency

According to Pranowo et al. (2010) Firm‘s efficiency measures how productively the firm is using its assets. Operating ratio is a measure of how well a company sells its stock and the efficiency with which it converts sales into cash. Some examples of operating ratios (activity ratios) include; assets turnover (sales to total assets), stocks turn over, debtors ‘day (day‘s receivable outstanding) and working capital to sales ratio.

Debtor day shows the average number of days it takes customers to pay for credit sales. Low debtors ‘day benefits cash flow; an indication for probable saving for positive cash flows. Higher debtors ‘day suggests inefficiency or potential bad debts which is usually the case for financially distressed firms on the other hand, assets turnover ratio is a measure of company’s ability to generate sales from its total assets.

Higher sales to total assets ratio is an indication of high profitability since smaller investment will be required to generate sales revenue. Since we expect bankrupt firms to have lower and even negative profitability, we therefore presume that their assets turnover ratios are lower than those of active firms.

Pranowo et al. (2010) suggested that firm efficiency can be measured in terms of its fixed assets turnover ratio, current assets turnover and net worth turnover ratio. These components indicate

the firm‘s viability as well as speed of turning over its assets within the year, which determines the firm‘s financial distress.

The firm ‘s financial distress is the early stage of business failure and the symptoms of financial distress are that the firm: is desperately short of cash, suppliers are pushing for faster payments; borrowings are close to the maximum limits and the firm ‘s monthly accounts show that the business is losing money consistently (Brealey et al., 2000).

Another aspect of financial distress is that it triggers an effective change in the managerial control over the company, pushing the firm to alter its operational strategy in order to raise declined efficiency. Some researchers insist upon the unique function of financial distress in improving the firm‘s bargaining power and resolving the financial contracting problem (Ofek, 1993). Financial contracts are originally incomplete and cannot incorporate all possible scenarios which can happen in the future.

Since the main goal of financial contracting is to provide the platform for an optimal allocation of resources in order to attain a socially efficient outcome, financial distress and bankruptcy help to distinguish between economically viable and inefficient companies which should be liquidated. A company is economically viable if it is worth more as a going concern than if it were shut down. Therefore, financial distress can be seen as a selection mechanism which terminates unprofitable companies (Smith & Stromberg, 2004).

Kahl (2001) also examined the role of financial distress as a selection mechanism. He challenged the question of whether financial distress efficiently selects between troubled companies which should be liquidated and the firms which should survive as independent entities. Results of his research showed that the poor operating performance of economically weak companies is not tolerated for long by the market. As a rule, after entering financial distress, the bad firms with poor future prospects end in liquidation or are acquired by other market players.

Firms with an originally better performance have higher rates of success and need a shorter time to regain financial health.

Therefore, financial distress is an efficient selection mechanism which helps to reallocate resources in the economy from the poorly performing companies towards better uses, while good assets are kept within the surviving firm (Kahl, 2001).

Wruck (1990) pointed out that financial distress creates shareholder value and improves corporate performance. Especially, for companies with a high level of debt, financial distress provides a chance to improve their longevity by forcing them to refocus their corporate strategy and to change their organizational structure, which leads to an increase in organizational efficiency in comparison to the pre-distressed period. Specifically, the following aspects of firm efficiency were investigated by the current study; fixed assets turnover ratio; current assets turnover ratio and net worth turnover ratio.

2.3.4. Firm Leverage

Firm financial leverage refers to debt ratios which establish a relationship between a company's total debt and its total assets thus giving an idea of the amount of leverage used by the insurance and bank industries. Widely used ratios of financial leverage are gearing ratio, total debts to total equity and total debt to assets ratios. Low debt to equity ratio is better since it indicates that the company's debt burden is lower. Financial distressed firms often suffer from huge debt burden characterized by high interest payments. Gearing concentrates on long term debt financing. The firms leverage ratio therefore shows how heavily the firm is in debt. When a firm borrows money, it promises to make a series of interest payments and then to repay the amount that it has borrowed. If profits rise, the debt holders continue to receive a fixed interest payment, so that all the gains go to the shareholders. Of course, the reverse happens if profits fall. In this case shareholders bear all the pain.

If times are sufficiently hard, a firm that has borrowed heavily may not be able to pay its debts. The firm is then bankrupt and shareholders lose their entire investment. Because debt increases return to shareholders in good times and reduces them in bad times, it is said to create financial leverage (Gitman, 1991).

In general, the more debt a firm uses in relation to its total assets, the greater its financial leverage. Financial leverage is the magnification of risk and return introduced through the use of fixed-cost financing, such as debt and preferred stock. The more fixed-cost debt a firm use, the greater was its expected risk and return. Financial leverage can be measured by debt to asset ratio and debt to equity ratio (Gitman, 1991).

Ogawa (2003) found out that corporate debt can affect investment by creating debt overhang. Debt overhang is defined as deterrence of new investment due to the presence of debt outstanding. It occurs when the face value of debt outstanding is greater than its market value. In this case some of the benefits from new investment will go to the existing creditors rather than to the new investors. An increase of debt to net worth raises external finance premium due to the associated increase in the probability of bankruptcy. In conclusion this study confirms that financial distress has an adverse effect on employment of small firms. The study also found out that financial distress affected fixed investment of small firms negatively. It also suggested that to attain the sustained long-run growth, reducing the corporate debt and wiping out the banks 'bad loans is an urgent agenda for the Japanese economy. The finding from above study in Japan was only limited to Leverage effect on financial distress. The current study looked at five variables as possible determinants of financial distress.

Another study by Andrade & Kaplan (1998) found out that a firm's leverage is a main factor that negatively impacts the level of financial distress. The finding from this was only limited to the leverage effect on financial distress. The current study looked at five variables as possible determinants of financial distress.

A study by Ofek (1993) found out that highly-leveraged firms are more likely than their less-leveraged counterparts to respond operationally to short-term distress. Such firms are also more likely to take individual actions such as restructuring assets and laying off employees when performance deteriorates. In addition to responding quickly operationally, highly-leveraged firms are more likely to respond financially, through dividend cuts, debt restructuring, and bankruptcy. The finding from this study was only limited to Leverage effect on financial distress.

The findings further showed that highly levered firms respond faster to minimize implication of poor performance. Furthermore, the current study looked at five variables as possible determinants of financial distress. On firm leverage, the current study specifically investigated the following aspects; debt to asset ratio and debt to equity ratio.

2.4. The Model Fitness Factor

The number of factors considered in anyone study ranges from one to 57. The factor most common to multiple studies is the ratio of net income to total assets (Return on Assets), included in 54 studies. The second most common factor is the ratio of current assets to current liabilities (Current Ratio), found in 51 studies. Six studies (Coats and Fant, 1992); (Guan, 1993); (Nour, 1994); (Wilson and Sharda, 1994); (Serrano-Cinca, 1996); (Lee, 2001) utilize the five variables included in Altman's (1968) original multivariate model.

There has been some fluctuation in the range of the number of factors used in studies over the last 40 years; however, the average has remained fairly constant around four to ten factors. The current study used Z ‘‘Score, MDA, ratio analysis and multiple regression analysis to evaluate the determinants of financial distress for insurance companies in Ethiopia.

2.5. Conceptual Framework

Miles and Huberman (1984) defined a conceptual framework as the current version of the researcher‘s map of the territory being investigated. Implicit in their view is that conceptual frameworks may evolve as research evolves also. Their notion accommodates purpose (boundaries) with flexibility (evolution) and coherence of the research (plan/analysis/conclusion) which all stem from conceptual frameworks.

Mugenda and Mugenda (1999) also viewed a conceptual framework as a hypothesized model identifying the model under study and the relationships between the dependent variable and independent variables. A researcher conceptualizes the relationship between variables in the study and shows the relationship graphically or diagrammatically. Newsman (1994) urged that in a conceptual framework, descriptive categories are systematically placed in broad structure of explicit prepositions, statement of relationships between two or more empirical properties (variables) to be accepted or rejected. A variable, according to Kothari (2003) is a concept, which can take on qualities of quantitative values. Lumley (1994) saw a variable as an attribute or qualities of the cases that are recorded or measured.

A dependent variable is the outcome variable, the one that is being predicted. Variation in the dependent variable is what the researcher tries to explain. The independent variable also knownas the predictor or explanatory variables are determinates that explain variation in the dependent variable (Allison, 1996, Altman, & Hotchkiss, 2006).

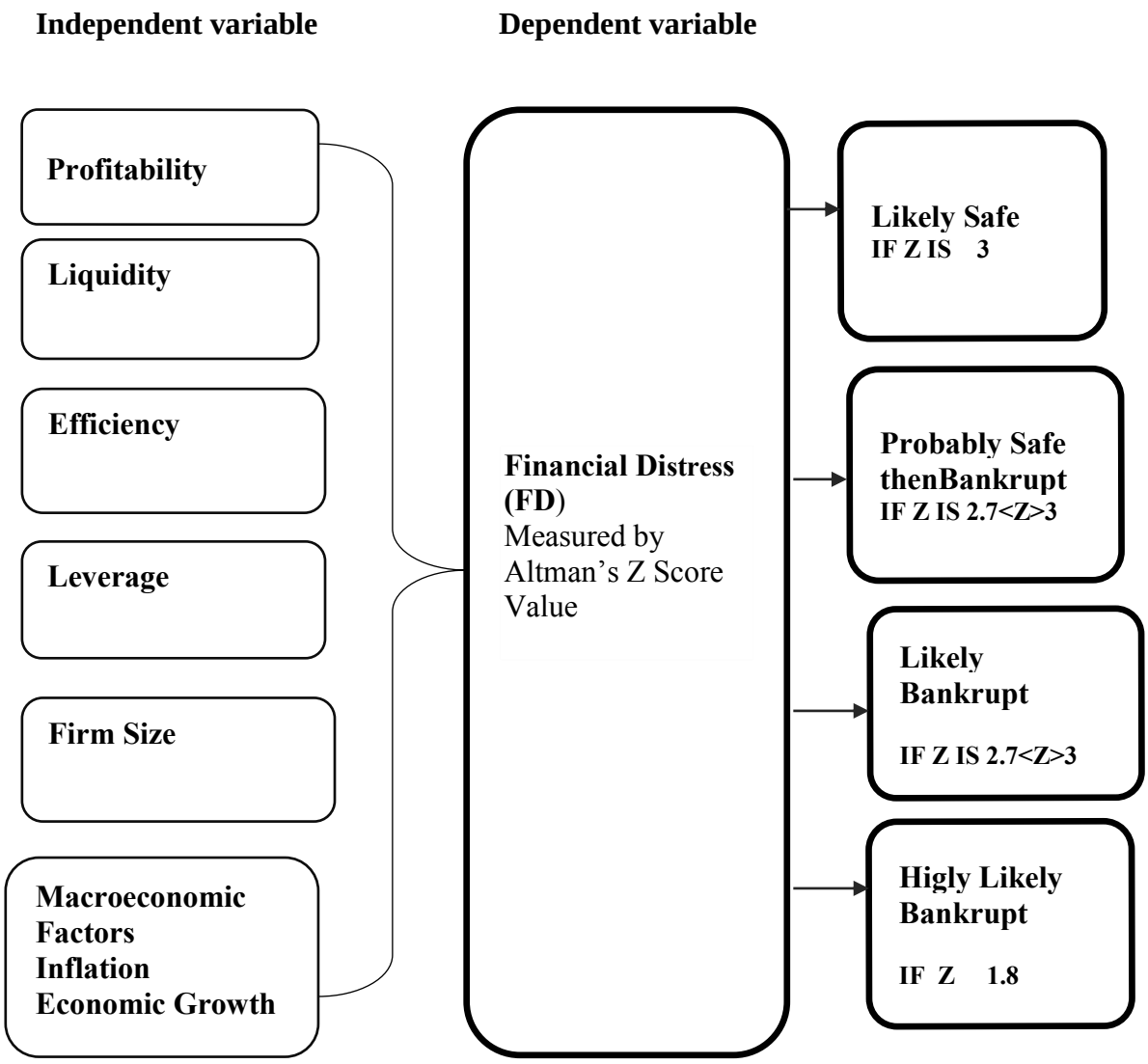

Figure 1. Self constructed conceptual framework

CHAPTER THREE

3. Research Design and Methodology

The purpose of this chapter is to present the research approach adopted by the research. The first part presents the model specifications be tested. The second part present the study design used for the research. Target population and sample present in the third part and the final part discussed the method used for data collection, analysis and presentation.

3.1 Research Design

Quantitative research approach is used since it helps to conduct systematic empirical study of observable phenomena via statistical or mathematical techniques (Creswell, 2009). The objective of quantitative research is to develop and employ mathematical models, theories and hypotheses pertaining to phenomena. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships. Quantitative research is generally made using scientific methods, which can include: The generation of models, theories & hypotheses, the development of instruments and methods for measurement, Experimental control and manipulation of variables, Collection of empirical data and Modeling and analysis of data.

This study follows a deductive reasoning in describing the event. By applying the selected theory to explain the event, event characteristics will serve as empirical facts supporting the validity of the theory. Deduction is also the most commonly used research approach in combination with positivism (Sutrisna, 2009). However, it is believed the study is purely deductive as part of the research purpose was to figure out determinants of the financial distress of commercial banks and Insurance.

A quantitative strategy is best suited as the research has a large focus on numbers and the use of hypothesis and statistical tools to analyze them.

The knowledge that is sought-after has to be measured in order to answer the research problem and the knowledge gap. In this study, this approach enabled to see the determinants of the major

bank specific and macroeconomic factors affecting Ethiopian commercial banks and Insurance. Thus, this enabled to test the theory in the context of Ethiopia.

3.2. Target Population and Sample

I. Population

The target population in this study covers all commercial banks and insurance industries that are operating in the country during the sample period (i.e., 2013 to 2017). In Ethiopia, Currently each Industry (Insurance and Commercial Banks) contains 17 firms.Ten of the insurance firms has more than 5 years of operation and three of banks has larger market share.

II. Sample

The sampling technique used in this research to select banks and Insurance Companies that has longer period of service so as to get sufficient information using purposive sampling method. As stated by (Kothari, 2004), purposive sampling is more desirable when the total population is small and a known characteristic of them is to be studied. The numbers of banks and Insurance companies in the country are few; however, adopted balanced panel data needs a large number of observations; thus Ten Insurance Companies and three commercial banks were selected due to the availability of full data for the selected time period.

The researcher selected one government and two privately owned Commercial Banks , namely; Awash Bank of Ethiopia, Dashen Bank, and commercial Bank of Ethiopia and 10 insurance companies found Ethiopia, namely Ethiopian Insurance Corporation General, National Insurance Company of Ethiopia S.C, Awash Insurance Company S.C, Africa Insurance Company S.C, Nyala Insurance Company S.C, Nile Insurance Company S.C , Global Insurance Company S.C, The United Insurance S.C , NIB Insurance Company and Lion Insurance Company S.C which is total 65 observations are included.

3.3. Data Collection Instrument

To comply with the research objectives, the researcher focused on secondary data, which are obtained from financial statement of individual insurance companies and financial publication of Ministry of Finance and Economic Development (MOFED) and National bank of Ethiopia

(NBE) for macroeconomic data and from banks included in the sample for bank specific data. In order to increase the credibility and reliability of the research findings the study use audited financial statements (balance sheet and income statement) of each banks.

And this is because the advantage of using secondary data includes the higher quality data compared with primary data collected by researchers themselves; the feasibility to conduct panel evidence, which is the case in this study; and the permanence of data, which means secondary data generally provide a source of data that is both permanent and available in a form that may be checked relatively easily by others.

3.4. Data and Analysis

A description of data preparation processes such as checking, editing, coding, and transcribing as well as specifying any special or unusual treatments of data before they are analyzed. To get a robust result, the model has to be free from any econometric problems such as multicollinearity, Heteroskedasticity, autocorrelation, and must make sure the error term for each variable is stationary. This part of study is dedicated to describe the said econometric problem.

Data analysis: After the data collected and cleared, the panel data were analyzed using descriptive statistics, correlations coefficient and multiple linear regression analysis. Mean values and standard deviations were also used to analyze the general trends of the data from 2013 to 2017 based on the sample of three commercial bank and 10 insurances.

Correlation matrix was used to examine the relationship between the dependent and explanatory variables. A random effect multiple linear regression model with ordinary least square (OLS) estimator was conducted using stata 13 econometric software package, to test the casual relationship between financial distress and explanatory variables.

Data was presented in a way that users or readers can easily understand and interpret. Particularly for the first objective the study was used tabular presentation of data. That means the results of distress measurement and regression output was discussed in chapter four.

3.5. Model Specification

Based on the discussion, theoretical and empirical, that had in the previous chapter, the study come up with the following model, variables that tested to meet the research objectives, identifying the determinants of banking and insurance distress.

In order to decide between fixed effect and random effects regression model, the study carried out the Hausman test. Since the p-value was insignificant at 5% level of significance random effect was selected. Further test was also conducted to choose between random effect versus pooled OLS regression model by using Breush and pagan Lagrangian multiplier test and the result showed that pooled OLS is fitted for the study since the P-value was insignificant at 5% level of confidence. Therefore, model for the study was specified as follows:

$FD=\beta o+ \beta 1Prof + \beta 2Liq+ +\beta 3Eff+ \beta 4Lev+\beta 5fsize + \beta 6GDP + \beta 5fIR+ \varepsilon$..... (Equation 3.1)

Where: FD= Financial distress (FD) which is the dependent variable

Prof is the profitability of the firm;

Liq is the firm‘s holding of liquid assets to cover short term debts;

Eff is efficiency of the firm;

Lev is the level of the firm leverage

Fsize is the firm size of the firm

βo= Constant

ε= Error term

To measure financial distress exposure of bank insurance companies, Altman‘s model was used for the study:

Application of Altman’s Discriminant Model to measure Financial Distress for all corporate finance = below:

Where: X1 = Working Capital/Total Assets (WC/TA) = Profitability

X2 = Retained Earnings/Total Assets (RE/TA) = Liquidity

X3 = Earnings before Interest and Taxes /Total Asset (EBIT/TA) = Efficiency

X4 = Market Value of Equity/Total liabilities (NW/TL) = Leverage

X5=Sales/Total Asset = Firm Size

X6= The yearly real Gross Domestic Product (GDP) growth rate was used. Economic growth:

X7= The annual inflation rate was used: Inflation rates (IR)

Qualitative data was condensed by editing, paraphrasing and summarizing in order to derive meaning from it. Using the content analysis technique, the data was coded and thereafter put into theme categories and tallied in terms of the number of times it occurs. Data was then tabulated into respective themes. This process according to Frankel & Wallen (2000) involves reading through the questionnaires, transcripts and other sources of data, developing codes, coding the data, and drawing connections between the various discrete pieces of data.

CHAPTER FOUR

4. Data Analysis, Interpretations and Presentations

This part of the research present the results of data analysis made for the attainment of the research objectives, identifying determinants of financial distress of insurance and banks industries, based on the methodology that have discussed by undermine the model by Altman & Hotchkiss (2006) Corporate financial distress and bankruptcy: Predict and avoid bankruptcy, Analyze and invest in distressed debt for two common denominators of corporate financed which is identified in profitability liquidity, leverage, efficiency, firm size, and macroeconomic variables are estimated below.

4.1 Descriptive Statistics

Common sample‟ use only the part of the sample that is available for all the series selected, whereas „Individual sample‟ will use all available observations for each individual series. If the number of observations is the same for all series; similar to this study, the result would be identical for both options (Brooks, 2014 PP 88).

The distribution of dataset for dependent and independent variables used in the study is explained a measurement of location and variability. The central value of the variables denoted by location is measured mean whereas the spread of the data from mean denoted by variability is measured by standard deviation.

If the observations for a given set of data follow a normal distribution, then the mean and variance (standard deviation) are sufficient to entirely describe the series (Brooks, 2014 PP 66). But the researcher additionally discussed the minimum and maximum value of each variable as illustrated in table by descriptive statistics. The central idea of descriptive statistics for a given study is.

Table 1: Summary of Descriptive Statistics

Variable |	Obs	Mean	Std. Dev.	Min	Max
z-score |	65	3.195422	.6988036	2.3083	6.4517
Liquidity |	65	.4748046	.1028228	.0975	.6912
leverage |	65	.6110385	.2396401	.4052	1.8042
profitability |	65	.2216923	.0822475	.0155	.3878
Efficiency |	65	.6621646	.1691095	.3968	1.2857
Economic growth |	65	.1058154	.0089563	.087	.121
Firm SIZE |	65	7847.344	5565.911	224	24763.88
Inflation |	65	.1897846	.1010975	.077	.364

*****Source from researcher financial survey data, 2019**

The Table above provides a summary of the descriptive statistics of the dependent and explanatory variables for 65 observations (10 Insurance Companies and 3 commercial banks with 5 years of data from 2013 to 2017).Accordingly, the mean, the median, the maximum, the minimum and the standard deviation values of each variable discussed here, so as to show the nature of the data used for detailed analysis. The average value of Z-score, as a measure of financial distress was 3.195422, which means there is only a small probability that it will remain solvent. According to Altman (2006), The mean Z score of Companies as its indicated in the conceptual frame work, if Z is less than or equal to 3 there is a very small probability that the firm will go bankrupt and if Z is between 2.7 and 3, then the firm is probably Safe from Bankruptcy, whereas, if Z is between 1.8 and 2.7 the firm would likely become bankrupt and if Z less than or equal to +1.8, the firm highly likely distressed

According to those explanatory variable indicated banking and insurance industries regarding to **liquidity** indicated in mean difference of .4748046% of measure the ability of a company to pay its short term debts obligations depicted at standard deviations of .1028228. This refers to the solvency of the firm‘s overall financial position of banking and insurance company the ease with which it can pay its bills. Because a common precursor to financial distress and bankruptcy is low or declining liquidity, these ratios are viewed as good leading indicators of cash flow problems

A study by Turetsky & McEven (2001) sought to illustrate dependence of the risk of default on the change in liquidity through empirical investigation of firm longevity. The scholars examined the factors influencing the shift from the upper to the lower level of the downward spiral. Results show that the volatile decrease in cash flows from positive to negative has an enormous impact on subsequent default; a one-unit increase in liquidity measured by the current ratio reduces the risk of default by approximately 47%.

The study focused on effect of liquidity on financial distress and firm‘s longevity. The finding from this study depicts the important role liquidity plays in financial distress. It shows that a one-unit increase in liquidity decrease risk of default by 47%. The findings from this study was only limited to Liquidity effect on financial distress. The current study looked at five variables as possible determinants of financial distress. The findings show that the number of deterioration companies and cash flow problem companies increased over the period of study.

Pranowo et al. (2010) analyzed financial distress by mapping 220 non-financial companies which are listed in Indonesia Stock Exchange into the steps of integral financial distress. The result indicated that deterioration had the most effect on financial distress for Indonesia public companies and mapping into five different industrial sectors.

According to those explanatory variable indicated banking and insurance industries regarding to leverage liquidity indicated in mean difference of .6110385% indicated to debt ratios which establish in standard deviations of .2396401 total debts and its total assets thus giving an idea of the amount of leverage used by the insurance and bank industries. Widely used ratios of financial leverage are gearing ratio, total debts to total equity and total debt to assets ratios. Low debt to equity ratio is better since it indicates that the company’s debt burden is lower.

The study also found out that financial distress affected fixed investment of small firms negatively. It also suggested that to attain the sustained long-run growth, reducing the corporate debt and wiping out the banks ‘a bad loan is an urgent agenda for the Ethiopian economy. So as to the finding from above result in Ethiopian banking and insurance industries was only limited to Leverage effect on financial distress. The current study looked at five variables as possible determinants of financial distress.

According to those explanatory variable indicated banking and insurance industries regarding to profitability indicated in mean compressions of Profitability ratios measure a company's ability to generate revenue in excess of expenses is 0.2216923%which is portrayed in measures of profitability include; gross margin, net margin, operating margin, return on capital employed, return on equity, and return on assets by Standard deviations of 0.822475Some.

The research conducted on financially distressed firm suggests taking actions of adjusting the business to increase profitability (Chang-e, 2006). Some other researchers such as Hotchkiss (1995) explored the achievement of bankrupt reorganization firms in US of America and focused on profitability.

The current study finding firm profitability in insurance and bank industries in Ethiopia that lead to financial distress; net profit margin, loss ratio, return on assets, premium growth and return on equity is indicated by 22% which is plays a significant role in a firm‘s operation and profitability through the influence of cost implications, such as administrative and legal costs associated with the bankruptcy process.

Similarly, to Pranowo et al. (2010) suggested that firm efficiency can be measured in terms of its fixed assets turnover ratio, current assets turnover and net worth turnover ratio. These components indicate the firm‘s viability as well as speed of turning over its assets within the year, which determines the firm‘s financial distress.

Kahl (2001) also examined the role of financial distress as a selection mechanism. It throws down the gauntlet the question of whether financial distress efficiently selects between troubled companies which should be liquidated and the firms which should survive as independent entities.

Results of his research showed that the poor operating performance of economically weak companies is not tolerated for long by the market. As a rule, after entering financial distress, the bad firms with poor future prospects end in liquidation or are acquired by other market players.

Results of his research showed that regarding to insurance and bank Firm SIZE indicated in mea birr of 7847.344million birr per year at standard deviations of 5565.911.firm size shows to stake holder of bank and insurance industries shows larger ratios of liquid assets to short term debt since it is an indication that the firm can pay off its short term debts and still fund its operations.

The finding presumes that the average liquidity ratios of firm's size are higher than those of financially distressed firms in determining financial distress in companies in Ethiopia. As Financial distress is determined mainly by the degree of liquidity, profitability and by the size of debt. According to the findings from this study, the best predictors of financial distress of Ethiopian insurance and banking companies' size of Liquidity, profitability and size of debt (leverage) as determinants of financial distress in insurance and bank industries.

As far as the macroeconomic factors are concerned, the Ethiopian economy continued to grow and the overall economic performance reflected rapid expansion of the country. Among the expected macroeconomic factors that could affect banking and insurance as corporate financial distress GDP was growing by 10.58 % on average for the last five years.

Due to the expansionary monetary policy, the country's economy had been experiencing an average of 18.97% inflationary effect.

4.2. Tests for the Classical Linear Regression Model (CLRM) Assumptions

A. Normality Assumption

If the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant meaning disturbance to be normally distributed around the mean. This means that the *p*-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level (Brooks, 2008).

Ho: Normally distributed errors

Ha: Non-Normal Distribution error

Therefore, the normality tests for this study as shown in table below, the Bera-Jarque statistic has a P-value of 0.184 implies that the p-value for the Jarque-Bera test for models is greater than 0.05 which indicates that the errors are normally distributed. Based on the statistical result, the study failed to reject the null hypothesis of normality at the 5% significance level.

B. Homoscedasticity Assumption (variance of the errors is constant)

According to Brooks, (2008) it has been assumed thus far that the variance of the errors is constant, $\sigma 2$ - this is known as the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be heteroscedastic. To test for the presence of heteroscedasticity, the popular white test was employed.

It is hypothesized that as follows

Ho: There is no heteroskedaticity problem (homoskedasticity) Ha: There is heteroskedaticity

Table 2: Heteroskedasticity Test: White

F-statistic	0.493021	Prob. F (44,72)	0.9935
Obs*R-squared	27.08928	Prob. Chi-Square(30)	0.9789
Scaled explained SS	21.28082	Prob. Ch-Square(44)	0.9985

*****Source from researcher financial survey data, 2019**

According to Brook, (2008) indicated that if the P-values of these test statistics are considerably in excess of 0.05, then the test give conclusion that there is no evidence for the presence of hetro-scedasticity. It is clear evident that the errors are homoscedastic. Therefore, based on this statistic we fail to reject the null hypothesis that is indicated as there is no Heteroscedasticity for the models.

C. Test for Assumption of Autocorrelation

It is assumed that the errors term is uncorrelated with one another. If the errors are uncorrelated with one another, it would be stated that they are auto correlated. This is an assumption that the errors are linearly independent of one another (uncorrelated with one another). The simplest test is due to Durbin and Watson (Brook, 2008). To test this assumption, the DW stat value in the main regression table should be considered.

The Durbin-Watson test statistic value in the regression result was 1.71.

Table 3. Autocorrelation test

Variables	DW Test Statistics Result
All Specific And Macroeconomic Factors	1.71

*****Source from researcher field survey,2019

To identify determinants of three selected Ethiopian Banking and 10 insurances financial distress, 65 (5*13) observations were used in the model.

Therefore, to test for autocorrelation, the DW test critical values were used. Then relevant critical lower and upper values for the test are dL= 1.421 and dU=1.670 respectively. The values

of 4 - dU = 4-1.670=2.33; 4 - dL = 4-1.421=2.579. The Durbin-Watson test statistic of 1.71 is clearly between the upper limit (dU) which is 1.670 and the critical value of 4- dU i.e.2.33 and thus, the null hypothesis of no autocorrelation is within the non- rejection region of the number line and thus there is no evidence for the presence of autocorrelation.

D. Multicollinearity Test

An implicit assumption that is made when using the panel OLS estimation method is that the explanatory variables (independent variable) are not correlated with one another.

Table 4: Multicollinearity test

Variable's	**z-score**	**LQ**	**LV**	**ROA**	**EFF**	**GDP**	**FS**	**IR**
z-score	1							
Liquidity	-0.26	1						
leverage	0.397	-0.1997	1					
profitability	0.023	-0.0708	-0.1441	1				
Efficiency	-0.29	-0.0061	0.51377	-0.0037	1			
Economic growth	-0.74	0.1674	0.2897	-0.0569	0.26241	1		
Firm SIZE	-0.31	-0.221	0.2638	-0.1127	0.20072	0.3606	1	
Inflation	0.573	0.1404	-0.8298	0.1112	-0.55244	-0.4126	-0.4746	1

*****Source from researcher financial survey data, 2019**

If there is no relationship between the explanatory variables (independent variable), they would be said to be orthogonal to one another. If the explanatory variables were orthogonal to one another, adding or removing a variable from a regression equation would not cause the values of the coefficients on the other variables to change (Brook, 2008).

According to Gujarati, (2004) multicollinearity could only be a problem if the pair-wise correlation coefficient among regressors is above 0.90 Hailer et al, 2006 *Citedin* Birhanu, (2012) which is not more or less the case in the study variables.

4.3. Results of the Regression Analysis

This section presents the general regression results of fixed effect model that made to identify the bank specific and macroeconomic determinants of financial distress of insurances and banks industries of Ethiopia. Based on the information revealed on Appendix 5, the research developed the following model.

FD=-264.4-7.92EFF-0.0007+51.4GDP-8.5IF+49.7LQ-3.7+LV+8.5 ROA

R-square: R-square, measures the proportion of the total variation of the dependent variable that is explained by the variation of the explanatory variables.

Hence, as can be shown from Appendix 5, the fixed effect regression model's R-square is 85.0% while the Adjusted R-squared is 66.1%. meaning that, the explanatory power of the model is significant and based on F statistic the model as a whole is statistically significant (P-value is less than 0.05) at 1% confidence level.

Financial distress may be due to perceptions about firms 'capacity to manage economic resources (such as income and savings), pay bills, repay debts, and provide for the needs over a firm's life emphasized that financial distress could be due to any of the Z-score with a beta coefficient events: bankruptcy, bond default, bank account overdrawn, or non-payment of a preferred stock dividend. It on the other hand, classified a firm into a five-state financial distress: state 0: financial stability; state 1: omitting or reducing dividend payments more than 40% below previous year; state 2: technical default and default on loan payments; state 3: protection under the Bankruptcy Act; and state 4: bankruptcy and insolvency.

Discussion of the Results

Referring to Appendix 5,Result regarding to **Efficiency** indicated in Z-score with a beta coefficient =-7.921358,thusthe negative coefficient of the function shows the financial distress of The **bank and insurance industries** in the operational welfare at 1% significance level which is the hypothesis is accepted.

The finding shows that aspect of company efficiency is that it triggers by 7.9% negatively change in the managerial control over the company financial distress, pushing the firm to alter its

operational strategy in order to raise declined efficiency. It contends upon the unique function of financial distress in improving the firm‘s bargaining power and resolving the financial contracting problem. Financial contracts are originally incomplete and cannot incorporate all possible scenarios which can happen in the future.

According to Smith & Stromberg (2004) attend the main goal of financial contracting is to provide the platform for an optimal allocation of resources in order to attain a socially efficient outcome, financial distress and bankruptcy help to distinguish between economically viable and inefficient companies which should be liquidated. A company is economically viable if it is worth more as a going concern than if it were shut down. Therefore, financial distress can be seen as a selection mechanism which terminates unprofitable companies.

Wruck (1990) pointed out that efficiency creates shareholder value and improves corporate performance. Especially, for companies with a high level of debt, financial distress provides a chance to improve their longevity by forcing them to refocus their corporate strategy and to change their organizational efficiency negatively, which leads to an increase in organizational financial distress in comparison to the pre-distressed period. Specifically, the following aspects of firm efficiency were investigated by the current study; fixed assets turnover ratio; current assets turnover ratio and net worth turnover ratio.

Result regarding to **firm size** indicated in Z-score with a beta coefficient =-.0000766 which is the insurance and banking industries welfare function is the negatively shows financial distress of the **bank and insurance industries** in the total client outreach welfare at 10% significance level which is the hypothesis is rejected. A negative coefficient indicates that the larger the variable, the smaller the expected probability of insolvency; a positive coefficient indicates that the larger the variable, the greater the expected probability of insolvency. The finding indicates that in terms of probability of financial distress, a large financial institution might have higher chance of becoming distressed if it is more diversified and less exposed to firm size get negatively decline.

On the other hand, according to Iannotta, et al., (2007) the “too-big-to-fail” hypothesis the likelihood of distress increases for big corporate finance such as bank and insurance industries due to a firm size provided from corporate finance at a time of insolvency. This support exposed

large bank and insurance industries to take excessive risks, which is more than they can afford to lose, in an effort to maximize earnings.

It finally additionally, analyses segregated by firm size of insurer may yield additional information on the complexities of financial distress.

Result regarding to **economic growth** indicated in Z-score with a beta coefficient = (51.46556) positively has no significance relations ship which is the hypothesis is rejected.

As economic growth usually signals a healthy economy and reduced the probability of financial distress in the banking industry. a measure of Economic growth affects, bring a 51%-unit decrease in Z-score or increase in the level of financial distress of the solvency of insurance and bank industries get low operational self-efficiency, a major recession or crises in business operations reduces borrowers' capability to service obligations; as a result, decrease insurance premium sell and banks' liquidity risk minimizations and eventually banks and insurance insolvency.

Result regarding to **inflations** indicated in likelihood ratio of coefficient in = (-0.8511666) shows negative influence and has at significance level of 10%which financial distress which is the hypothesis is accepted.

It is shown that low and stable inflation is important for the financial activity viability. By offering a relative monetary certainty, it reduces financial distress or the exposure to bank failure. Several empirical studies such as those of Boyd, Levine and Smith (2001) have shown that monetary stability and financial development are generally negatively correlated. Thus, higher inflation contributes to financial stability.

Result regarding to liquidity indicated in Z-score with a beta coefficient = (49.83421) shows positive result and has at significance level of 5% which financial distress which is the hypothesis is accepted.

The result ratio expresses the degree to which a bank and insurance industries in Ethiopia is capable of fulfilling its respective obligations decline by 49 % of able to maintain a level of liquidity insufficient to meet its financial obligations in a timely manner; and capable of quickly liquidating assets with minimal loss.

The study focused on effect of liquidity on financial distress and firm‘s longevity. The finding from this study depicts the important role liquidity plays in financial distress. It shows that a one-unit increase in liquidity decrease risk of default by 49%. The findings from this study was only limited to Liquidity effect on financial distress. The current study looked at seven variables as possible determinants of financial distress.

Similarly, study conducted by Pranowo et al. (2010) analyzed financial distress by mapping 220 financial companies which are listed in Indonesia Stock Exchange into the steps of integral financial distress.

The result indicated that deterioration had the most effect on financial distress for Indonesia public companies and mapping into five different industrial sectors. The findings show that the number of deterioration companies and cash flow problem companies increased over the period of study.

There should be adequate liquidity, compared to present and future needs, and availability of assets readily convertible to cash without undue loss. The fund management practices should ensure that a bank is able to maintain a level of liquidity sufficient to meet its financial obligations in a timely manner; and capable of quickly liquidating assets with minimal loss.

According to Tadess (2017) Liquidity indicated to positively mobilizing short-term led bank to deposits at lower interest rate, and lending or investing these funds in long-term at higher rates, so it is hazardous for banks mismatching their lending interest rate. Poor management of short term liquidity thus leads initially solvent financial institutions to financial distress and failure.

Result regarding to leverage indicated in Z-score with a beta coefficient = (-3.701903) shows positive result and has at significance level of 10% which financial distress which is the hypothesis is accepted. Firm financial leverage shows that the debt ratios and ratio of premium sell which establish a relationship between a company’s total debt and its total assets thus giving an idea of the amount of leverage used by the insurance and bank industries indicated negatively by 3.7% per annual.

The firms **leverage** therefore shows how heavily the firm is in debt and firm borrows money, it promises to make a series of interest payments and then to repay the amount that it has a measure of leverage, bring -3.7 % unit decreases in Z-score or increase in the level of financial distress. If

profits rise, the debt holders continue to receive a fixed interest payment, so that all the gains go to the shareholders. Of course, the reverse happens if profits fall. In this case shareholders bear all the pain.

If times are sufficiently hard, a firm that has borrowed heavily may not be able to pay its debts. The firm is then bankrupt and shareholders lose their entire investment. Because debt increases return to shareholders in good times and reduces them in bad times, it is said to create financial leverage (Gitman, 1991).

In general, the more debt a firm uses in relation to its total assets, the greater its financial leverage. Financial leverage is the magnification of risk and return introduced through the use of fixed-cost financing, such as debt and preferred stock. The more fixed-cost debt a firm use, the greater was its expected risk and return. Financial leverage can be measured by debt to asset ratio and debt to equity ratio (Gitman, 1991).

Result regarding to **profitability** indicated in Z-score with a beta coefficient = 8.508325) shows positive result and has at significance level of 10% which financial distress which is the hypothesis is accepted. This indication of how effective a company is generating profits given sales and or its capital assets contribute positive correlations. The result shows that on Profitability ratios measure a company's ability to generate revenue in excess of expenses which is include; gross margin, net margin, operating margin, return on capital employed, return on equity, and return on assets a measure of profitability, bring decrease in Z-score or increase in the level of financial distress by 8.5% per annual.

The research conducted on financially distressed firm suggests taking actions of adjusting the business to increase profitability (Chang-e, 2006). Some other researchers such as Hotchkiss (1995) explored the achievement of bankrupt reorganization firms in US of America and focused on profitability.

Financial distress plays a significant role in a firm 's operation and profitability through the influence of cost implications, such as administrative and legal costs associated with the bankruptcy process (i.e., direct financial distress costs) or increased costs of debt that is, indirect financial distress costs for example (Efrem, 2015).

The current study adopted the following variables of firm profitability in insurance and bank industries in Ethiopia that may lead increase 8.5% Z-score with a beta coefficient to financial distress of net profit margin, loss ratio, return on assets, premium growth and return on equity.

CHAPTER FIVE

5. Summary, Discussion Conclusion and Recommendation

5.1. Summary of Findings

From result indicated in summery of descriptive statistics intended to give general descriptions about the dependent and the independent variables from number of observations for each variable is 65 (i.e., data for 3 banks and Ten Insurance Companies for ten years (2013 – 2017).

Accordingly, the mean, the median, the maximum, the minimum and the standard deviation values of each variable discussed here, so as to show the nature of the data used for detailed analysis. The average value of Z-score, as a measure of financial distress, was 3.195422 which mean there is only a small probability that it will remain solvent. According to Altman (2006), the mean Z score of the companies that did not go bankrupt is -0.583, while that for the bankrupt firms is +0. 648. It interpret this table 1, as indicating that if Z is less than about -0.3, there is a very small probability that the firm will go bankrupt, whereas if Z is greater than +0.3, there is only a small probability that it will remain solvent. If Z is in the range ±0.3, called the zone of ignorance, we are uncertain about how the firm should be classified.

According to those explanatory variable indicated banking and insurance industries regarding to liquidity indicated in mean difference of .4748046% of measure the ability of a company to pay it short term debts obligations depicted at standard deviations of .1028228. This refers to the solvency of the firm‘s overall financial position of banking and insurance company the ease with which it can pay its bills. Because a common precursor to financial distress and bankruptcy is low or declining liquidity, these ratios are viewed as good leading indicators of cash flow problems.

The study focused on effect of liquidity on financial distress and firm‘s longevity. The finding from this study depicts the important role liquidity plays in financial distress. It shows that a one-unit increase in liquidity decrease risk of default by 47%. The findings from this study was only limited to Liquidity effect on financial distress.

The current study looked at five variables as possible determinants of financial distress. The findings show that the number of deterioration companies and cash flow problem companies increased over the period of study.

According to those explanatory variable indicated banking and insurance industries regarding to leverage indicated in mean difference of .6110385% indicated to debt ratios which establish in standard deviations of .2396401 total debts and its total assets thus giving an idea of the amount of leverage used by the insurance and bank industries. Widely used ratios of financial leverage are gearing ratio, total debts to total equity and total debt to assets ratios. Low debt to equity ratio is better since it indicates that the company's debt burden is lower.

The study also found out that financial distress affected fixed investment of small firms negatively. It also suggested that to attain the sustained long-run growth, reducing the corporate debt and wiping out the banks 'a bad loan is an urgent agenda for the Ethiopian economy.

So as to the finding from above result in Ethiopian banking and insurance industries was only limited to Leverage effect on financial distress. The current study looked at five variables as possible determinants of financial distress.

According to those explanatory variable indicated banking and insurance industries regarding to profitability indicated in mean compressions of Profitability ratios measure a company's ability to generate revenue in excess of expenses is 0.2216923% which is portrayed in measures of profitability include; gross margin, net margin, operating margin, return on capital employed, return on equity, and return on assets by Standard deviations of 0.822475 Some.

The current study finding firm profitability in insurance and bank industries in Ethiopia that lead to financial distress; net profit margin, loss ratio, return on assets, premium growth and return on equity is indicated by 22% which is plays a significant role in a firm's operation and profitability through the influence of cost implications, such as administrative and legal costs associated with the bankruptcy process.

Results of the research showed that the poor operating performance of economically weak companies is not tolerated for long by the market. As a rule, after entering financial distress, the bad firms with poor future prospects end in liquidation or are acquired by other market players.

Results of the research showed that regarding to insurance and bank Firm SIZE indicated in mea birr of 7847.344 million birr per year at standard deviations of 5565.911.firm size shows to stake holder of bank and insurance industries shows larger ratios of liquid assets to short term debt since it is an indication that the firm can pay off its short term debts and still fund its operations.

The finding presumes that the average **liquidity ratios** of firm's size are higher than those of financially distressed firms in determining financial distress in companies in Ethiopia. As Financial distress is determined mainly by the degree of liquidity, profitability and by the size of debt. According to the findings from this study, the best predictors of financial distress of Ethiopian insurance and banking companies' size of Liquidity, profitability and size of debt (leverage) as determinants of financial distress in insurance and bank industries.

As far as the macroeconomic factors are concerned, the Ethiopian economy continued to grow and the overall economic performance reflected rapid expansion of the country. Among the expected macroeconomic factors that could affect banking and insurance as corporate financial distress GDP was growing by 10.58 % on average for the last five years.

Due to the expansionary monetary policy, the country's economy had been experiencing an average of 18.97% inflationary effect.

Result regarding to OLS regression results of determinant of financial distress model that made to identify the bank and insurance industries specific and macroeconomic determinants of financial distress of commercial banks in Ethiopia.

RESUALT ON MODEL to R-square: R-square, measures the proportion of the total variation of the dependent variable that is explained by the variation of the explanatory variables. Hence, as can be shown from result the fixed effect regression model's R-square is 85.0% while the Adjusted R-squared is 66.1%. meaning that, the explanatory power of the model is significant and based on F statistic the model as a whole is statistically significant (P-value is less than 0.05) at 1% confidence level.

From appendix 5, Result regarding to **Efficiency** indicated in Z-score with a beta coefficient =-7.921358 thus the negative distress of the function shows the financial distress of the **bank and insurance industries** in the operational welfare at 1% significance level which is the hypothesis is accepted.

The finding shows that aspect of company efficiency is that it triggers by 7.9% negatively change in the managerial control over the company financial distress, pushing the firm to alter its operational strategy in order to raise declined efficiency. It contends upon the unique function of financial distress in improving the firm‘s bargaining power and resolving the financial contracting problem. Financial contracts are originally incomplete and cannot incorporate all possible scenarios which can happen in the future. A company is economically viable if it is worth more as a going concern than if it were shut down. Therefore, financial distress can be seen as a selection mechanism which terminates unprofitable companies.

Especially, for companies with a high level of debt, financial distress provides a chance to improve their longevity by forcing them to refocus their corporate strategy and to change their organizational efficiency negatively, which leads to an increase in organizational financial distress in comparison to the pre-distressed period. Specifically, the following aspects of firm efficiency were investigated by the current study; fixed assets turnover ratio; current assets turnover ratio and net worth turnover ratio.

Result regarding to **firm size** indicated in Z-score with a beta coefficient =-.0000766 which is the insurance and banking industries welfare function is the negatively shows financial distress of the **bank and insurance industries** in the total client outreach welfare at 10% significance level which is the hypothesis is rejected.

Result regarding to **economic growth** indicated in Z-score with a beta coefficient = (51.46556) positively has no significance relations ship which is the hypothesis is rejected. A major recession or crises in business operations reduces borrowers’ capability to service obligations; as a result, decrease insurance premium sell and banks’ liquidity risk minimizations and eventually banks and insurance insolvency.

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The result indicated that deterioration had the most effect on financial distress for Ethiopian public companies and mapping into different industrial sectors. The findings show that the number of deterioration companies and cash flow problem companies increased 49% over the period of study.

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The firms **leverage** therefore shows how heavily the firm is in debt and firm borrows money, it promises to make a series of interest payments and then to repay the amount that it has a measure of leverage, bring -3.7 % unit decreases in Z-score or increase in the level of financial distress.

If profits rise, the debt holders continue to receive a fixed interest payment, so that all the gains go to the shareholders. Of course, the reverse happens if profits fall. In this case shareholders bear all the pain.

In general, the more debt a firm uses in relation to its total assets, the greater its financial leverage. Financial leverage is the magnification of risk and return introduced through the use of fixed-cost financing, such as debt and preferred stock.

Result regarding to **profitability** indicated in Z-score with a beta coefficient = 8.508325) shows positive result and has at significance level of 10% which financial distress which is the hypothesis is accepted. This indication of how effective a company is generating profits given sales and or its capital assets contribute positive correlations. The result shows that on

Profitability ratios measure a company's ability to generate revenue in excess of expenses which is include; gross margin, net margin, operating margin, return on capital employed, return on equity, and return on assets a measure of profitability, bring decrease in Z-score or increase in the level of financial distress by 8.5% per annual.

5.2. Conclusions

The very objective of the research is to identify the determinants of financial distress based on a ten years (2013-2017) panel data of three bank and ten insurance companies. The research used MDA based model developed by Altman & Hotchkiss (2006) as a measure of financial distress. Therefore, based on the analysis, the research reached on the following conclusions: Using the mean score of the descriptive statistics and Altman & Hotchkiss (2006) classification, the research confirmed that the banking and insurance industries had been distressed.

The finding shows that aspect of company efficiency is that it triggers by 7.9% negatively change in the managerial control over the company financial distress, pushing the firm to alter its operational strategy in order to raise declined efficiency. It contends upon the unique function of financial distress in improving the firm‘s bargaining power and resolving the financial contracting problem

A negative coefficient of firm size was indicating that the larger the variable, the smaller the expected probability of insolvency; a positive coefficient indicates that the larger the variable, the greater the expected probability of insolvency. The finding indicates that in terms of probability of financial distress, a large financial institution might have higher chance of becoming distressed if it is more diversified and less exposed to firm size get negatively decline. It finally additionally, analyses segregated by firm size of insurer may yield additional information on the complexities of financial distress.

As economic growth usually signals a healthy economy and reduced the probability of financial distress in the banking industry. a measure of Economic growth affects, bring a 51%-unit decrease in Z-score or increase in the level of financial distress of the solvency of insurance and bank industries get low operational self-efficiency, a major recession or crises in business operations reduces borrowers' capability to service obligations; as a result, decrease insurance

premium sell and banks' liquidity risk minimizations and eventually banks and insurance insolvency.

It is shown that low and stable inflation is important for the financial activity viability. By offering a relative monetary certainty, it reduces financial distress or the exposure to bank failure. Thus, higher inflation contributes to financial stability.

The result ratio expresses the degree to which a bank and insurance industries in Ethiopia is capable of fulfilling its respective obligations decline by 49% of able to maintain a level of liquidity insufficient to meet its financial obligations in a timely manner; and capable of quickly liquidating assets with minimal loss.

The study focused on effect of liquidity on financial distress and firm's longevity. The finding from this study depicts the important role liquidity plays in financial distress. It shows that a one-unit increase in liquidity decrease risk of default by 49%. The findings from this study was only limited to Liquidity effect on financial distress. The current study looked at seven variables as possible determinants of financial distress.

As economic growth usually signals a healthy economy and reduced the probability of financial distress in the banking industry. A measure of Economic growth affects, bring a 51%-unit decrease in Z-score or increase in the level of financial distress of the solvency of insurance and bank industries get low operational self-efficiency.

Firm financial leverage shows that the debt ratios and ratio of premium sell which establish a relationship between a company's total debt and its total assets thus giving an idea of the amount of leverage used by the insurance and bank industries indicated negatively by 3.7% per annual.

The current study adopted the following variables of firm profitability in insurance and bank industries in Ethiopia that may lead increase 8.9% of Z-score with a beta coefficient to financial distress of net profit margin, loss ratio, return on assets, premium growth and return on equity.

5.3 Recommendations

Researcher forwards the following Recommendation for improvement:

- The bank and insurances industries should handle causes of financial distress arising out of increasing in profitability into two groups: internal risk factors and external shocks. Internal risk factors can be attributed to poor management.
- There should be adequate liquidity, compared to present and future needs, and availability of assets readily convertible to cash without undue loss. The fund management practices should ensure that a bank is able to maintain a level of liquidity sufficient to meet its financial obligations in a timely manner; and capable of quickly liquidating assets with minimal loss.
- The bank should ensure that their efficiency is maintained and updated regularly, the institution also need to have in place policies to help guide the firm to overcome dynamic changes in the sector.
- The institution needs to upgrade firm size in order to facilitate realization of goals. The firm needs to an effective communication process between managers and subordinates and vice versa, this would ensure sufficient results are well articulated and achieved.
- As Banks with limited Capital and insurance companies with lower Premium sell may encounter financial Distress, they may consider proposals for mergers, consolidations, and acquisitions among other similar institution primarily for economies of scale and other valuable reasons.
- Bank and insurance regulator national bank of Ethiopia need to strengthen the monitoring of banks, especially off-site monitoring, as a way to scrutinize the reports submitted regularly by the rural banks and the availability of insurance liquidity risk to consolidating liquidity of asset. This could supplement the spot examinations of banks and insurances which the regulatory government agencies cannot conduct regularly
- Preventing banking and insurance premium insolvency rate to minimize financial distress, it should not be an objective of bank and insurance supervision, although supervision should aim to reduce the probability and impact of corporate failure.
- Thus, the supervisory wing of the NBE and the insurance financial enterprise agency that tasked with ensuring safety and soundness of state owned banks and insurance industries should look after banks and insurance from the broader perspective; i.e., financial distress than only focusing on a dismantled way (like liquidity risk, credit risk).

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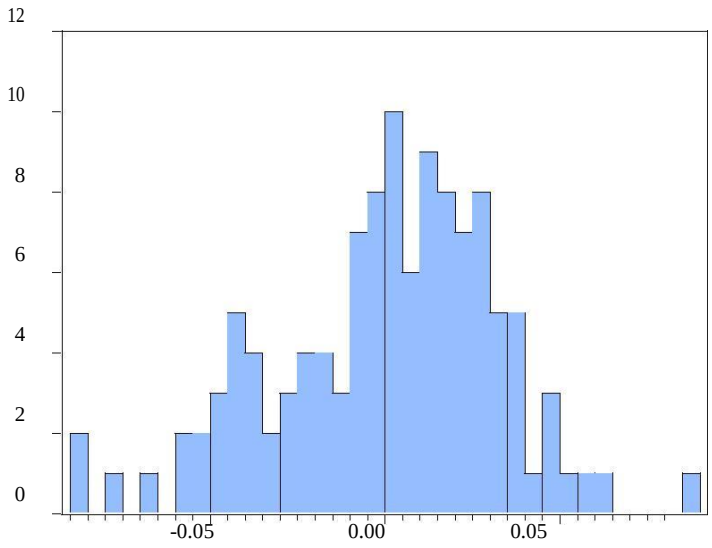
Appendix

Appendix 1: Normality Assumption Test



Series:	Standardized Residuals
Sample:	2013- 2017
observations	65
Mean	-10.67e-18
Median	0.003725
Maximum	0.079914
Minimum	-0.077369
Std. Dev.	0.032121
Skewness	-0.319287
Kurtosis	3.093339
Jarque-Bera	3.667590
Probability	0.184275

*****Source from researcher financial survey data, 2018**

Appendix 2: Heteroskedasticity Assumption test

. log using "F:\2019 ORGANAZTIONAL PROJECT XXX\FINANCIAL DISTRESS IN BANKING & INSURANCE INDUSTR\project xxx2019\Untitled.smcl"

Heteroskedasticity Test: White

F-statistic	0.493021	Prob. F (44,72)	0.9935
Obs*R-squared	27.08928	Prob. Chi-Square(30)	0.9789
Scaled explained SS	21.28082	Prob. Ch-Square(44)	0.9985

. log using "F:\2019 ORGANAZTIONAL PROJECT XXX\FINANCIAL DISTRESS IN BANKING & INSURANCE INDUSTR\project xxx2019\Untitled.smcl"

Series:	Standardized Residuals
Sample:	2013- 2017
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Mean	-10.67e-18
Median	0.003725
Maximum	0.079914
Minimum	-0.077369
Std. Dev.	0.032121
Skewness	-0.319287
Kurtosis	3.093339
Jarque-Bera	3.667590
Probability	0.184275

outcome does IS vary; remember:

0 = negative outcome,

all other non missing values = positive outcome

r(65);

0 = negative outcome,

all other non missing values = positive outcome

r(65);

. estat framework, standardized format(%9.0g)

Appendix 3: **Multicollinearity test**

Liquidity leverage profit~y Effici~y Firm SIZE Econom~h Inflat~R								
----------+----------								
Variable's	z-score	LQ	LV	ROA	EFF	GDP	FS	IR
z-score	1							
Liquidity	-0.26	1						
leverage	0.397	-0.1997	1					
profitability	0.023	-0.0708	-0.1441	1				
Efficiency	-0.29	-0.0061	0.51377	-0.0037	1			
Economic growth	-0.74	0.1674	0.2897	-0.0569	0.26241	1		
Firm SIZE	-0.31	-0.221	0.2638	-0.1127	0.20072	0.3606	1	
Inflation	0.573	0.1404	-0.8298	0.1112	-0.55244	-0.4126	-0.4746	1
spearman zscore Liquidity leverage profitability Efficiency Firm SIZE Economic growth								

Inflation rates IR, stats(rho)(obs=65)

Appendix 4 Summary of Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
zscore	65	3.195422	.6988036	2.3083	6.4517
Liqudity	65	.1748046	.1028228	.0975	.6912
lavearge	65	.6110385	.2396401	.4052	1.8042
profitablity	65	.2216923	.0822475	.0155	.3878
Efficincy	65	.6621646	.1691095	.3968	1.2857
Economicgr~h	65	.1058154	.0089563	.087	.121
FirmSIZE	65	7847.344	5565.911	224	24763.88
Inflationr~R	65	.1897846	.1010975	.077	.364

Appendix 5: Regression Analysis

. log using "F:\2019 ORGANAZTIONAL PROJECT XXX\FINANCIAL DISTRESS IN BANKING & INSURANCE INDUSTR\project xxx2019\Untitled. smcl"

```
-------------------------------------------------------------------------------------------
      name:  <goitom>
       log:  F:\2019 ORGANAZTIONAL PROJECT XXX\FINANCIAL DISTRESS IN BANKING & INSURANCE
INDUSTR\project xxx2019\Untitled.smcl
Iteration 0:   log likelihood =  -264.4037
Iteration 1:   log likelihood = -245.18533
Iteration 2:   log likelihood = -234.78864
Iteration 3:   log likelihood = -232.95364
Iteration 4:   log likelihood = -231.40937
Iteration 5:   log likelihood =  -231.3471
Iteration 6:   log likelihood = -231.34667
Iteration 7:   log likelihood = -231.34667
Ordered logistic regression                     Number of obs   =         65
                                                LR chi2(7)      =      66.11
                                                Prob > chi2     =     0.0000
Log likelihood = -231.34667                     Pseudo R2       =     0.850
------------------------------------------------------------------------------
      zscore |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  Efficincy |  -7.921358    2.31638    -3.42   0.001    -12.46138   -3.381336
FirmSIZE |  -.0000766   .0000678    -1.13   0.259    -.0002095    .0000563
Economicgrowth 51.46556   37.46396     1.37   0.070    -21.96246    124.8936
InflationratesIR |-.8511666   3.303393     0.26   0.097    -5.623364    7.325698
    Liqudity |   49.83421   8.478825     5.88   0.000     33.21602     66.4524
   lavearge |  -3.701903   3.335988    -1.11   0.067    -10.24032    2.836513
profitablity |   8.508325   4.982653     1.71   0.088    -1.257496    18.27415
-------------+----------------------------------------------------------------
       /cut1 |   1.896425   5.752777                -9.378811    13.17166
       /cut2 |    3.00287   5.681853               -8.133356    14.1391
       /cut3 |   3.567163   5.665709                -7.537422    14.67175
       /cut4 |   3.958243   5.659871                -7.134901    15.05139
```

Appendix 6: Raw Data used for Regression

year	z-score 1	LQ	LV	ROA	EFF	FS	GDP	IR
2013	3.2575	1913	.5398	.1875	.6655	9144.54	.099	.135
2014	3.1799	.1975	.541	.1638	.6825	10747.28	.103	.081
2015	3.0098	.1814	.6353	.1628	.7053	13256.12	.102	.077
2016	6.4517	.6912	1.8042	.0358	1.2857	224	.115	.106
2017	4.2089	4012	.8824	.019	.852	424	.118	.158
2013	3.6927	.2691	.6546	.0845	.6498	678.2	.112	.253
2014	2.5267	.1838	.9356	.0155	.7454	1022.88	.121	.364
2015	3.0038	.1354	.7187	.1453	.5128	1768.32	.106	.284
2016	3.3089	.1152	.6451	.2174	.3968	2500.59	.114	.181
2017	3.1184	.1352	.5402	.3077	.4874	3670.73	.087	.341
2013	3.2213	.1363	.4773	.3674	.4658	6538.72	.099	.135
2014	3.2945	.157	.4614	.3842	.6686	7351.13	.103	.081
2015	2.3695	.15	.6077	.2498	.8912	11462.06	.102	.077
2016	3.2575	.1913	.5398	.1875	.6655	9144.54	.099	.135
2017	3.1799	.1975	.541	.1638	.6825	10747.28	.103	.081
2013	3.0098	.1814	.6353	.1628	.7053	13256.12	.102	.077
2014	6.4517	.6912	1.8042	.0358	1.2857	22400	.115	.106
2015	2.9652	.1252	.6168	.2641	.572	24763.88	.102	.077
2016	2.5476	.1174	.5132	.2932	.6934	2954	.115	.106
2017	2.8184	.1278	.4052	.3878	.7722	3830	.118	.158
2013	2.8058	.1381	.5177	.2771	.6747	4820.22	.112	.253
2014	2.9752	.1334	.5759	.2123	.5166	6422.55	.1	.364
2015	2.9925	.1309	.4891	.2929	.4909	7944.78	.106	.28
2016	3.1039	.148	.4555	.3168	.4961	10115.78	.114	.181
2017	2.7884	.142	.5223	.2641	.5819	13125.22	.087	.341
2013	2.5889	.1337	.562	.2731	.6004	17783.93	.099	.135
2014	2.6395	.1336	.5687	.2692	.5963	20028.79	.103	.081
2015	2.9652	.1408	.6257	.2298	.6622	23869.61	.102	.077
2016	2.8855	.1644	.4455	.2591	.8737	2834	.115	.106
2017	2.4791	.1294	.6442	.1665	.8074	3396	.118	.158
2013	2.3083	.1095	.9369	.0354	.738	4269.94	.112	.253
2014	2.8809	.1065	.6406	.214	.5435	5476.62	.1	.364
2015	2.6322	.0996	.5813	.2545	.5682	6279.54	.106	.28
2016	2.7993	.0975	.5819	.2904	.5276	7277.96	.114	.181
2017	2.8372	.1168	.6009	.276	.5608	8239.51	.087	.341
2013	2.8678	.1206	.6009	.2148	.5424	10129.37	.099	.135
2014	2.7324	.1429	.653	.2088	.5564	11276.39	.103	.081
2015	2.7699	.1452	.6902	.1747	.5311	13667.55	.102	.077
2016	3.1537	.1316	.5727	.3264	.8526	2259	.115	.106
2017	3.1699	.1404	.5219	.3404	.7564	3480	.118	.158
2013	3.4405	.1592	.5584	.2754	.7443	4124.89	.112	.253
2014	3.7938	.181	.4576	.2506	.5321	5118.31	.1	.364
2015	3.7545	.1937	.4383	.2366	.6056	5741.93	.106	.28
2016	3.5349	.1938	.4378	.2706	.4663	8061.05	.114	.181
2017	3.1493	.1955	.461	.2286	.6042	8347.15	.087	.341

2013	2.724	.1953	.5238	.1999	.6072	10393.8	.099	.135
2014	3.0238	.1982	.6255	.1534	.54	11242.58	.103	.081
2015	2.9412	.1935	.6588	.1546	.6151	13711.36	.102	.077
2016	3.2442	.143	.5238	.2785	.7992	1599	.115	.106
2017	3.2597	.1904	.5469	.2323	.8874	2182.5	.118	.158
2013	3.2327	.1722	.55	.22	.7407	3249.96	.112	.253
2014	3.0403	.1316	.6128	.1895	.5769	4651.7	.1	.364
2015	3.315	.1209	.515	.3014	.533	5896.23	.106	.28
2016	3.3902	.1323	.4885	.3013	.5253	7725.62	.114	.181
2017	2.3732	.1334	.5112	.2974	.5905	8786.86	.087	.341
2013	3.1714	.128	.6624	.1856	.5734	9977.67	.099	.135
2014	3.7509	.1442	.7072	.1428	.5611	11876.37	.103	.081
2015	3.6949	.1285	.7314	.1725	.574	14360.87	.102	.077
2016	3.0075	.1516	.4969	.2279	.9766	2027	.115	.106
2017	3.0917	.1834	.4904	.2141	.934	2607	.118	.158
2013	3.364	.1912	.4985	.221	.8234	3650.11	.112	.253
2014	3.4596	.1724	.4851	.2316	.6425	4806.5	.1	.364
2015	3.555	.1701	.4874	.2442	.5929	5970.51	.106	.28
2016	3.7921	.179	.476	.2361	.5143	7111.52	.114	.181
2017	3.3487	.1986	.4871	.2121	.6181	8275.7	.087	.341

Import excel "F:\ 2019 January ORGANAZTIONAL PROJECT XXX\FINANCIAL DISTRESS IN BANKING & INSURANCE INDUSTR\project xxx2019\Book1 extracted datata.xlsx", sh> eet("Sheet1") AC. Autocorrelation test. genx = invnorm(uniform ()) . gent = _n . to set time variable: t, 1 to 58 . corrgramx, lags(58)

		-1	0	1 -1	0	1
LAG	AC	PAC	Q	Prob>Q	[Autocorrelation]	[Partial Autocor]
1	-0.1283	-0.1344	1.696	0.1928	-|	-|
2	0.0062	-0.0149	1.6999	0.4274	|	|
3	-0.2037	-0.2221	6.0617	0.1086	-|	-|
4	0.1918	0.1530	9.9683	0.0410	|-	|-
5	-0.0011	0.0457	9.9684	0.0761	|	|
6	-0.0241	-0.0654	10.032	0.1233	|	|
7	-0.0075	0.0611	10.038	0.1864	|	|
8	-0.2520	-0.3541	17.078	0.0293	--|	--|
9	-0.0811	-0.2097	17.816	0.0374	|	-|
10	-0.1278	-0.2059	19.668	0.0326	-|	-|
11	0.1561	-0.0530	22.462	0.0210	|-	|
12	-0.1149	-0.0402	23.992	0.0204	|	|
13	0.1168	0.1419	25.591	0.0193	|	|-
14	-0.1012	-0.0374	26.806	0.0204	|	|
15	0.0400	-0.0971	26.998	0.0288	|	|
16	0.0611	0.0639	27.451	0.0367	|	|
17	0.0947	-0.1022	28.552	0.0389	|	|
18	-0.0296	-0.1728	28.661	0.0527	|	-|
19	-0.0997	-0.0916	29.914	0.0529	|	|
20	0.0311	-0.0789	30.037	0.0693	|	|
21	0.5425	0.5426	12.679	0.0004	|----	|----
22	0.0719	-0.3189	12.908	0.0016	|	--|
23	-0.1621	-0.0597	14.102	0.0028	-|	|
24	-0.1643	0.0100	15.362	0.0040	-|	|
25	-0.1770	-0.1686	16.865	0.0048	-|	-|
26	-0.1978	-0.0910	18.799	0.0045	-|	|
27	-0.2724	-0.2192	22.575	0.0020	--|	-|
28	-0.0849	0.2005	22.953	0.0034	|	|-
29	0.1509	0.0509	24.187	0.0040	|-	|
30	0.1549	-0.1693	25.531	0.0044	|-	-|
31	-0.0164	-0.1411	25.547	0.0076	|	-|
32	-0.1315	-0.0853	26.584	0.0089	-|	|
33	-0.0708	0.1423	26.896	0.0129	|	|-

34	-0.0276	-0.2305	26.945	0.0196	|	-|
35	0.0109	0.1018	26.953	0.0291	|	|
36	0.0081	0.0870	26.958	0.0420	|	|
37	-0.0126	-0.2767	26.969	0.0585	|	--|
38	-0.0420	-0.2606	27.104	0.0771	|	--|
39	0.4525	0.4645	22.732	0.0000	|---	|---
40	0.1334	-0.0976	24.727	0.0000	|-	|
41	0.0911	0.0830	25.667	0.0000	|	|
42	0.1759	0.1451	29.203	0.0000	|-	|-
43	0.0815	-0.0703	29.969	0.0000	|	|
44	0.1122	0.1292	31.435	0.0000	|	|-
45	-0.0288	-0.1874	31.533	0.0000	|	-|
46	-0.0057	0.0958	31.537	0.0001	|	|
47	-0.0247	-0.0802	31.61	0.0002	|	|
48	0.0564	0.1007	31.996	0.0004	|	|
49	-0.0253	-0.0973	32.075	0.0007	|	|
50	-0.0678	-0.0662	32.643	0.0011	|	|
51	-0.0635	0.0358	33.147	0.0016	|	|
52	0.0243	0.0037	33.222	0.0027	|	|
53	-0.0583	-0.1159	33.656	0.0038	|	|
54	-0.0759	0.0009	34.399	0.0048	|	|
55	-0.0561	-0.0180	34.81	0.0066	|	|
56	-0.0114	0.0252	34.827	0.0099	|	|
57	-0.0202	-0.0007	34.882	0.0144	|	|
58	0.0437	0.0910	35.139	0.0194	|	|

Table 3.AC. Autocorrelation test

Variables	DW Test Statistics Result
All Specific And Macroeconomic Factors	1.71

*****Source from researcher field survey,2019

Institutions	year	z-score	Liquidity	leverage	profitability	Efficiency	Firm SIZE	Economic growth	Inflation rates (IR)
CBE	2013	3.2575	0.1913	0.5398	0.1875	0.6655	9,144.54	0.099	0.135
CBE	2014	3.1799	0.1975	0.541	0.1638	0.6825	10,747.28	0.103	0.081
CBE	2015	3.0098	0.1814	0.6353	0.1628	0.7053	13,256.12	0.102	0.077
CBE	2016	6.4517	0.6912	1.8042	0.0358	1.2857	224	0.115	0.106
CBE	2017	4.2089	0.4012	0.8824	0.019	0.852	424	0.118	0.158
DBE	2013	3.6927	0.2691	0.6546	0.0845	0.6498	678.2	0.112	0.253
DBE	2014	2.5267	0.1838	0.9356	0.0155	0.7454	1,022.88	0.121	0.364
DBE	2015	3.0038	0.1354	0.7187	0.1453	0.5128	1,768.32	0.106	0.284
DBE	2016	3.3089	0.1152	0.6451	0.2174	0.3968	2,500.59	0.114	0.181
DBE	2017	3.1184	0.1352	0.5402	0.3077	0.4874	3,670.73	0.087	0.341
ABE	2013	3.2213	0.1363	0.4773	0.3674	0.4658	6,538.72	0.099	0.135
ABE	2014	3.2945	0.157	0.4614	0.3842	0.6686	7,351.13	0.103	0.081
ABE	2015	2.3695	0.15	0.6077	0.2498	0.8912	11,462.06	0.102	0.077
ABE	2016	3.2575	0.1913	0.5398	0.1875	0.6655	9,144.54	0.099	0.135
ABE	2017	3.1799	0.1975	0.541	0.1638	0.6825	10,747.28	0.103	0.081
Ethiopian Insurance Corporation General	2013	3.0098	0.1814	0.6353	0.1628	0.7053	13,256.12	0.102	0.077
Ethiopian Insurance Corporation General	2014	6.4517	0.6912	1.8042	0.0358	1.2857	22,400.00	0.115	0.106
Ethiopian Insurance Corporation General	2015	2.9652	0.1252	0.6168	0.2641	0.572	24,763.88	0.102	0.077
Ethiopian Insurance Corporation General	2016	2.5476	0.1174	0.5132	0.2932	0.6934	2,954.00	0.115	0.106
Ethiopian Insurance Corporation General	2017	2.8184	0.1278	0.4052	0.3878	0.7722	3,830.00	0.118	0.158
National Insurance Company of Ethiopia S.C	2013	2.8058	0.1381	0.5177	0.2771	0.6747	4,820.22	0.112	0.253
National Insurance Company of Ethiopia S.C	2014	2.9752	0.1334	0.5759	0.2123	0.5166	6,422.55	0.1	0.364
National Insurance Company of Ethiopia S.C	2015	2.9925	0.1309	0.4891	0.2929	0.4909	7,944.78	0.106	0.28
National Insurance Company of Ethiopia S.C	2016	3.1039	0.148	0.4555	0.3168	0.4961	10,115.78	0.114	0.181
National Insurance Company of Ethiopia S.C	2017	2.7884	0.142	0.5223	0.2641	0.5819	13,125.22	0.087	0.341
Awash	2013	2.5889	0.1337	0.562	0.2731	0.6004	17,783.93	0.099	0.135

Insurance Company S.C									
Awash Insurance Company S.C	2014	2.6395	0.1336	0.5687	0.2692	0.5963	20,028.79	0.103	0.081
Awash Insurance Company S.C	2015	2.9652	0.1408	0.6257	0.2298	0.6622	23,869.61	0.102	0.077
Awash Insurance Company S.C	2016	2.8855	0.1644	0.4455	0.2591	0.8737	2,834.00	0.115	0.106
Awash Insurance Company S.C	2017	2.4791	0.1294	0.6442	0.1665	0.8074	3,396.00	0.118	0.158
Africa Insurance Company S.C	2013	2.3083	0.1095	0.9369	0.0354	0.738	4,269.94	0.112	0.253
Africa Insurance Company S.C	2014	2.8809	0.1065	0.6406	0.214	0.5435	5,476.62	0.1	0.364
Africa Insurance Company S.C	2015	2.6322	0.0996	0.5813	0.2545	0.5682	6,279.54	0.106	0.28
Africa Insurance Company S.C	2016	2.7993	0.0975	0.5819	0.2904	0.5276	7,277.96	0.114	0.181
Africa Insurance Company S.C	2017	2.8372	0.1168	0.6009	0.276	0.5608	8,239.51	0.087	0.341
Nyala Insurance Company S.C	2013	2.8678	0.1206	0.6009	0.2148	0.5424	10,129.37	0.099	0.135
Nyala Insurance Company S.C	2014	2.7324	0.1429	0.653	0.2088	0.5564	11,276.39	0.103	0.081
Nyala Insurance Company S.C	2015	2.7699	0.1452	0.6902	0.1747	0.5311	13,667.55	0.102	0.077
Nyala Insurance Company S.C	2016	3.1537	0.1316	0.5727	0.3264	0.8526	2,259.00	0.115	0.106
Nyala Insurance Company S.C	2017	3.1699	0.1404	0.5219	0.3404	0.7564	3,480.00	0.118	0.158
Nile Insurance Company S.C	2013	3.4405	0.1592	0.5584	0.2754	0.7443	4,124.89	0.112	0.253
Nile Insurance Company S.C	2014	3.7938	0.181	0.4576	0.2506	0.5321	5,118.31	0.1	0.364
Nile Insurance Company S.C	2015	3.7545	0.1937	0.4383	0.2366	0.6056	5,741.93	0.106	0.28
Nile Insurance Company S.C	2016	3.5349	0.1938	0.4378	0.2706	0.4663	8,061.05	0.114	0.181
Nile Insurance Company S.C	2017	3.1493	0.1955	0.461	0.2286	0.6042	8,347.15	0.087	0.341
Nile Insurance Company S.C	2013	2.724	0.1953	0.5238	0.1999	0.6072	10,393.80	0.099	0.135
Nile Insurance Company S.C	2014	3.0238	0.1982	0.6255	0.1534	0.54	11,242.58	0.103	0.081

Nile Insurance Company S.C	2015	2.9412	0.1935	0.6588	0.1546	0.6151	13,711.36	0.102	0.077
Nile Insurance Company S.C	2016	3.2442	0.143	0.5238	0.2785	0.7992	1,599.00	0.115	0.106
Nile Insurance Company S.C	2017	3.2597	0.1904	0.5469	0.2323	0.8874	2,182.50	0.118	0.158
The United Insurance S.C	2013	3.2327	0.1722	0.55	0.22	0.7407	3,249.96	0.112	0.253
The United Insurance S.C	2014	3.0403	0.1316	0.6128	0.1895	0.5769	4,651.70	0.1	0.364
The United Insurance S.C	2015	3.315	0.1209	0.515	0.3014	0.533	5,896.23	0.106	0.28
The United Insurance S.C	2016	3.3902	0.1323	0.4885	0.3013	0.5253	7,725.62	0.114	0.181
The United Insurance S.C	2017	2.3732	0.1334	0.5112	0.2974	0.5905	8,786.86	0.087	0.341
NIB Insurance Company	2013	3.1714	0.128	0.6624	0.1856	0.5734	9,977.67	0.099	0.135
NIB Insurance Company	2014	3.7509	0.1442	0.7072	0.1428	0.5611	11,876.37	0.103	0.081
NIB Insurance Company	2015	3.6949	0.1285	0.7314	0.1725	0.574	14,360.87	0.102	0.077
NIB Insurance Company	2016	3.0075	0.1516	0.4969	0.2279	0.9766	2,027.00	0.115	0.106
NIB Insurance Company	2017	3.0917	0.1834	0.4904	0.2141	0.934	2,607.00	0.118	0.158
Lion Insurance Company S.C	2013	3.364	0.1912	0.4985	0.221	0.8234	3,650.11	0.112	0.253
Lion Insurance Company S.C	2014	3.4596	0.1724	0.4851	0.2316	0.6425	4,806.50	0.1	0.364
Lion Insurance Company S.C	2015	3.555	0.1701	0.4874	0.2442	0.5929	5,970.51	0.106	0.28
Lion Insurance Company S.C	2016	3.7921	0.179	0.476	0.2361	0.5143	7,111.52	0.114	0.181
Lion Insurance Company S.C	2017	3.3487	0.1986	0.4871	0.2121	0.6181	8,275.70	0.087	0.341