Determinants of Financial Distress in Ethiopia Banking Sector

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Abstract- This study was conducted with the aim of finding the determinants of financial distress in the Ethiopia banking sector. The study mainly employed a quantitative research approach from 2012-2016 using sample data of 15 banks. To comply with the research objectives, the researcher used secondary sources of data. To measure the effect of determinants on financial distress multiple regression analysis would be adopted. The finding shows that Profitability and liquidity have a positive and significant influence on Debt Service Coverage. On the other hand, average inflation, solvability, and firm size have a negative and significant impact on Debt Service Coverage. Therefore, it concluded that micro and macro factors extracted from variables significantly correlated and have even better ability to determine financial distress of Ethiopia banking sector.

Index Terms- Financial distress, regression analysis, Debt service coverage

I. INTRODUCTION

Banking sectors are the backbone of Ethiopia economy. It is one of the important financial pillars in the financial institution that caters necessary financial inputs to produce goods and services which in turn promotes the well-being and standard of living for the people. It plays a crucial role in the development and promotion of the economy and allows the transfer of resource from savers to investors. The problem of financial distress in the banking industry has been of huge concern to all stakeholders of the economy and the world business community at large. Therefore, the issue of financial distress is critical in the area of banking sectors more than other sectors. If the banking sector of a given country faces financial crisis, chances are high that it would lead to general economic crises (Demiguc and Detraigaialche, 1998).

Beaver (1966) was one of the first researchers to point out that financial distress can have different forms of appearance. He defined financial distress as "the incapability of a firm to pay its financial liabilities on time." Foster (1986) indicates that filing for bankruptcy is a legal event which is heavily influenced by the actions of bankers and other creditors. Andrade and Kaplan (1998) described financial distress as the situation when a company is not capable to pay its liabilities to the third parties or condition whereby a firm does not meet creditor obligations.

According to Altman (2006) firm is financially distressed if it faces four problems (failure, insolvency, default, and bankruptcy). Banks or financial institution will be considered failed when the government agency or central bank recapitalized the financial institution or when the financial institution required a liquidity injection from the monetary authority; when the operation of the financial institution is temporarily suspended; or when the government closed the financial institution Arena (2008). Also, financial distress is a circumstance when an organization can't keep on existing in its present frame due to lack of sufficient cash Muleret et al. (2009) and a situation in which an institution is having operational, managerial and financial difficulties Adeyemi (2011).

In a general sense, financial distress could be understood as a negative connotation to describe the financial situation of a company confronted with a temporary lack of liquidity and difficulties. Creditor and debtor are the two parties always involved in financial distress. These can include stakeholders, employees, supplier, and providers of external capital. (Hui, H. and Jhao J., 2008).

Most of the former studies of financial distress on the banking sector were focus on financial health conditions and predicted determinants of financial distress of the selected private commercial banks. On the other hand other researchers focus on the causes of financial distress and its effects, the relationship between financial distress and firm performance, Financial Distress and Bankruptcy and other related areas (Ebiringa et al., 2011), (Memba, F. and Nyanumba, J.A., 2013) , (Tan, T.K., 2012,) ,(Ephrem. G., 2015), and (Pranowo .K, et al., 2010).

In their previous studies, different authors point different variables as the determinants of firm financial distress. For instance, Pranowo, et al. 2010 classify determinant of financial distress into eight Categories in an emerging market economy: liquidity, leverage, profitability, solvability, efficiency, Good Corporate Governance, Macro Economy and status of financial condition and qualitatively analyzed the data. Additionally, the only study conducted in Ethiopia regarding this issue has done by Ephrem. G (2015) who tried to analyze the Determinants of Financial Distress Conditions on selected private commercial banks by considering non performing loan ratio, Capital adequacy, the ratio of interest income to total revenue, Efficiency, and Size. However, in his study, he used only six selected private commercial banks as sample size and data of one year only (2012/2013). That means the area the researcher tested also specific and it was used limited samples. Thus, to fulfill this gap the researcher used more recent data 2012-2016 (data of five years), the sample size was used more than previous and both government and private commercial banks to create the main understanding for management of banks on the issue and to

contribute the body of knowledge in a way that it adds value to the theory of financial distress. The previous study also did not indicate macroeconomic determinants of the financial distress in the banking sector of Ethiopia. The objective of the research is to determine the determinants of financial distress by combining both microeconomic and macroeconomic determinants of Financial Distress in the Ethiopian banking sector.

The next part of the study is structured and organized as follows. Section two is discussed the background of Ethiopia banking industry followed by literature review, research methodology, framework, analysis, and finding and recommendation respectively. A final part of the paper present conclusion, limitation, and future direction.

II. Background of Ethiopia banking sector

In the modern economy, the banking sector is considered as the lifeline and play a vital role in the failure or success of economy. It is one of the important financial pillars in the financial institution as the particular and financial system as a whole. A sound banking system efficiently deposits and mobilize saving, deploys and disbursement of credit to various productive sectors to ensure and maintain the economic development of the country. It accepts a deposit from the public for lending or investment which is repayable on demand or otherwise, withdrawable by the means of any instrument whether a cheque or other instrument such as ATM. The banking sector also provides ancillary service such as transfer of funds, a collection of money from the customer, foreign exchange, safe deposit, and merchant banking.

Banking in Ethiopia originated in the first decade of the 19th century with the bank of Abyssinia coming into existence in 1905 based on the agreement signed between National Bank of Egypt and Ethiopia Government. In 1932 Emperor Haile Selassie, closed the Bank of Abyssinia, paid compensation to its shareholders and established the Bank of Ethiopia, which was fully owned by Ethiopians, with a capital of pound Sterling 750,000. From 1936-1941 the operation of Bank of Ethiopia came to a halt, and a number of Italian financial institutions were working in the country. These were Banco Di Roma, Banco Di Napoli, and Banca Nazionale del Lavoro. Agricultural Bank established in 1945 and replaced by the Development Bank of Ethiopia in 1951 and changed into the Agricultural and Industrial Development Bank in 1970.

With the purpose of segregating the functions of central banking from those of commercial banking state bank of Ethiopia divided into the National Bank of Ethiopia and the Commercial Bank of Ethiopia in 1963. In 1974, with falling of Emperor Haile Selassie and coming of Dergue regime on January 1, 1975, all private banks and 13 insurance companies were nationalized and placed under the control of National Bank of Ethiopia.

Thus, from 1975 to 1994 there were four state-owned banks and one state-owned insurance company, i.e., the National Bank of Ethiopia (The Central Bank), the Commercial Bank of Ethiopia, the Housing and Savings Bank, the Development Bank of Ethiopia and the Ethiopia Insurance Corporation. After the overthrow of the Dergue regime by the EPRDF, Several private companies were formed during the early 1990s, one of which is Oda S.C. (**http://www.abyssinialaw.com**)

Nowadays Ethiopia banking sector consists of a central bank (The National Bank of Ethiopia or NBE), two government-owned banks (Development Bank of Ethiopia and Commercial Bank of Ethiopia) and sixteen private banks (Awash International Bank, Bank of Abyssinia, Wegagen Bank, United Bank, Nib International Bank, Dashen Bank, Cooperative Bank of Oromia(s.c.), Lion International Bank, Oromia International Bank, Bunna International Bank, Zemen Bank, Berhan International Bank, Abay Bank S.C., Addis International Bank, Debub Global Bank and Enat Bank. Based on the most recent data, Commercial Bank of Ethiopia dominates the market in terms of branches, total banking workforce, assets, and deposits. (**https://www.export.gov**).

Literature Review

This section of study present relevant literature to the study and classify them under four section. Namely determinants of financial distress, measurement(proxy) for financial distress, and empirical studies in global and Ethiopia context.

III. Determinants of financial distress

Firm's liquidity is the ability of an asset to be converted to cash quickly at low cost. Brealey et.al. (2000) suggests that Liquid assets can be converted into cash quickly and cheaply. Liquidity refers to the solvency and ability the firm's to pay short-term liabilities as they come due. 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 Gitman (1991).

Leverage represented a risk to the firm, which covers the portion of the fixed costs. Operating leverage refers to fixed operating cost and measure of operating risk found in the firm's income statement, whereas financial leverage is a measure of financial risk and financing a portion of the firm's assets to rising and grow the return to the common stockholders. According to Shim and Siegel (1998) the higher the financial leverage, the higher the financial risk, and the higher the cost of capital

The firm's Profitability ratios are used to measure the firm's return on its investments Brealey et.al (2000). The research conducted on financially distressed firm suggests staking actions of adjusting the business to increase profitability (Chang-e 2006). There were some researchers such as Hotchkiss (1995) who explored the achievement of bankrupt reorganization firms in US of America and focus on profitability. Financial distress plays a great 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 i.e., indirect financial distress costs for example, (Betker, 1997) and (Beaver, 1966).

Solvability is the condition of being solvent; the ability to pay all just debts. In other way is defined as whether something can be resolved and the degree of ease with which it can be resolved. The researcher used equity to total assets in order to see the sensitive to the probability of financial distress (Hotchkiss, 1995). Size is also another determinant of financial distress. The researcher also includes the natural logarithm of total assets, since the size of total assets should be sensitive to the probability of financial distress (Hotchkiss, 1995).

According to Brealey et al. (2000) Firm's Efficiency or turnover ratios measure how productively the firm is using its assets. The firm efficiency is measured in terms of its asset turnover, average collection period and average payment period. These variables indicate the firm's success as well as the speed of turning over its assets within the year, which determines the firm's financial distress.

GDP is measured by the real GDP growth rate and it is hypothesized to affect the banking sector' financial distress in both said mean negatively or positively. This is because the default risk is lower in upturn than in downturn economy (Kevin et al, 2001). High inflation rate is related to higher income as well as higher costs. If a banking sector income rises more rapidly than its costs, inflation is expected to exert a positive effect on financial distress. On the other hand, a negative coefficient is expected when its costs increase faster than its income (Kevin et al, 2001).

Measurement (Proxy) For Financial Distress

According to Lico Junior (2000), debt-service coverage ratio is defined as earnings before interest and income taxes plus one-third rental charges, divided by interest expense plus one-third rental charges plus the amount of principal payback divided by one minus the tax rate. The debt service is interest payment plus repayments of principal to creditors, that is, the retirement of debt. The fixed-payment coverage ratio measures the firm's capacity to meet all fixed payment obligations, such as loan interest and principal, lease payments, and preferred stock dividends. Gitman (1991). The extent of financial distress of a company is determined by the capability to service its debts and rate the commercial debts on the basis of their own credit rating models, e.g. along the recent Basel accords Gruszczynski (2004)

Empirical Literature in Global Context

Financial distress literature specific to the banking sector is limited in number when compared to that of non-financial institutions using bank-level data and aggregate for several countries. Demiguc and Detraigaialche (1998), studied on the banking crisis and they found that growth of both deposits and credit decelerate substantially and the recent crises are not accompanied by fall in whole bank deposits and credit does not decline relative to output.

Carpeto, et al. (2010) examined the power of ten different accounting measures using banks which participated in merger and acquisitions or divestiture deals over the 22 years for a sample of 1,175 banks. The result of the study shown that, a bank should be defined as distressed if the ratio of its non- performing loans to total loans is in the two-maximum fall of the industry, using a three-year moving average.

Pranowo, Koes, et al (2010) conducted research on the determinant of corporate financial distress in an emerging market economy empirical evidence from the Indonesian stock exchange 2004-2008. The results of the study were shown that current ratio (CR), efficiency (Eff), equity (EQ) and dummy variable of the status good financial condition (D3) have positive and significant influences to Debt Service Coverage (DSC) as a proxy of financial distress. On the other hand, leverage (Lev) has a negative and significant relation with DSC. Other variables such as profit, retain earnings (RE), good corporate governance (GCG) and

macroeconomic factor have no significant impact on the status of corporate financial distress.

Nkusu and Muleisen (2011) analyze the link between nonperforming loans (NPL) and macroeconomic performance using two complementary approaches. They suggest that a sharp increase in NPL triggers long lived tailwinds that cripple macroeconomic performance from several fronts.

Tan, T.K. (2012) conducted his study between financial distress and firm performance using a sample of 277 from eight East Asian economies during the Asian financial crisis of 1997-1998. The results from this study reveal that firms with high financial leverage tend to perform worse than firms with low financial leverage. That means high-leverage firms experience worse performance during a crisis.

Empirical literature in Ethiopia context

Andualem (2011) conducted a research on the determinants of financial distress of selected firms in the beverage and metal industry of Ethiopia. In this study, the researcher includes the determinants of financial distress using panel data starting from 1999 to 2005. He used samples of 68 companies selected out of 116 share companies in the beverage and metal industry of Ethiopia. The results show that firm age, liquidity, profitability, and efficiency have positive and significant influences on DSC as a proxy of financial distress.

Deepak Kapur and Abebaw Kassie Gualu (2012) examined the relationship of determining the different attributions of the performance measures of Ethiopia commercial banks in their ownership patterns using financial statements of public and private commercial banks in Ethiopia from 2001 to 2008. They indicated that the effectiveness in the utilization of assets and the ability to generating profits from interest earning investments were better in private sectors as compared to public sector banks. Thus, the profitability of overall operations and the bank's interest-earning business was better in private sector banks as compared to public sector banks. That means, ownership structure had an important impact on the profitability of commercial banks in Ethiopia.

Habtamu .B (2013) investigated the financial performance of the Ethiopia Banking sector using the panel data set for the period 2004/05 – 2009/10. The financial performance of the Ethiopia Banks has been evaluated using the volume of deposit, bank assets, ROE, ROA, and loan-deposit ratio /LDR/. The result of the study indicates the Ethiopia banking sector in general, as measured by volume of deposits, granting of a loan and possession of assets has also shown a persistent increase throughout the study periods..

Yohannes T., (2014), conducted a research on determinants of financial distress in the case of Manufacturing Share Companies in Addis Ababa. The result of the study reveals that liquidity, firm size, solvability, leverage, and economic growth are more important determinants of financial distress in manufacturing share companies Addis Ababa-Ethiopia whereas DSC has statistically insignificant relationship with, efficiency, profitability, and inflation.

IV. DATA AND METHODOLOGY

Data source and sample selection

The study intends to determine the determinants of financial distress in the Ethiopia banking industry. Thus, based on the nature of the research problem and the research perspective, this study was mainly employed quantitative research approach from 2012-2016. To comply with the research objectives, the researcher was used secondary sources of data. The secondary data was collected from the National Bank of Ethiopia. It has obtained from annual reports financial statements and website of different banks. This is due to different reasons, firstly it has higher quality in terms of relevance and free from researcher bias, secondly, it has advantage of permanence of data which means a secondary source of data is both permanent and available in a form that may be checked relatively easily by others, thus it will enhance the reliability of data (Kamins and Stewart, 1993 as cited by Yuqi Li 2007). Taking research needs and the compatibility of data into account, the researcher selected the sample data according to the following criteria: excluding those banks establish after 2012 because the researcher needs an annual report and financial statement of five years. The analysis was based on consolidated data from the 2012-2016 financial statements and annual reports of 15 different banks in Ethiopia.

Analysis tools and estimating Methodology

To describe the existing phenomena related to factors that determine financial distress in the Ethiopia banking sector, the researcher was used descriptive research design. To measure the effect of determinants on financial distress multiple regression analysis would be adopted. Multiple regression is further used to test the associative relationships between variables in terms of the relative importance of the independent variables and predicted values of the dependent variables. Correlation analysis is among the ways into which data have been analyzed to observe the relationship between the variables.

In the assumption of regression model there is no pattern in the errors or disturbance terms which is called autocorrelation. To detect the autocorrelation problem Durbin Watson (DW) test has been used. The result of Durbin Waston test revealed in table 3 imply that there is no evidence for the existence of autocorrelation between error terms. On the other hand, residual diagnostic test was conducted to check normality of data using graphical methods whether disturbance terms was normally distributed or not. The visual result of the normality test in figure 1 below showed that the data were approximately normally distributed. For estimation and selection of modeling between random and fixed effect model Hausman test has been conducted. Based on the result of the Hausman test displayed in table 3 the study used a fixed effect model to estimate the models.

Figure 1. The Normal p-p plot of regression standardized residual
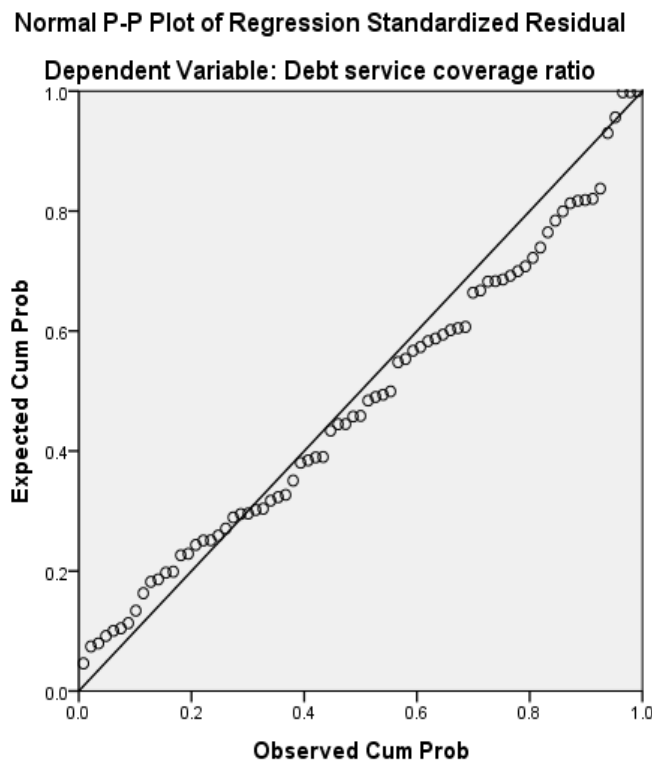
Specification of the model

Debt service coverage ratio can be determined by different variables. In literature, various variables are explained as determinants of financial distress. The present study is conducted to examine and investigate the micro and macro determinant of financial distress in Ethiopia banking industry. The variable included in the research are Liquidity, Leverage, profitability, solvability, size, efficiency, inflation, and gross domestic product. A study used Panel data multiple regression analysis (PDMRA) with Fixed Effect Model to find the relationship between the

explanatory variables and firms financial distress. Based on a model developed by **Pranowo (2010),** the researcher examined, developed, and reformulated the following model for the study.

$$DSCR=\beta_0+\beta_1 Liq+\beta_2 Lev+\beta_3 Pro+\beta_4 Solv+\beta_5 SI+\beta_6 Eff+\beta_7 AINF+\beta_8 GDP+\in \ldots\ldots\ldots\ldots\ (eq3.1)$$

In this, model the debt service coverage ratio has been measured with operating income to installment plus interest payment. The above model is applied to reveal the impact of micro and macro determinants on a debt service coverage ratio which is used as a proxy of financial distress. β_0 in the model represents the constant value of beta, β_1, β_2, β_3, …….β_8 are coefficient of variables and $\in$ portray error terms. The dependent variable is Debt service coverage ratio which measured by EBIT(operating income) divided by installment plus interest payment. Table explain full information on measurement of variables.

Table 1: Description of variables

Variable	Measurement	Notation
Debt service coverage ratio	Operating income /installment + interest payment	DSCR
Liquidity	Current asset /current liabilities	Liq
Leverage	Total asset /Total liabilities	Lev
Profitability	Net income /Average total asset	Pro
Solvability	Equity /Total asset	Solv
Size	logarithm of total asset	SI
Efficiency	Earnings before Interest and Tax / total asset	Eff
Inflation	Average inflation	AINF
Gross domestic product	Gross domestic product growth rate	GDP

V. RESEARCH FRAMEWORK

The research framework for the study is as follows:
Figure 1. The framework of the analysis
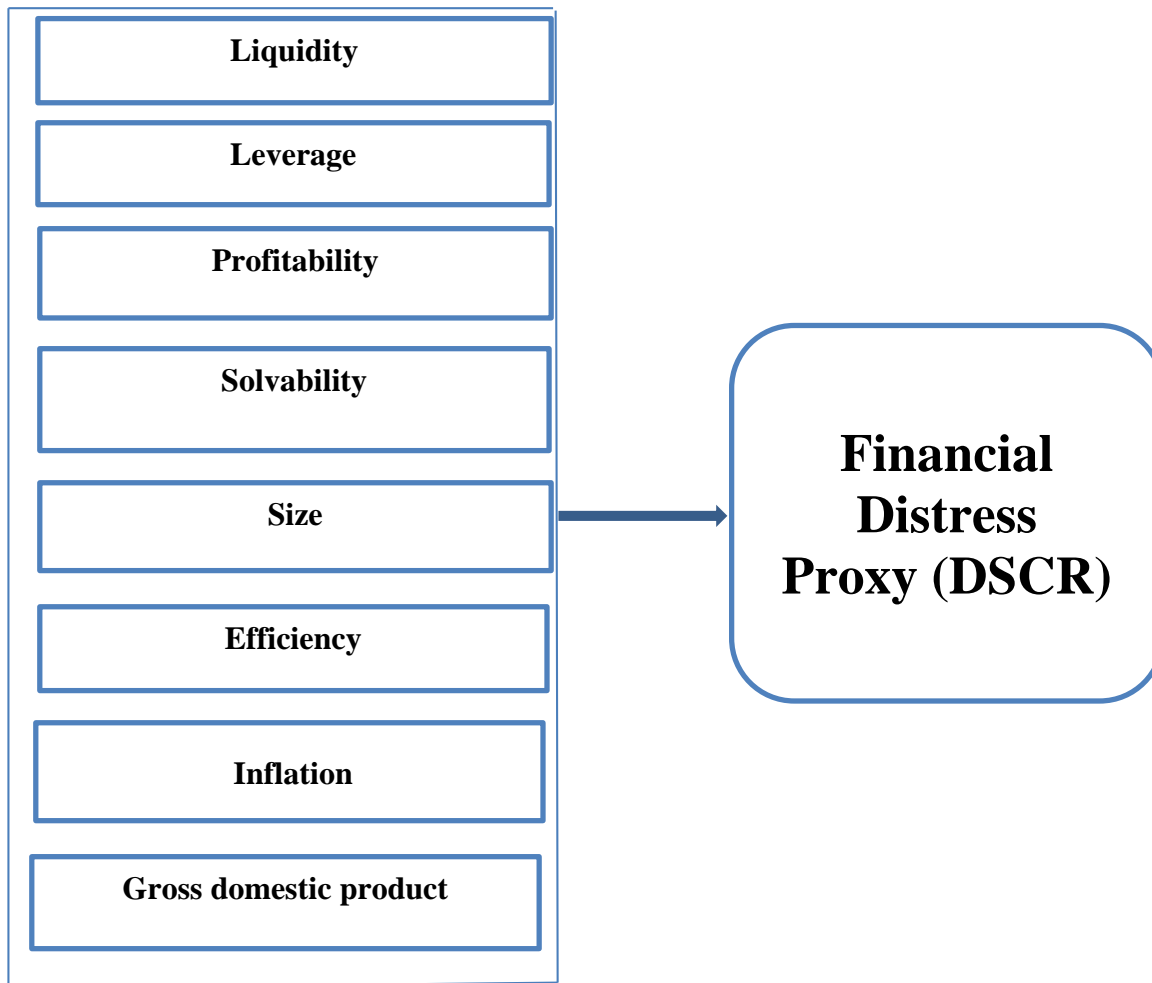
Source: - literature review

VI.   DATA ANALYSIS AND INTERPRETATION

To empirically investigate the determinants of financial distress and achieve the objectives stated in the first chapter, all banking companies, their year of service greater than five years, was included. Based on the stated year of service and others reason data of a fifteen banking organization over the period of 2012- 2016 was collected. Therefore, seventy-five (5*15) observations were used to empirically analyzing the determinants of financial distress in the Ethiopia banking sector.

Descriptive Statistics

In this section, descriptive statistics are described in order to understand a summarized picture of data from the different bank. Descriptive statistics are given in table 1.

Table 1: Descriptive statistics

Variable	Minimum	Maximum	Mean	Std. Deviation
DSCR	0.36	2.72	1.4816	0.39599
Liq	1.00	1.60	1.1673	0.10217
Lev	0.62	0.98	0.8513	0.05346
Pro	0.00	0.07	0.0273	0.01298
Solv	0.02	0.38	0.1487	0.05346

Size	8.63	11.47	9.9095	0.55080
Eff	0.31	2.12	1.1271	0.35207
AINF	0.07	0.23	0.1120	0.06020
GDP	0.08	0.10	0.0940	0.00805
Observation	75	75	75	75

The table above shows that, minimum, maximum, mean, and the standard deviation of all nine variables and it indicates the results over the period from 2012 to 2016 in Ethiopia Banking companies which have computed from the financial statements, annual report, and website of the company.

Banks show a mean of 1.4816 in the study period (2012-2016). This indicates that the banking sector has covered their current obligation by 1.4816, with a maximum value of 2.72 and a minimum value of 0.36 which shows banking sector company generates just enough revenues to pay for its debt servicing. Standard deviation is 0.39599, which implies a small difference in debt service coverage in the banking sector. The descriptive statistics of the liquidity variables are shown that the minimum value of liquidity is 1.00 while the maximum value is 1.6, whereas the mean and standard deviation for liquidity is 1.1673 and 0.10217 respectively. This indicates that the liquid asset of the banking sector can be converted into cash quickly.

The minimum and maximum value of leverage ratio are 0.62 and 0.98 respectively, whereas mean leverage TL to TA is 0.8513 and the standard deviation is 0.05346. This is indicated that when comparing total liability to a total asset, the ratio for this banking sector is 85%, meaning equity still makes up a majority of the banking sector assets. The average profitability for the

Ethiopia banking institution during the study period is about 0.0273 and the value of the standard deviation is 0.01298 which implies the presence of moderate variations among the values of profitability across the banking companies included in this study.

The banking sector solvability during the study period (2012-2016) shows a mean of 0.1487 with a maximum value of 0.38 and a minimum of 0.02. A standard deviation is. 05346 which indicating lesser deviation or variability in the firm's financial distress in the banking companies during the period of investigation. Mean value of firm size is 9.9095. Hence the highly variated firm size among different banking institution may have a significant impact on debt service coverage in the banking sector that we are going to see in the regression results. The standard deviation of efficiency from the mean is 0.35207 which implies the banking sectors are efficient to cover their debt.

Correlation Analysis

Correlation is a statistical Analysis which measures and analyses the degree or extent to which the two variables fluctuate with reference to each other. It indicates that there is some connection between the variables. It measures the closeness of the relationship.

Table 2: Correlation Analysis matrix

Variables	DSCR	Liq	Lev	Pro	Solv	SI	Eff	AINF	GDP
DSCR	1.000								
Liq	0.400	1.000							
Lev	-0.064	-0.592	1.000						
Pro	0.443	0.035	0.134	1.000					
Solv	0.064	0.592	-1.000	-0.134	1.000				
SI	-0.244	-0.552	0.783	0.063	-0.783	1.000			
Eff	0.207	0.189	-0.086	0.419	0.086	-0.087	1.000		
AINF	0.138	-0.021	-0.111	0.636	0.111	-0.221	0.322	1.000	
GDP	0.221	0.186	-0.019	-0.090	0.019	-0.095	0.146	-0.142	1.000

As shown from the above table correlation analysis indicate the relationship between the variables. If, $r= +1$ there is a perfect positive correlation, if, $r= -1$ there is a perfect negative correlation, if, $r < +0.5$ there is positive correlation and low degree, if, $r > 0.5$ there is positive correlation and high degree, if, $r < -0.5$ there is negative correlation and low degree, if, $r >-0.5$ there is negative correlation and high degree. In other words higher correlation shows a higher level of association between the variable while a lower correlation indicates a lower level of association. Based on the criteria, the result shows that all variables are not highly correlated.

VII. Regression Analysis Results

The empirical model used to test the determinants of financial distress and the values for the regression equation for predicting the dependent variable from the independent variable, as follows:

Table 3: Regression Analysis results

Variable	Coefficient	Std. Error	t-Statistic	prob.
(Constant)	3.481	1.310	2.657	0.010
Liquidity	0.846	0.417	2.030	0.046
Profitability	11.448	3.767	3.040	0.003
Solvability	-2.699	0.993	-2.720	0.008
Size	-0.308	0.095	-3.243	0.002
Efficiency	0.101	0.105	0.967	0.337
Average inflation	-1.667	0.741	-2.249	0.028
GDP	3.404	4.084	0.833	0.408

Weighted	Statistics			
R-squared	0.6140	Hausman Test	Chi-Sq. Statistic	23.041371
Adjusted R-squared	0.5670		Chi-Sq. d.f.	7
Std. E. of the Estimate	.26062		Prob.	0.0017
F-statistic	13.105			
Prob (F-statistic)	0.000			
Durbin-Watson	1.213			
Level of sig.	0.050			

The above table reveals the results of regression analysis reveal that liquidity, profitability, firm size, solvability, and inflation are statistically significant whereas DSC has a statistically insignificant relationship with efficiency and GDP and the overall, F-statistic 13.105 with p-value 0.0000 indicates that the regression model is feasible. This implies that The adjusted value of R square (0.56) indicates that 56 % the dependent variable is explained by the independent variables. That means micro and macro factors are important determinants of financial distress in the Ethiopia banking sector to the extent on average 56%. A positive coefficient of variable liquidity specifies the positive relationship. However, the relationship between DSC and liquidity is statistically significant. The higher the firm's liquid assets, the higher the ability of the firms is covered its fixed charges, and the lower the probability of the firm to go for financial distress. The positive and significant relationship between profitability and DSC of Ethiopia banking sector implies that a higher profitability of the banking sector lower probability to confront financial distress.

The other explanatory variables firm size and solvability are with a negative coefficient sign. However, firm size and solvability are statistically significant with the lesser p-values and significantly related with the DSC. This predicts that performance of large size banks is better than small size banks to solve financial distress, and the higher the solvability of banking sector means it could ability to pay all debts and low chance to face financial distress. Efficiency and GDP are with a positive coefficient sign and it is not statistically significant with the large p-values. Therefore, efficiency and GDP are not considered as powerful explanatory variables to define the determinants of financial distress in the Ethiopia banking sector over five years. Average Inflation is with a negative coefficient sign and statistically significant with the lesser p-values. If a banking sector income rises more rapidly than its costs, inflation is expected to exert a positive effect on financial distress.

VIII. Recommendations

There are several opportunities for future investigation in this area. First, encompassing all banks as the sample size might be used to get better results of this study. Future researchers can also conduct an analysis by looking at all banks in Ethiopia. But management of banking sector should monitor financial variables

which affect to financial distress, from in the beginning at the stage of early impairment as a symptom of financial distress, deterioration and cash flow problem, when operational cash flow is negative, maintaining and improving liquidity by improving cash collection through aggressively working on deposit mobilization or reducing long-term loan portfolio so that they can reduce the likelihood of financial distress and failure that primarily emanate from liquidity problems. National bank of Ethiopia should also strengthen prudential banking practice that would protect banks from taking excessive liquidity risk. Average inflation appeared as having a significant effect on financial distress, macroeconomic policies should consider these factors to protect the sector from financial distress.

IX. Conclusion, Limitation and future direction

Nowadays, the issue of financial distress is indispensable in the area of banking sector more than other sectors. The reason behind this is banks are the backbones of a given economy (Bridge 1998). According to (Demiguc and Detraigaialche 1998), if the banking sector of a given country faces financial crisis, chances are high that it would lead to general economic crisis. Understanding the cause of financial distress in the banking industry can help the banking sector to identify the problem related to financial distress before attacking the industry as well as help the company to develop strategies to cope up with a financial distress problem. Therefore, the Ethiopian banking sector should work to protect the industry from financial distress by strengthen prudential banking practice and improving cash collection mechanism.

The results of the present study reveal that some micro and macro factors extracted from variables significantly correlated and even better ability to determine financial distress of the banking sector. Both micro and macro variables covering various variables, which are not considered in the present study, can be further explored as a determinant of financial distress in the banking sector in future studies. For instance, some variables like corporate governance, fraud and corruption, regulation of banks, market value and cash flow, which is not included in this could be considered in future studies. Future studies can be improved to address the limitations of the present study by including an increasing number of banks. Accordingly, the future studies will incorporate all banks in Ethiopia to eliminate this limitation. In other words, although it is impossible to do any research on the Ethiopia banking sector recently, the extended study in the future can cover all the banks in the country. In a nutshell, future studies using more micro and macro variables and all sample banks would provide a more complete understanding of the determinants of financial distress in the Ethiopia banking sector and it would become a useful contribution to the present study.

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