

Original Paper

Examining the Financial Distress Condition and Its Determinant Factors: A Study on Selected Insurance Companies in Ethiopia

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Abstract

The financial health status of business firms and the effect of firm characteristics on it are taught to be very important issues in the current business environment. This study empirically examines the financial distress condition and its firm specific determinant factors (Profitability, Liquidity, Efficiency, Leverage and firm size) in the Ethiopian insurance industry. The study is based on a ten year panel data ranging from 2007 to 2016 GC obtained from a sample of nine insurance companies. The study employed the Altman's Z"-score model to test the financial health condition of the sampled insurance companies and the pooled OLS regression to determine the relationship between the explanatory variables and financial health condition. The result of the study shows that the financial health condition of the insurers under study was not in a safe condition and it shows continuous fluctuations. However, the regression analysis results of study shows that profitability and liquidity of insurers have statistically significant positive effect on their financial distress condition. Whereas leverage has a statistically significant negative effect on the financial distress condition of insurance companies. In contrast, efficiency and firm size have no statistically significant effect on the financial health condition of insurance companies.

Keywords

Altman's Z"-Score, Financial distress, Financial health, Pooled OLS

1. Background of the Study

Various scholars have given different definitions for financial distress. According to Andrade and Kaplan (1998), financial distress is a condition in which a company does not have the capacity to fulfill its liabilities to the third parties. In this case, a company is unable to fulfill its debt obligations to third

parties, which leads to either restructuring or bankruptcy. Financial distress can be defined as “the likelihood of bankruptcy, which depends on the level of liquid assets as well as the availability of credit” (Hendel, 1996). “Financial distress is a situation where a firm’s operating cash flows are insufficient to cover current obligations, such as trade credits or interest payments, and the firm is obliged to take remedial action” (Wruck, 1990).

There are many factors that cause financial distress and bankruptcy. These causes can be varied when we are taking into consideration the instability, vulnerability, and ultimately the deep-rooted structural change taking place in the world economy (Outecheva, 2007). Past studies that are conducted by Andrade and Kaplan (1998); Asquith et al. (1994); Theodossiou et al. (1996) and Whitaker (1999), have provided some empirical evidence that financial distress arises in many cases, such as endogenous risks, miss-management, high leverage level, and an inefficient operating structures. A very low level of liquidity and negative cash flows combined with high leverage leads to financial distress (Outecheva, 2007).

On condition that liquidity is not maintained, highly leveraged firms may be unable to renegotiate their debt arrangements, rather they may go for restructuring, acquisition, merger or liquidation. When a firm have reached a certain degree of leverage but do not perform to their business plans, financial distress can occur even in a growing economic situation. Altman and Hotchkiss (2005) suggests that high levels of leverage and increasing volatility make equity value vulnerable and may cause a decline in the enterprise value which rapidly impair equity.

Firms failing under financial distress will face a variety of events, such as dividend reductions, losses, plant closings, layoffs, reduced stock prices, CEO resignations and so on. A financially distressed firm may face two possible conflicts. The first one is cash shortage on the ‘assets’ side of the balance sheet and the second one is debt overhanging in the ‘liabilities’ side of the balance sheet. In both circumstances, we will get the same result which is the insufficiency of cash flows to cover current obligations. This condition forces the distressed firms into negotiations with their creditors about the postponement of their debt repayment (Charalambakis, Espenlaub, & Garrett, 2008). When the firms become financially distressed, they are confronted with the problem of raising additional capital in order to finance the related costs.

The costs of financial distress to the firm may arise from lose customers, valuable suppliers, and key employees, market share to their competitors; financial penalties for violating debt agreements, accelerated debt repayment, operational inflexibility, and managerial time and resources spent on negotiations with the lenders; and missing valuable projects due to costly external financing (Purnanandam, 2007).

Many theoretical and empirical literature show that profitability, liquidity, efficiency, leverage and firm size are the major factors that determine the financial distress position of a company (Altman & Hotchkiss, 2006; Pranowo, Azam, chain, & Nuryartono, 2010; Ogawa, 2003; Cheluget, 2014). But, in Ethiopia, the studies made on the subject of financial distress are very limited. In addition, the existing

studies are mainly focused on the banking and manufacturing industry. So this study adds value to the existing literature about financial distress concentrating on the insurance business in Ethiopia.

It is obvious that without the insurance sector, the whole economy can be adversely affected (International Accounting Standards Board, 2007). The insurance industry is an essential part of the country's financial sector and its benefits cannot be underestimated. If this key sector stayed missing, the consequence on the economy would be shocking. The Insurance sector offers protection covers to the assets which are used in the operation other sectors of the economy. Provision of insurance covers for investors' assets facilitates positive economic growth and favorable investment climate within the economy. Insurances are also important sources of funds through their pooling system. This is an addition to their basic role of providing protections to the insured against financial loss as well as being a source of security (Moyer, 2006). However, the failure of a firm in this sector may lead to economic crisis. When companies become financially distressed, they will have an effect on the economy and negatively affect the economic stability of other sectors in a country (Hendel, 1996).

Financial difficulties in Ethiopian companies had occurred during the global financial crisis happened in 2008, raw material price blow in 2009, and Ethiopian currency devaluation in 2010 (Andualem, 2011). Holland Car and Access Real Estate are among the companies who faced severe financial distress in Ethiopia. Since insurance companies are closely connected and serve in almost all sectors of the economy, failure of firms in one sector will spread to them. Financial institutions including insurance companies are very sensitive to factors that affect their financial health. So there should be a continuous test of their financial and operational conditions.

The current trend in Ethiopian insurance industry is that it is showing progress in performance and almost all insurers are reporting positive accounting profit. However, being profitable does not assure the financial healthiness of the companies, and it does not necessarily mean that all profitable companies are healthy enough to fulfill their short and long term obligations. This is because of the fact that not all of the profit can be used as source of funds or be accessible for paying its obligations (Pranowo et al., 2010).

Andualem (2011) have conducted a research entitled "Financial Distress and Its Determinants in Selected Beverage and Metal Manufacturing Firms in Ethiopia" and found that firm age, profitability, firm efficiency and liquidity have positive and significant influences to Debt Service Coverage as a proxy of financial distress. Whereas, leverage has a negative and significant relation with Debt Service Coverage.

Yohannes (2014) have studied the determinants of financial distress in the case of manufacturing share companies in Addis Ababa-Ethiopia and found that solvability, economic growth, firm size, and liquidity have a positive and significant impact on financial distress measured by Debt Service Coverage. But, leverage has a negative and significant relation with financial distress. Other variables such as profitability, efficiency and inflation have no significant impact on financial distress condition of manufacturing share companies in Addis Ababa-Ethiopia.

Ephrem (2015) examined the determinants of financial distress conditions of private commercial banks in Ethiopia using ZETA score as a proxy for financial distress. The study has found that capital to loan ratio, net interest income to total revenue ratio have statistically significant and positive effect on the financial health condition of banks. On the other hand, nonperforming loan ratio has a statically significant negative influence on the financial health of the banks.

Cheluget (2014) have studied the determinants of financial distress in insurance companies in Kenya using ZETA score as a proxy for financial distress measurement. The study concluded that there is a significant and positive relationship between the independent variables (profitability, liquidity, efficiency, and leverage) and the dependent variable (financial distress) of insurance companies in Kenya.

Up to the best knowledge of the researcher, there is no previous study made on the determinants of financial distress in case of Ethiopian insurance companies. In addition, most previous studies conducted in other industries of Ethiopia have used debt service coverage, a univariate analysis technique which uses a single financial ratio, operating income/total debt service costs, as a proxy for measuring financial distress. In this Study, ZETA analysis, a multivariate analysis technique is used. Edward I. Altman in 1968, was the first researcher to develop a multivariate statistical model to discriminate failure from non-failure firms using five financial ratios. In this study, the researcher used the Altmans' Z"-Score model (ZETA score) as a proxy for measuring financial distress.

2. Research Design and Methodology

This study is mainly explanatory/casual type since it is aimed at explaining the causal relationship between financial distress and factors that affect it. Hence the major objective of this study is to measure the financial distress condition and its causal relationship with its determinant factors, the researcher used a quantitative research approach. In order to fulfill the objectives of this study, the researcher used only secondary data and it was acquired from the annual financial reports of the selected insurance companies in Ethiopia. A ten-year panel data of the audited financial statements was collected from the selected insurance companies. In addition, previous research papers, journals, books, articles were consulted.

The target population of this study was the total insurance companies operating in Ethiopia. The National Bank of Ethiopia announces that there are seventeen registered insurance companies in Ethiopia. In this study, the researcher used purposive sampling method. Insurance companies that have operated for a minimum of ten years were included in the sample. For the purpose of testing the financial distress condition of the insurance companies, Altman's Z-score model was used. In order to test the numerical relationship between the dependent variable (i.e., financial distress condition) and the independent variables (i.e. profitability, liquidity, leverage, efficiency and firm size), the pooled OLS regression analysis is used. The following multiple linear regression were used in order to determine and interpret the significance and direction of the coefficients of independent variables.

$$FD = \beta_0 + \beta_1 \text{Prof} + \beta_2 \text{Liq} + \beta_3 \text{Eff} + \beta_4 \text{Lev} + \beta_5 \text{LnSize} + \varepsilon_t$$

Where, Financial distress (FD), profitability of the firm (Prof), liquidity (Liq), efficiency of the firm (Eff), the level of the firm leverage (Lev), and the size of the firm (the natural logarithm of total assets) (LnSize)

3. Result and Discussion

This section mainly shows the results of the analysis made to determine the financial health condition of nine Ethiopian insurance companies which are included in the sample is presented. In order to achieve the first specific objective of the study, which is “to evaluate the financial health condition of insurance companies in Ethiopia”, the ten year financial data ranging from 2007 to 2016 GC collected from the sampled insurance companies are first analyzed with the use of a Multiple Discriminate Analysis (MDA) called Altman’s Z—score analysis model of 2000 GC.

Table 1. Summary Statistics for Z-Score Value of the Sampled Insurance Companies

No	Company	Mean	SD	Variance	Range	Minimum	Maximum
1	Africa	-0.3232774	1.207906	1.459036	3.388842	-1.907028	1.481814
2	Awash	0.6191351	0.4733885	0.2240966	1.45174	-0.17174	1.28
3	EIC	1.664491	0.3775743	0.1425624	1.203946	1.16475	2.368695
4	Global	2.058994	1.44452	2.086637	3.94798	0.31026	4.25824
5	NICE	1.530992	1.220869	1.490521	4.30164	0.062998	4.364638
6	Nib	1.297955	0.4093859	0.1675968	1.248291	0.7231452	1.971436
7	Nile	0.9228288	1.28987	1.663766	3.415872	-1.328182	2.087689
8	Nyala	2.173697	0.6590792	0.4343854	1.833488	1.039361	2.87285
9	UNIC	1.998135	0.8795464	0.7736018	2.629006	0.6523234	3.281329
Total		1.326994	1.201372	1.443294	6.271666	-1.907028	4.364638

As indicated in Table 1, the average financial distress condition, as measured by Z”-Score, of the insurance companies under study for the whole study period is 1.33, which lies in the gray zone. The standard deviation of Z”-Score for the sampled insurance companies during the study period is around 1.20, which indicates how close the Z”-score of each company is to the mean value. Since the value of the standard deviation is large, it implies the presence of higher variations among the Z”-Score of insurance companies included in this study. The minimum value of Z”-Score is around -1.91 and its maximum value is around 4.37, with a difference of around 6.28. This indicates that the most financially distressed insurance company recorded a Z”-Score of -1.91 and the company with most

healthy financial status recorded a Z"-score of 4.37 during the study period.

In the following section, the Z"-Score analysis of the sampled insurance companies is presented including the ratios used in calculating their z"-score level.

Generally, the Z"-Score analysis of the selected insurance companies indicates that the financial health condition of the insurers under study was highly fluctuating. The financial health status of the sampled insurance companies for the most time of the study period falls in the gray and distressed zones and rarely falls in the safe zone. The gray zone is an undesirable status of financial health that the likelihood of being financially distressed or healthiness cannot be clearly determined. When we come to the distressed zone, it is characterized by the existence of financial difficulties and a greater likelihood of the occurrence of bankruptcy. Since the financial health condition of the insurers under study is not in a safe condition and shows greater fluctuation, we fail to reject the null hypothesis, i.e., *The financial health condition of Ethiopian insurance companies is not in a healthy and stable condition.*

In order to determine the relationship between the dependent variable (Z"-Score) and the explanatory variables (Profitability, Liquidity, Leverage, Efficiency and Firm size), the researcher used multiple linear regression models for panel data. So as to perform multiple linear regression, the researcher must check the collected data against the assumptions of the Classical Linear Regression Models (CLARM). The Shapiro-Wilk W test of normality for the study shows that the P-Value is (0.29724) is greater than 0.05. So there is no reason to reject the null hypothesis, and we can conclude that the data is normally distributed. In addition, the P-value for Breusch-Pagan heteroscedasticity test is 0.3672, which is greater than 0.05. So we failed to reject the null hypotheses (homoscedasticity). So there is no evidence for the existence of heteroscedasticity problem in this data set. Furthermore, the value of Durbin-Watson (DW) test statistic for the study is 1.669873, which is closer to 2. Hence, there is no evidence for the existence of autocorrelation problem in the data set.

As indicated in Table 2, the value of mean VIF is lower than 10. The individual value of VIF for each independent variables are lower than 10 and the value of 1/VIF are greater than 0.10. So, there is no evidence for the existence of Multicollinearity problem in this data set.

Table 2. VIF Test for Multicollinearity

Variable	VIF	1/VIF
Prof	1.85	0.540786
Eff	1.56	0.639515
Lsize	1.49	0.670366
Lev	1.44	0.693860
Liq	1.32	0.755410
Mean VIF	1.53	

Table 3. Testing for Fixed Effects and Random Effects Model: The Hausman Test

	Coefficients.....			
	(b)	(B)	b-B	Sqrt(diag(V b-V_B))
	Fe	Re	Difference	S.E.
Prof	7.515096	7.66106	-0.1459642	0.205288
Liq	4.181175	4.178078	0.0030968	0.0667414
Eff	0.1716386	0.0993422	0.0722964	0.1963211
Lev	-1.950237	-2.122484	0.172247	0.3909374
Size	0.0130178	0.0476147	-0.0345969	0.0337617

b = consistent under Ho and Ha; obtained from xtreg

B =inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\chi^2(5) = (b-B)'[(V_b-V_B)^{-1}](b-B)$$

$$= 3.26$$

$$\text{Prob} > \chi^2 = 0.6594$$

Table 4: Breusch and Pagan Lagrangian Multiplier (LM) Test for Random Effects

$$zscore[company1,t] = Xb + u[company1] + e[company1,t]$$

Estimated results:

	Var	sd = sqrt(Var)
Zscore	1.443294	1.201372
E	0.0475286	0.2180105
U	0	0
Test: Var(u) = 0	chibar2(01) = 0.00	
	Prob >chibar2 = 1.0000	

As shown in Table 3 and 4 above, the Hausman test P-value (0.6594) is greater than 0.05. So random effects model is more appropriate than the fixed effects for this data set. Besides, the P-value of Breusch and Pagan Lagrangian LM test is greater than 0.05. So, we failed to reject the null hypotheses. So, there are no significant differences across entities) and we can use the Pooled OLS model over the random effects model estimation. Accordingly, the analysis and discussion of result for this study were based on pooled OLS regression.

Table 5. The Result of Pooled OLS Regression between Z"-Score and the Explanatory Variables

Source	SS	DF	MS	Number of Obs. = 90		
Model	124.549463	5	24.9098926	F(5, 84) = 536.02		
Residual	3.90367184	84	0.046472284	Prob. > F = 0.0000		
Total	128.453135	89	1.44329365	R-Squared = 0.9696		
				Adj. R-Squared = 0.9678		
				Root MSE = 0.21557		
Z"-Score	Coef.	Std. Err	T	P> t	(95% Conf. Interval)	
Prof	7.66106	0.5546163	13.81	0.000	6.558144	8.763975
Liq	4.178078	0.1246508	33.52	0.000	3.930196	4.42596
Eff	0.0993422	0.3150965	0.32	0.753	-0.5272618	0.7259461
Lev	-2.122484	0.3332829	-6.37	0.000	-2.785254	-1.459715
Lnsiz	0.0476147	0.0287177	1.66	0.101	-0.0094937	0.1047231
_Cons	-3.055317	0.5253666	-5.82	0.000	-4.100066	-2.010568

Table 5 shows the overall P-value of the model is less than 0.05, which indicates the overall significance of the explanatory variables used in this study in explaining the changes in the financial health condition of insurance companies under study. The result of R^2 shows that about 96.96% of the variation in Z"- the score is explained by the explanatory variables and the models used in this study is well fitted to the data. The following hypotheses test were made based on the regression outcomes of the financial health condition (Z"-Score).

As the result of pooled OLS regression indicates, the profitability of insurance companies, measured by Return on Capital Employed ratio, have a statistically significant positive effect on financial distress condition, with a regression coefficient of 7.66106. This coefficient tells us that, holding all the other variables constant, when the profitability of insurance companies increase by one unit, Z"-the score is expected to increase by 7.66106. The P-value and t-statistics of profitability are 0.000 of 13.81 respectively. Thus, we accept the alternative hypothesis, i.e., *Profitability has a statistically significant positive effect on financial distress condition of Ethiopian insurance companies*, at 1% level of significance. This result is consistent with the liquid asset theory, which suggests that "a firm is anticipated to go bankrupt whenever the current year's profit or net cash flow is negative" and the liquidity and profitability theory, which suggests "a positive and high level of these profitability and liquidity indicators shows a lower risk of bankruptcy".

The regression result concerning liquidity shows that liquidity of insurance companies, measured by the Current Ratio, have a statistically significant positive effect on their financial health condition. The regression coefficient of liquidity is 4.178078, which implies when the value of liquidity of insurance

companies increase by one unit, their Z'' -score level is expected to increase by 4.178078, *ceteris paribus*. Since the P-value is 0.000 and the value of t-statistics is 33.52, we accept the alternative hypothesis, i.e., *Liquidity has a statistically significant positive effect on financial distress condition of Ethiopian insurance companies*, at 1% significance level. This statistical result is in agreement with the liquidity and profitability theory, which suggests “a positive and high level of these profitability and liquidity indicators indicates a lower risk of being bankrupt”.

The efficiency of insurance companies, measured by the Total Assets Turnover ratio, has a positive relationship with the financial health condition of insurance companies, with a regression coefficient of 0.0993422. But, as the p-value is 0.753, which is greater than 0.05 and 0.10. So it has no statistically significant influence on financial health condition even at 10% level of significance. The value t-statistics is 0.32, which is less than 1.96. So we failed to reject the null hypothesis, i.e., *Efficiency has no a statistically significant positive effect on financial distress condition of Ethiopian insurance companies*.

As it can be observed from the regression result in the above Table, leverage has a statistically significant negative effect on the financial health condition of insurance companies, with a regression coefficient of -2.122484. This implies that a one unit change in the level of leverage (measured by the debt ratio in this study) will cause a 2.122484 reduction in the level of financial distress (measured by Z'' -Score). The P-value and t-statistics of this variable are 0.000 and -6.37 respectively, which enables to accept the alternative hypothesis, i.e., *Leverage has a statistically significant negative effect on financial distress condition of Ethiopian insurance companies*. This result is in agreement with the general premise that the use of too much debt leads to higher financial risks and deteriorate financial stability. High leverage leads to financial distress (Outecheva, 2007).

As shown in Table 4.17, the regression result regarding firm size (Lnsize), which is measured by the natural logarithm of the total assets of each insurer included in the sample, indicates that the size of the insurer has no a statistically significant impact on the financial health condition of insurance companies. The beta coefficient of Lnsize is 0.0476147, which implies that firm size has a positive effect on the financial health condition of insurance companies. But, the P-value and t-statistics of Lnsize are 0.101 and 1.66 respectively. Accordingly, we fail to reject the null hypothesis, i.e., *Firm size has no a statistically significant positive effect on financial distress condition of Ethiopian insurance companies*, even at 10% level of significance.

Generally, referring to the P-value and t-statistic of each explanatory variables of the regression output in Table 5, profitability (Prof), liquidity (Liq) and leverage (Lev) have significant effects on the financial health condition (Z'' -Score), at 1% significance level. Whereas, efficiency (Eff) and firm size (Lnsize) have no significant effects on the financial health condition (Z'' -Score) of insurance companies.

4. Conclusion and Recommendation

Based on the findings obtained from the analysis of the study, the result of Altman's Z'-Score analysis revealed that the financial health condition of the sampled insurance companies was not in a safe condition and their financial health status shows continuous fluctuations throughout the study period. In addition, the result of the pooled OLS regression analysis shows that profitability of insurance companies has a statistically significant positive effect on the financial health condition of Ethiopian insurance companies. Keeping other things constant, the higher the level of profitability, the better financial healthiness, and stability. Since profitability measured by return on capital employed ratio have the highest beta coefficient than the other variables, it is regarded as the leading determinant of financial distress condition in Ethiopian insurance sector.

Furthermore, liquidity of insurance companies measured by the current ratio has a statistically significant positive effect on financial distress condition of Ethiopian insurance companies. This implies that keeping other things constant, when the ratio of current assets to current liabilities increases, the financial healthiness of insurance companies will be improved and vice versa. Insurers with a higher level of liquidity indicators will face lower financial risks. Besides, leverage level of insurance companies measured by the debt ratio has a statistically significant negative effect on financial distress condition of Ethiopian insurance companies. This means the use of higher debt financing will negatively affect the financial healthiness of insurers.

Moreover, the Efficiency of insurance companies measured by the total assets turnover ratio has no a statistically significant effect on the financial health condition of Ethiopian insurance companies. Likewise, the size of insurance companies measured by the value of total assets has no a statistically significant effect on financial distress condition of Ethiopian insurance companies. Even though the regression coefficient of the natural logarithm of firm size shows that it has a positive relationship with the financial health condition of insurance companies, its effect is not statistically significant.

Finally, based on the key findings and conclusions of this study, the researcher forwards the following recommendation points, which may be essential for the betterment of the financial healthiness of insurance companies. Since the financial health condition of insurers under study was not in a safe and stable condition, they should strive towards the improvement of their financial stability. This can be done through improving profitability and liquidity levels and reducing the level of leverage to the optimum level. Because these financial ratios are found to have significant effects on the financial healthiness of insurance companies. In addition, it is obvious that the failure of insurance companies may mislead the whole economy. So there should be increased supervision and control from the regulatory authority, in order to prevent the incidence of bankruptcy.

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