Assessment of Financial Distress Conditions of Commercial Banks in Ethiopia:
A Case study of Selected Private Commercial Banks

Ephrem Gebreslassie[1]   Dr. GrusuwmyNidu[2]
1.Department of Accounting and Finance , College of Business and Economics, Wolaita Sodo University,
P.O.Box 471 Wolaita Sodo Ethiopia
2.School of Business and Economics, Adama Science and Technology University
* E-mail of the corresponding author: laephrema@gmail.com

Abstract
The current trend in Ethiopian banking industry is that it is showing progress in performance and almost all banks are reporting positive accounting profit. However, profitable companies should not be a guarantee that the companies can survive to fulfill its liabilities. This is due to the fact that not all of profit can be cashed as source of funds or be available for covering its obligations. Based on this fact, in this study attempts are made to identify the financial distress conditions and its determinants in selected private commercial banks in Ethiopia. The study first assessed the financial health conditions of the selected private commercial banks using Altman Z-score model (ZETA Analysis) and estimated determinants of financial distress using panel data starting from 2002/03 to 2011/12 and six private commercial banks in Ethiopia. Finding of the study shows that the financial health of the selected private commercial banks is good and improving from time to time, but some fluctuating trend is observed.
Keywords: Financial Distress Conditions, Altman Z-Core Model Analysis (AZMA), Private Commercial Banks

Introduction
It is only over a few decades quite a few issues have been carried out as financial distress in developed, developing and transitional economies (Zulkarnian 2009). The issues of financial distress were so diverse and approached from various disciplines perspective including but not limited to political theory, legal theory, management, economics, and accounting and finance (Pindado 2001). As a result any attempt of studying financial distress inherently necessitates defining its scope. Financial distress is defined as "the probability of bankruptcyand it depends on the level of liquid assets as well as on credit availability." (Hendel 1996)as sited by (Andualem 2011). This is the probabilistic definition given by IBD, but various scholars given various contextual definitions for financial distress. Due to its complexity variety of causes, so far no one has given a single and exact definition for financial distress. Very often financial distress is determined in terms of failure, default, bankruptcy, or distressed restructuring, based on the underlying methodology applied by the researcher and the objectives of the overall research. Financial distress can be the reflection of corporation's management condition. Consequently the distress score of corporations should be considered as a new predictor variable in predicting the financial distress (Shleifer and Vyshin 1992). Thus, the intent of this study is to assess the financial health in commercial banks in Ethiopian context so as to provide some recommendations and as the same time to contribute to the body of knowledge and filling of the gap in the literature.

Objective of the Study
To evaluate the financial health (that is the financial distress position) of selected private commercial banks in Ethiopia

Significance of the Study
The research is expected to contribute first and for most; to the selected commercial banks in order to know their financial distress position under the study. Its findings are highly important for the management of the banks in the area of financial distress.

Scope of the Study
The scope of the study is within the private commercial banks in Ethiopia on financial distress in Ethiopia. Seven years data from 2005 through 2012 was used for the study.

Literature Review
A micro definition of bank failure is provided by (Hambrick and D'Aveni 2004), According to the authors, "a bank is deemed to have 'failed' if it is liquidated, merged with a healthy bank (or purchased and acquired) under central government supervision/pressure, or rescued with state financial support."

(Purnanandam 2004), defines "… a low cash-flow state of the firm in which it incurs deadweight losses without being insolvent." The author assumes being financially distressed as the firm's state of facing a financial condition whereby it finds itself in an intermediate state between solvency and in solvency due to low cash flow.

(Asquith, Grtner and Shefstein 1994), choose the interest coverage ratio in order to define financial distress. They classifies a firm as distressed if in any of two consecutive years its EBITDA is lower than 80% of the firm's interest expense. This marker incorporates the fact that a company facing financial distress usually experiences a decline in profitability, be overleveraged or face insufficient cash flows to cover current obligations.

On the other hand, (Carpeto, et al. 2010)evaluated financial distress of banks by using the Nonperforming loan to total loan ratio to. According to the existing literature, so far there is no single universally accepteddefinition and measure of financial distress that can be applied to banks. He identified the most accurate, reliable, simple, and consistent distress classification tool that can be used based on accounting measures of the financial soundness of banks. Accordingly, results of his study show that the most adequate and consistent measures of distress are the ones based on non-performing loans to total loans. He argues that this is because; banks' assets are longer term and less liquid than their liabilities. The interest income that they earn through lending is primary source of operating income for them. Therefore, conventional accounting indicators of distress such as the interest coverage ratio cannot be applied to analyze the financial soundness of banks.

Among the scholars who defined financial distress from the perspective of financial institution particularly banks, (Chang-e 2006), defined *"as the condition of being in severe difficulties over money, especially being close to bankruptcy"* they assert that the difficulties come in whenever the banks cannot meet or have difficulty paying off its financial obligations to its creditors.

The classical scholars who did the first studies about financial distress and bankruptcy predictions in particular are: Smith and Winakor (1935) as cited by(Skogsvik and Skogsvik 2013), (E. Altman 1968). They were followed by (Merwin 1942) as cited by (Andualem 2011). Both in their studies pointed out that failing firms show significantly different ratios than successful firms do.

Another academic who studied on ratio analysis and bankruptcy prediction models was (Bever 1966). His study is considered as one of the classical works on this subject. He questioned the use of multivariate analysis. Instead, Beaver strongly believes in the use of univariate analysis of financial analysis to predict corporate bankruptcy.

(E. Altman 1968), is one of the classical researchers of financial distress and bankruptcy. He had been continuously conducting researches in the area of distress and distress classification model, and to develop improved model for bankruptcy prediction. He first developed a Z score model which is widely accepted distress classification model and had been in use since its development in 1968. In 1977 being accompanied by Haldeman and Narayanan**,** he developed a new revised Z score model which he calls ZETA model. Also in 1983 he set up a new model in predicting financial distress of companies by revisiting the ZETA model. The prediction model applied discriminating function by linear regression model where Z is overall index and other financial variables to be independent variables such as: working capital to total assets retain earning to total assets, earnings before interest and tax/total assets, book value equity to book value of total liabilities and sales to total assets. The empirical findings of distress and non-distress companies' Z-Score was very accurate to predict failure model and useful to suggest the causes of financial distress. And again in 2002 he revisited this model for testing of accuracy of the model given the fact that it has been a long time since it was first developed and the dynamics of economic and other factors have been changing for theses all years. Accordingly, he improved the model to be wide enough to embrace non-manufacturing sectors such as financial institutions. The new model is developed to serve for service giving organizations including financial institutions. The detail about this model is discussed in the methodology part under model specification.

(Almeida and Philippon, 2000), analyzed the Risk-Adjusted Cost of Financial distress. The research has been done in United States for public companies which have issued corporate bonds and got difficulties to pay debt. Other variables which have been evaluated: corporate valuation practice and Capital structure in related with financial distress in direct cost and indirect cost. The empirical result is 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 start declining because firms do not pay taxes in all states of nature and because higher leverage decrease additional marginal benefits.

(Berg 2005), have compared several accounting based models for bankruptcy prediction which are developed and tested on large data sets containing annual financial statements for Norwegian limited liability firms. Finding of the study shows that generalized additive models significantly outperform popular models like linear discriminate analysis, generalized linear models and neural networks at all levels of risk. He also compared a multiple period model, developed on all available data from three consecutive years, with a one-year model, developed on data from the most recent year only. The result of the comparison indicate that the multi-year model exhibit a desirable robustness to yearly fluctuations that is not present in the one-year model.

(Outecheva 2007), made an research on public companies in USA which are under financial distress. He was concerned with risks of corporate financial distress. He used three different approach in the research: the different between systematic risk, change of cost of capitaland un-systematic risk and

management style to face financial distress before going to bankruptcy. The research divided into two parts, before and after 1990s. The technique of distress risk assessment before the 1990s were dominated by static single-period models which try to find unique characteristics that differentiate between distress and non-distress firms and after 1990s has led to the development of dynamic models which would be able to determine each firms' distress risk at each point in time. Based on the empirical result, he developed an integral concept of financial distress which can be used as a theoretical basis for developing more complex and sophisticated models. Two issues are important according to him: First, financial distress indicate that the value of a firm's equity in such situation lies below the value of debt (under funding). The firm does not have enough coverage to borrow additional debt through the bank. Second, percentage of firms recovered from financial distress varies from 10% to 34% dependent on the sample selection length of time series and economic condition.

(Gomathy 2012), analyzed the financial health of selected oil refineries in India by using the Altman Z-score model. And he found that almost all of the selected firms are above the standard bankruptcy line which is put by Altman in his model.

Financial distress literature specific to the banking sector are limited in number when compared to that of non-financial institutions. (Demiguc and Detraigaialche 1998), studied what happens to the banking system in the aftermath of a banking crisis by using aggregate and bank level data for several countries. They found that contemporary crises are not accompanied by declines in aggregate bank deposits, and credit does not fall relative to output, although the growth of both deposits and credit slows down substantially. Output recovery begins in the second year after the crisis and is not led by resumption in credit growth. Banks, including the stronger ones, reallocate their asset portfolio away from loans.

(Sinkey, Treza and Dince 2012), applied a ZETA model which is revised model of Z score analysis for predicting the bank failure. The purpose of their study was to test the cross-industry validity of the so-called zeta model. They used the test sample consisting of commercial banks that failed in United States during the early 1980s. They found that although it is not as accurate as the original zeta model, this version of the zeta model is successful in identifying bank failure in about 3 out of 4 cases. According to the researchers the possible reasons of the model being not as accurate as its original version are inability of bank accounting data to reflect market values, the presence of criminal misconduct as a major contributing factor in bank failures, and the process by which banks are declared insolvent.

(Carpeto, et al. 2010)Studied distress classification measures in the banking sector. They tested the power of ten different accounting measures using media coverage as the benchmark for a sample of 1,175 banks which participated in merger and acquisitions or divestiture deals over the 22 years. According to the results of the study, a bank should be defined as distressed if the ratio of its non- performing loans to total loans is in the two highest deciles of the industry, using a three-year moving average. This measure is typically favored by practitioners, who maintain that other common measures e.g., those involving provisions for loan losses are not as accurate as they express only a managerial forecast. Interestingly, measures that capture capital adequacy too often depict the bank as healthy even if it is de facto distressed, while measures of asset quality, though highly correlated with each other, tend to overestimate the number of distressed banks.

(Gunay and Ozkan 2007), conducted a research with a purpose of proposing a new technique to prevent future crises, with reference to the last banking crises in Turkey. They used Artificial Neural Network (ANN) as an inductive algorithm in discovering predictive knowledge structures in financial data and used to explain previous bank failures in the Turkish banking sector as a special case of emerging financial markets. Their finds indicate that ANN is proved to differentiate patterns or trends in financial data. Most of the bank failures could be predicted long before, with the utilization of an ANN classification approach, but more importantly it could be proposed to detect early warning signals of potential failures, as in the case of the Turkish banking sector.

(Bridge 1998), examined the causes financial distress in local banks of Africa and its implication for prudential policy. His study concentrated on banks in Kenya, Nigeria, Uganda and Zambia. Accordingly many of the local banks set up in the above countries have been closed down or taken over by their Central Banks because of insolvency and illiquidity caused by non-performing loans. He asserts that the severity of bad debt problems was attributable to problems of moral hazard and adverse selection. According to him several factors contributed to the moral hazard on bank owners to take excessive risks with depositors' money. These included low levels of bank capitalization, access to public-sector deposits through the political connections of bank owners, excessive ownership concentration, and regulatory forbearance. The impaired loan quality due to the luck of skill and information problem is also another factor for failure of banks in the countries above.

(Amadasu 2012)evaluated the financial distress of selected commercial banks in Nigerian from 2003 to 2007 with four packages of analysis, i.e. multiple discriminate analysis, ordinary least squares regression, correlation Matrix and Logit-Probit regression, for sophistication and effectiveness instead. The finding is that working capital/total asset (default ratio) among others should be closely taken care of and the major

recommendation is that bank officials or corporate managers whose firms failed should not be with impunity.

Methodology

Data type and source

The study is based on quantitative data which is gathered from annual audited financial statements of the sample banks. Thus, the data type that which is used in this research is a quantitative one.

Sample Design and Sample Size

Target population of the study is the six private commercial banks in Ethiopia which have been operating for the last 10 years in the industry. The researcher chooses to study only six private commercial banks due to their age in the industry. It is well known that the culture of commercial banking in Ethiopia is recent phenomena and the sector is in its infant stage since its only eighteen years after private banking is allowed by proclamation in the country following the 1995 economic reform. The 2012 annual report of Ethiopian National Bank indicates that there are 18 banks out of which 16 are commercial banks (NBE 2012). According to the report the total number of privately owned commercial banks is 15. And out of the 15 private commercial banks, only six are old enough to be taken for ten years data analysis. Ten years data is used for the analysis in ordered to increase the number of the observation and reduce the probability of committing type I error.

The researcher takes these banks as a target population of the study. Thus inferences made from the findings of this study will apply only for the selected banks. This is due to the fact that it is difficult to infer about other banks that are in the industry by taking banks that operated for ten years as the scope of the study is to analyze ten year data. The other reason is that banks that stayed long in the industry cannot be compared with those of the new comers.

Model Specification

The study first assessed the financial health condition of selected private commercial banks in Ethiopian by using the Altman's Z score model. Altman's Z score analysis has been applied by financial analysts to evaluate the general trend in the financial health of the enterprises over a period by applying Multiple Discriminate Analysis (MDA). Using only some individual accounting ratio frequently to predict financial performance of an enterprise may only provide warnings when it is too late to take a corrective and single ratio does not convey much of the sense (Gomathy 2012) On the other hand there is no internationally accepted standard for financial ratio against which the results can be compared. However, (E. Altman 1968) combined a number of accounting ratios, (liquidity, leverage, activity and profitability) to from an index of the probability, which are effective indicators of corporate performance predicting bankruptcy, well over a year or two in advance. Various researches have been conducted using this model by applying Multiple Discriminate Analysis (MDA). Some of the researchers who used this model in their research include; (Mullu 2011)(Sinkey, et al. 2012)(Gomathy 2012) The data collected are first analyzed with the help of five accounting ratios. These different ratios are combined into a single measure Zeta score analysis with the help of Multiple Discriminate Analysis (MDA). The formula used to evaluate the Zeta score analysis as established by Altman is:

$$Z= 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5$$

Where:

X_1 = Working capital / total assets,

X_2 = Net operating profit / total assets,

X_3 = EBIT / total assets (where EBIT is earnings before interest and taxes),

X_4 = BVE / total debt (where BVE is the book value of equity and total debt is book value of total liabilities)

X_5 = Sales / total assets

Altman assigned all firms with a Z-score higher than 2.99 to the category of non-bankrupt, whereas he assigned firms with a Z-score below 1.81 to the category of bankrupt firms. Firms with a Z-score between 1.81 and 2.99 were allocated to the gray area, which means that the model cannot link a conclusion to these firms. However, for simple predictive purposes, Altman classified the firms as bankrupt if $Z \leq 2.675$ (the 1968 model's cutoff score) and as non-bankrupt if $Z > 2.675$. Altman used an accuracy matrix to test the accuracy of his Z-score model. Where H stands for correct classifications, M1 for a Type I error and M2 represents a Type II error. To see how accurate the model is, you have to sum the H diagonal and divide this number by the total number of firms in the data set. This will give the accuracy percentage.

However, the above model only works for manufacturing industry and variable X_5 that is sales / total assets can't be used for financial institutions such as banks. Thus, (Altman, 2000) revise his model and developed a new Z score model which can be applied for non-manufacturing firms which embraces financial institutions as well. Accordingly, the new Z"-Score model is:

$$Z'' = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$$

The new model is identical with the old one except for the only difference in coefficient of independent variables which resulted from removal of variable X_5 (sales/total assets). In this model Altman

stated Z' Score which is less than 1.21 as financially distressed zone (Zone I) and is Z' score is greater than 2.90 it is called Zone II which is financially not distressed zone. The result of the Z' Score which is in between 1.23 to 2.90 is categorized as a "gray area". A "gray area" as defined by (ALTMAN 1983) is an area where there no clear line between bankruptcy and non-bankruptcy. It is in deeded undesirable condition of financial health of the firms. It is characterized by distress than healthiness.

In this study, this model of Altman's Z score is used to evaluate the current financial distress positions of private commercial banks in Ethiopia mainly because it is prediction models that predict future financial distress based on the "best" correlations detected in historical samples of bankrupt institutions.

Data Analysis and Discussion of Results

In this section the researcher presents the results of the analysis made to determine the financial health position of selected private commercial banks. To achieve the first objective of the study, which is to evaluate financial distress (health) passion of selected commercial banks in Ethiopia, the data collected are first analyzed with the use of five accounting ratios which are part of the Z –score analysis. These accounting ratios are then combined into a single measure of Altman's Z-score with the help of Multiple Discriminate Analysis (MDA). The result of the analysis for each bank under study is presented as follows.

I.   Zeta score analysis of Dashen bank

The following table indicates the Z-score of Dashen Bank which is calculated based on the (Altman1991) Model .

Table 4.1 Z-Score of Dashen Bank (source: author competition)

Year	X1	X2	X3	X4	Z-Score
2002	0.34	0.02	0.05	0.09	2.71
2003	0.33	0.01	0.03	0.07	2.46
2004	0.33	0.02	0.04	0.07	2.56
2005	0.3	0.02	0.04	0.08	2.38
2006	0.25	0.03	0.06	0.09	2.21
2007	0.28	0.03	0.06	0.1	2.39
2008	0.37	0.03	0.06	0.1	3.05
2009	0.48	0.03	0.06	0.1	3.71
2010	0.43	0.03	0.06	0.1	3.34
2011	0.42	0.03	0.07	0.11	3.41

As it can be seen from the table above, in period from 2002 through 2007, the bank had been in a category of "gray" area as Altman names it when a Z" score between 1.23 and 2.90. This area is called "gray" to indicate that the intermediate position of the firms between distress and healthy zones. However, in the year 2008 and 2009 it showed a sharp increase to 3.05 and 3.71 respectively from the score 2.05 in 2007 it clearly put the bank in the financially healthy zone. This could be attributable to the bank's working capital to total asset ratio (x1) which has been increasing in the same period in which the financial health of the bank has shown a sharp improvement. In 2010 an 2011, it showed a slight decree but sill it remains in a healthy zone.

In order to ascertain the financial health of Dashen Bank (S.co, Z" score has) it has been as follow
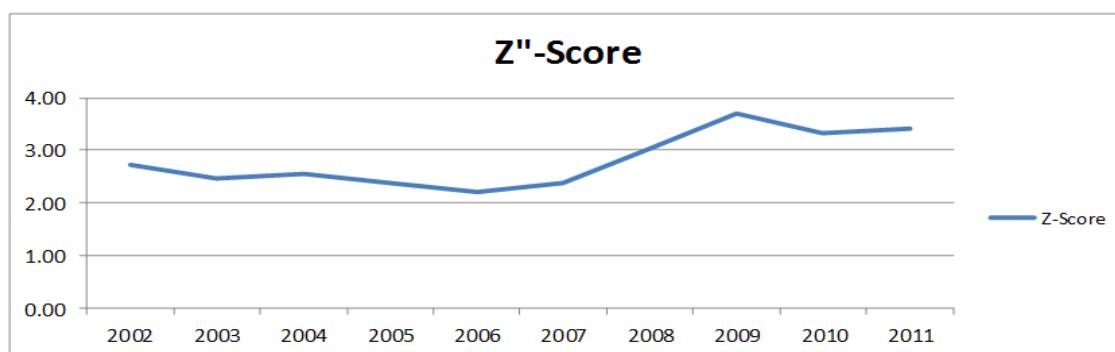

Fig 4.1 General trends in financial health of DB (source: author analysis)

In general, as it can be observed from the figure above, the bank has never experienced financial distress in the entire period of the study. The Z" score of the bank has been above the distress zone which is 1.21. Thus it can be concluded that the bank has never been distressed in the entire study period even if it had been in intermediate (gray) zone in some point and its financial health is improving continuously since 2007.

II.   Zeta score analysis of Nib International Bank (NIB)

The following table indicates the Z-score of Nib International Bank which is calculated based on the

(Altman1991) Model .

Table 2 Z score analysis of NIB (source: author competition)

Year	X1	X2	X3	X4	Z-Score
2002	0.31	0.02	0.06	0.23	2.51
2003	0.28	0.01	0.03	0.16	2.11
2004	0.27	0.03	0.05	0.16	2.17
2005	0.27	0.03	0.05	0.15	2.16
2006	0.21	0.03	0.06	0.16	1.85
2007	0.27	0.03	0.06	0.19	2.23
2008	0.37	0.03	0.06	0.20	2.89
2009	0.49	0.03	0.06	0.18	3.66
2010	0.51	0.03	0.06	0.18	3.87
2011	0.51	0.03	0.07	0.20	3.88

The Z '' score analysis of NIB indicates that the financial health of the bank was fluctuating until 2007. In 2002 the score of the bank was 2.51 which indicate s that the bank was in an Intermediate states between distress & healthy zones. In the succeeding years it showed fluctuation of having the score of 2.11 2.17 & 2.16 in the year 2003 , 2004 & 2005 respectively. In 2006 the bank was near financial distress zone with score of 1.85 which is the lowest score ever in the period covered in the study. However from the year 2007 on the bank has been showing continuous improvement in its health. In 2011 if Z" score was 3.88 which is the highest in the period covered under the study.

The general trend of the financial distress position of the bank is presented in a graphical form in the following figure.
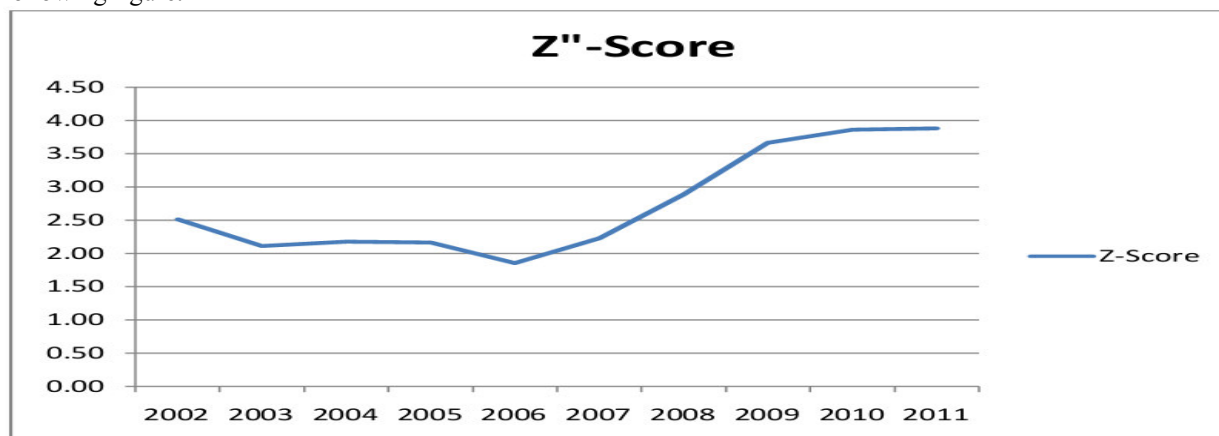

Fig 2 General trends in financial health of NIB (source: author analysis)

Again in the case of NIB ,the working capital to Total Asset ratio (x) appears to be the one having more influence on the financial health of the bank the bank than other valuables included. As it can be observed from the table, it showed continues increase from 2007 through 2011, the period in which the same trend is observed with Z" score of the bank.

III.   Zeta Analysis of Awash International Bank (AIB)

Table below indicates Z" score of Awash International Bank for the period from 2002 to 2011 is computed based on the (Altman1991) Model .

Table 4.3 Z-score analysis of AIB (source: author competition)

Year	X1	X2	X3	X4	Z-Score
2002	0.36	0.01	0.04	0.13	2.80
2003	0.40	0.01	0.03	0.11	2.92
2004	0.43	0.01	0.04	0.10	3.17
2005	0.39	0.02	0.04	0.11	2.97
2006	0.31	0.03	0.05	0.11	2.64
2007	0.29	0.06	0.07	0.13	2.72
2008	0.38	0.06	0.06	0.14	3.27
2009	0.50	0.06	0.05	0.13	3.90
2010	0.51	0.11	0.06	0.13	4.23
2011	0.40	0.16	0.07	0.15	3.74

Table 3 depicts Z" scored of AIB for the period from 2002 to 2061 the general trend in the

financial health of AIB has been depicted in fig 4.3 The Z" scores of the bank was 2.80 & 2.92 in the year 2002 and 2003 respectively indicating that the bank was in the "gray" area which is an area between health zone & distress zone. But in succeeding year the bank scored 3.17 which put the bank in the health zone . However, the banks health deteriorated back to the gray area in succeeding three continuative years. It is evident from the table 4.3 that the bank stated enjoying very good financial health during the period of 2008 to 2011 the bank's highest score ever in the entire period of the study is recorded in 210 which is 4.23.
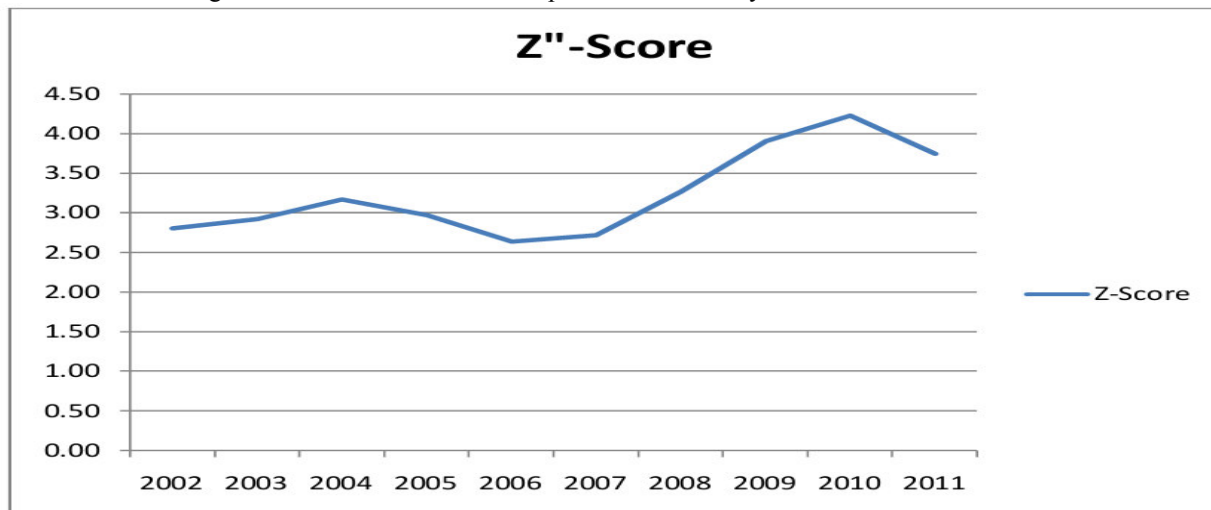

Fig 3 General trends in financial health of AIB (source: author analysis)

As it can be noticed from the trend of the financial health of the bank from the graphical presentation below, the health of the bank had been improving for the first three years of the study period. However, it started to decline in the end of 2004 until it started to improve again in 2007. In general, continuous fluctuation is observed in the financial health of the bank throughout the study period. But it is clearly observed that the bank had not been distressed for the entire period covered in the study. The worst financial condition for the bank is being in the gray area.

IV. Zeta scores Analysis of Bank of Abyssinia (BOA)

Table below indicates Z" score of Bank of Abyssinia for the period from 2002 to 2011 is computed based on the (Altman1991) Model .

Table 4 Z score analysis of BOA (source: author competition)

Year	X1	X2	X3	X4	Z-Score
2002	0.38	0.00	0.04	0.14	2.87
2003	0.38	0.00	0.03	0.13	2.80
2004	0.40	0.02	0.05	0.14	3.15
2005	0.37	0.03	0.06	0.14	3.02
2006	0.28	0.03	0.06	0.17	2.45
2007	0.30	0.02	0.05	0.13	2.47
2008	0.34	0.00	0.03	0.11	2.50
2009	0.49	0.02	0.05	0.10	3.69
2010	0.47	0.02	0.05	0.10	3.59
2011	0.40	0.02	0.06	0.10	3.16

The financial health of BOA was in a " gray " are for the first two years of the study period with the scope of 2.87 & 2.80 respectively in 2002 & 2003. The bank's health had shown improvement & it fall in to the healthy zone 2004. However, the health of the bank deteriorated & returned back to the "gray" area in the period 2006 to 2008 the banks. It is noticed from table 4.4 that there was a sudden imprudent in the financial health of the company in 2009 & it continued to increase through the imagining periods. This increase could be attributable to positive changes in the net profit , working capital utilization & maximum utilization of the available capital as it can be seen from the table by the values of working capital (x) and (x_2) Equity to debt (x_1) which have been showing the same trend in specified period. Table Z" score of BOA for the period from 2002 to 2011 is computed and presented in table 4 above. The data is also presented in a graphical way to depict the general trend of financial distress position of the bank.

The data is also presented in a graphical way to depict the general trend of financial distress.
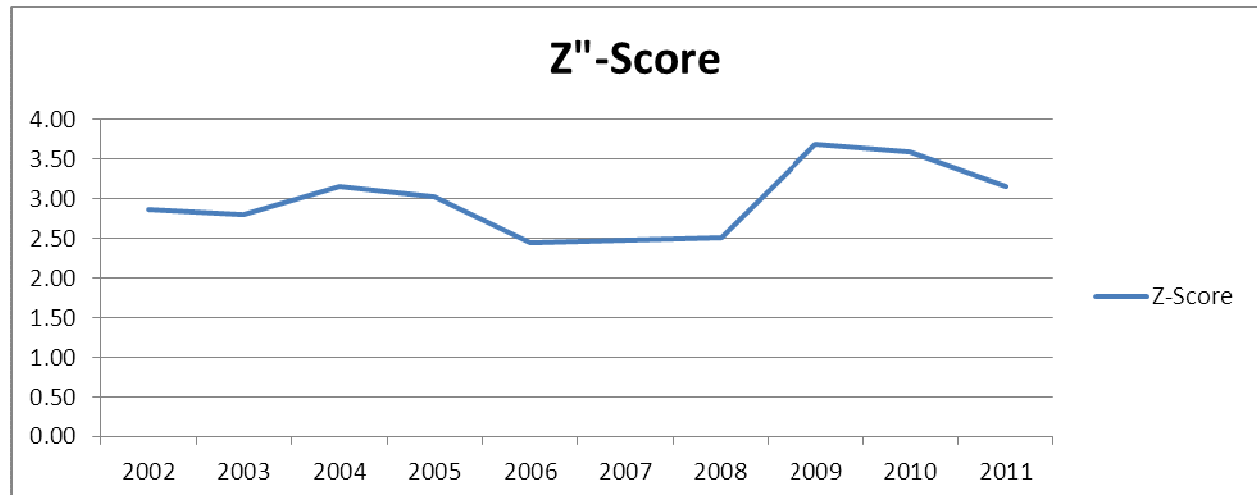
Fig 4 general trends in financial health of BOA (source: author analysis)

The graphical presentations of the financial health of the banks clearly show the unstable flow of the financial health of the Bank for the study period.

V.   Zeta Analysis of Wogagen Bank (WB)

Table below indicates Z" score of Wogagen Bank for the period from 2002 to 2011 is computed based on the (Altman1991) Model .

Table 4.5 Z score analysis of WB (source: author competition)

Year	X1	X2	X3	X4	Z-Score
2002	0.38	0.00	0.04	0.14	2.87
2003	0.38	0.00	0.03	0.13	2.80
2004	0.40	0.02	0.05	0.14	3.15
2005	0.37	0.03	0.06	0.14	3.02
2006	0.28	0.03	0.06	0.17	2.45
2007	0.30	0.02	0.05	0.13	2.47
2008	0.34	0.00	0.03	0.11	2.50
2009	0.49	0.02	0.05	0.10	3.69
2010	0.47	0.02	0.05	0.10	3.59
2011	0.40	0.02	0.06	0.10	3.16

The general trend of the financial health of the bank depicted in figure 5 indicate that the financial health of the bank has increasingly improved through at the tail end of study period. A the begging area & in 2006 the bank was in a "gray" area which not that health. But in remaining all years of the study period the banks health was. This improvement in health of bank be associated to increase in working capital to Total Asset ratio BOA & Equity to Debt ratio as it can be evidenced from the table above.
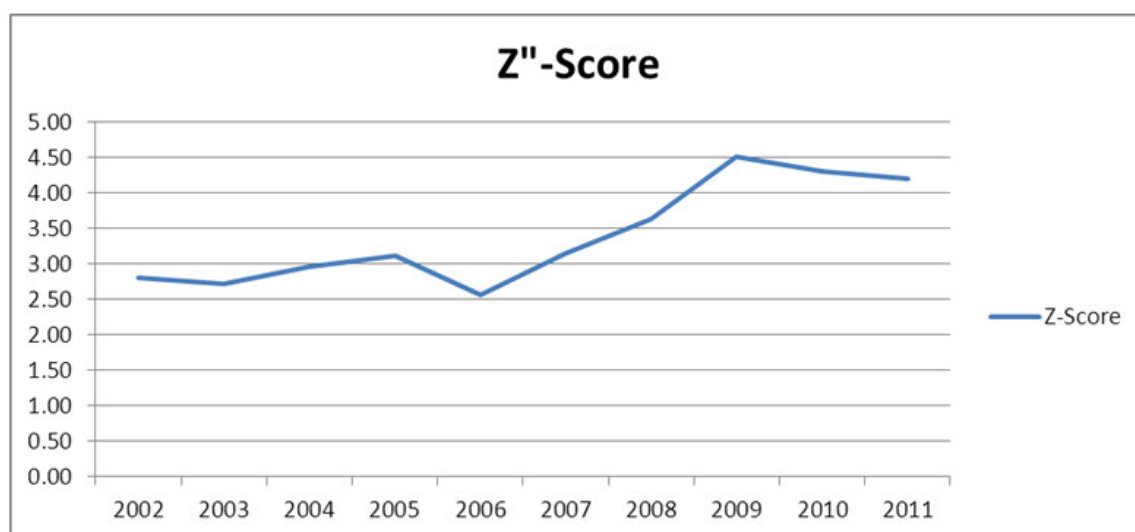

Fig 5 general trends in financial health of WB (source: author analysis)

The graph above indicates that the financial health of the bank has been fluctuating. It has shown steady improvement from the beginning 2006 through 2008 and stated to decline in the end of the year.

VI.   Zeta analysis of United Bank.

Table below indicates Z" score of United Bank for the period from 2002 to 2011 is computed based on the (Altman1991) Model .

Table 4.6 Z score analysis of UB (source: author competition)

Year	X1	X2	X3	X4	Z"-Score
2002	0.34	0.02	0.05	0.09	2.71
2003	0.33	0.01	0.03	0.07	2.46
2004	0.33	0.02	0.04	0.07	2.56
2005	0.30	0.02	0.04	0.08	2.38
2006	0.25	0.03	0.06	0.09	2.21
2007	0.28	0.03	0.06	0.10	2.39
2008	0.37	0.03	0.06	0.10	3.05
2009	0.48	0.03	0.06	0.10	3.71
2010	0.43	0.03	0.06	0.10	3.34
2011	0.42	0.03	0.07	0.11	3.41

The trend in the case of UB seems a bit different as it can be seen from table 4.6 and figure 4.6. As it can be Evidenced from the Analysis of Z" score, the bank had been in healthy zone for almost entire period covered under the study except for the years of 2003 . It is only 2003 that the bank has been in unhealthy "gray" area with Z" score of 2.87 which is the lowest score of the bank for the entire period of the study. The highest score was observed in 2010 which is 23.
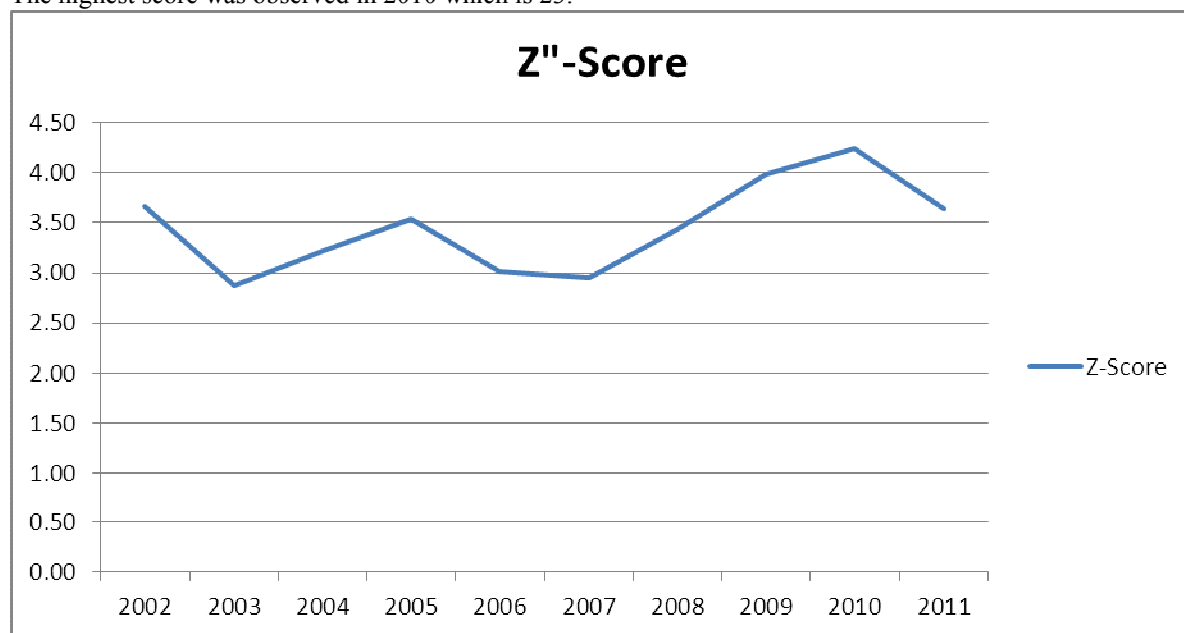

Fig 6 general trends in financial health of UB (source: author analysis)

As it can be understand from the general trend of financial health of the bank, the bank has never been distressed for the entire period of the study. IT even remain to be too healthy for almost all years of the period under study with Z" score above 2.91.

The general trend of the financial health condition of all banks is summarized in the following figure in order to easily capture the overall trend in all banks under the study.

Fig 7 general trends in financial health of all banks under the study (source: author analysis)

Conclusion

Generally, the financial health status of selected private commercial banks of Ethiopia has been healthy for the entire study period. However, the financial health of the banks was in a gray area in the early 2000s. In the beginning of 2000s almost all banks ware not that much healthy since they were in the gray area which is an intermediate zone between bankruptcy and healthy zone. The zone of gray area is undesirable area of financial health that is characterized by financial distress than healthiness. Since banks are the back bones of the economy they should be kept healthy. And they are not supposed to be in a "gray" area an area in which financial health of the firm is not good. The financial health status of these banks had a similar trend of fluctuation. Although there is continuous fluctuation in their health status it can be observed that the banks are continuously improving their health status. The Z" score of the bank has shown continuous increase despite the fact that there in fluctuation. The following figure presents the general trend of financial health all selected private commercial banks.

Recommendation

Finally, having conducted the financial distress analysis and based on the findings and conclusions of the study, the researcher recommends the following points which are believed to be important in taking care of the financial health of the selected private commercial banks. Accordingly:

- There should be more supervision from the National Bank of Ethiopia on the banks. This is due to the fact that a financial health condition of the banks is found to be fluctuating. Despite finding that indicates that the ZETA score of the banks have been in an improving trend from time to time, still fluctuation is observed a result of absence of the fixed trend in the improvement. Thus, more follow up from the regulatory body is needed for more assurance and prevention of possible bankruptcy in a worst case.
- Those banks with high ZETA score should keep it up by dealing with the factors identified to be influencing the financial health of the banks.
- The banks with low ZETA score need to work hard towards improvement of their financial healthiness. The possible measures they should take are: Decreasing their nonperforming loan ratio by increasing the loan collection efforts. Improving their capital adequacy by preserving high capitalizations of their banking system.

Bibliography

Alemayehu, Geda. "The Structure and Performance of Ethiopia's Financial Sectore in the Pre and Post reform period." *Addis Ababa University*, 2007.

Almeida, H, and T Philippon. "The Risk-Adjusted Cost of Financial Distress,." *New York University, USA.*

Altman, E, and E Hotchkiss. "Corporate financial Distress and Bankruptcy: Predict and Avoid and Invest in Distressed Debt." *John Wiley and Sons*, 2005.

Altman, E. "Bankruptcy prediction model." 1968.

ALTMAN, EDWARD I. "Multidimensional Graphics and Bankruptcy Prediction: A Comment." *Journal of Accounting Research* 21 (1983).

Amadasu, Eboye. "Evaluation of Selected Commercial Banks in NIgeria ." *Bahirdar University*, 2012: 1-56.

Andrade, G, and S Kaplan. "How Costly Is (Not Economic) Distres? Evidence from Highly Leveraged Transactions that Become Distressed:." *Journal of Finance*, 1998: 53(5), 1443-1493.

Andualem, Uffa Baza. "Determinants of Financial Distress in Selected Beverage and Metal Industries in Ethiopia." 2011.

Asquith, P, R Grtner, and Shefstein. "Anatomy of financial distress: An expalnation of Junk Bonds Issuer." *The*

Quarterly Journal of Economics, 1994: 625-658.

Berg, Daniel. "Bankruptcy Prediction By Generalized Additive Models." *The Norwegian Computing Center and University of Oslo*, 2005.

Bever, W. "Financial Ratio as predictore of Failure: Empericalresearch in Accounting." *Journal of Accounting Research*, 1966: 71-111.

Brealey, R, and Meyers. *Principles of Corporate Finance.* New York: MacGrewHills, 2000.

Bridge, Brown. "Couses of financial disstress in local banks of Africa." 1998.

Brooks, Chris. *Introductory Econometrics for Finance.* The ICMA Centre, University of Reading, 2008.

Carpeto, Maria, Scott Moeller, Anna Fealten, Valeriya Vitkova, and Leonaedo Bortolotto. "Disstress Classificstion Measures in Banking Sectore." *Mergers and Acquistions Reseach* (Cass Business School; City University of Londin), 2010.

Chang-e, , S. "The Causes and Salvation Ways of Financial Distress Companies': An Empirical Research on the Listed Companies in China." *Bejing University*, 2006.

Charalambakis, Espenlaub, and Garrett. "Leverage Dynamics, the Endogeneity of Corporate Tax Status and Financial Distress Costs, and Capital Structure." *World Bank Working Paper*, 2008.

Croissant, Yves, and Giovanni Millo. "Panel Data Econometrics inR." *The plmPackage*, 2008: 345-364.

Demiguc, Kunt, and E Detraigaialche. "The Detereminants of Banking Crises in Developing and Developed Countrie." *IMF Stuff Papers*, 1998: 81-109.

Demyanyk, Nijad, and Mahamed Hasen. "Why Banks fail? A comperhensive Prediction method." *Teheran University*, 2010.

E. Altman. "Financial Ratio, Discrminant Analyisis and Prediction of Corporate Banckruptcy." *The Journal of Finance*, 1968: 22(4), 589-609.

Ezeoha, E. Abel. "Banking consolidation, credit crisis and asset quality in a fragile banking system Some evidence from Nigerian data." *ournal of Financial Regulation and Compliance*, 2011: Vol. 19 No. 1, pp. 33-44.

Ga§eo, Edoardo, and Emiliano Santoro. "Business Failures, Macroeconomic Risk and the E§ect of Recessions on Long-Run Growth: a Panel Cointegration Approach." 2009.

Gomathy, P. "Analyisis of Profitablity and Productivity Performance of Selected Oil Refiniries in India." (Bharathisr University) 2012.

Gruszczynski, M. "Financial distress of companies in Poland', Warsaw Schoo." *International Advances in Economic Research* (Warsaw School of Economics, and Abridged) 10, no. 4 (November 2004).

Gunay, Ozkan E. Nur, and Mehmed Ozkan. "Prediction of bank failures in emerging financial markets:an ANN approach." *The Journal of Risk Finance*, 2007: Vol. 8 No. 5, pp. 465-480.

Hambrick, and D'Aveni. "Large Corporate Failure as Downward Spirial." *Administrative Science Quarterly, 33, 1-23.*, 2004: 1-23.

Hendel, I. "Competition under Financial Distress': ." *The Journal of Industrial* , 1996: 54(3), 309-324. .

Hotchkiss. "Post Bankrupcty Performance and Managment Turover." *jornal of finance*, 1995: 50(3-21).

Lizal, L. "Determinants of Financial Distress, what drives bankruptcy in a transition economy?" *William Davidson Working Paper*, 2001.

Merwin. "probabilistic bankruptcy analyisis." *Investment Management and Financial Innovations*, 1942.

Mohammad, Abu Sayeed, Edirisuriya Piyadasa, and Hoque Mohammad. "Bank Profitability: The Case of Bangladesh." *International Review of Business Research Papers* 8, no. 4 (May 2012): 157 – 176.

Muhammad., Ilman N. S, S .E, Zakaria, Adam, and Marsellisa Nindito. "*The Influences Of Micro And Macro Variables Toward Financial Distress Condition On Manufacture Companies Listed In Indonesia Stock Exchange In 2009*." *Universitas Negeri Jakarta*, 2009.

Mullu, Aberra. "Determinants of perofitablities of Banks in Ethiopian ." *AAU*, 2011.

Muluneh, Getachew. "the Efficiency Analyisis of Private Comerical banks case of Ethiopia." *Addis Ababa University*, 2007.

Muranda, Zororo. "Financial distress and corporate governance in Zimbabwean banks." *Emerald Group Publishing Limited*, 2006: VO L. 6 N O. 5 , pp. 643-654,.

NBE. "Annual Report." 2012.

Nkusu, and Muleisen. "The Link Between Nonperforming Loans (NPL) and Macroeconomic Performance." *Internationa Journal of Finance and Economics*, 2011: 232-253.

Oplre, and Titman. "Financial Distress and Corporate Performance." *The Journal of Finance* XLIX, no. 03 (1994).

Outecheva. "Corporate Financial Distress: An Empirical Analysis of Distress Risk." *Tthe University of St.Gallen. Switzerland*, 2007.

Pindado. "corporate governance in emerging capital market." *corporate governance an international review*, 2001: 8(3):258-267.

Pranowo, K, N Azam, Achsani, AH, Manurung, and Nurya. "Determinants of Corporate Financial Distress in an Emerging Market Economy Empirical ." 2010.

Purnanandam, Amiyatosh. "Do Banks Hedge in Response to the Financial Distress Costs?" *Ann Arbor, MI – 48109* (University of Michigan Business School), 2004.

Ramili, Ishak. "THE EFFECT OF CORPORATE FINANCE AND RISK MANAGEMENT ON FINANCIAL DISSTRESS." *University of Tarumanagara*, 2010.

Sahut, Jean Michial, and Median Mill. "Determinants of Banking Distress and Mergarer as A Srategic Policy to Resove Distress." *Journal of Economice Modeling*, 2011: 136-148.

Samuel, Fadare O. "Banking Crisis and Financial Stability in Nigeria." *International Research Journal of Finance and Economics* , 2011: ISSN 1450-2887 Issue 63 .

Saundra, Lewis, and Thornhill. *Business Research Methods.* New York: McGrewHill, 2007.

Segoviano, and Goodhart. "Determinants of Bank Stablity." *Journal of Finance*, 2009.

Shleifer, A., and R. Vyshin. "Liquidation Values and Debt Capacity : A Market Equilibrium Approach." *The Journal of Finance*, 1992: 47(4), 1343-1366.

Simonoff. "classical linear regression model." 2011.

Simpson, W. Gary, and Anne E. Gleason. "Board structure, ownership, and financial distress in banking firms." *INternational Review of Economics and Finance*, 1997: 281–292.

Sinkey, Jesh, David Treza, and Lucio Dince. "Pridicting the bank fialur: Zeta Model analyisis." *The Journal of Finance*, 2012: 345-371.

Sinkey, Joseph F, v Joseph, Terza Robert, and R Dince. "A ZETA Analyisis of Failed Commercial Banks." *Quarterly Journal of Business and Economics*, 2012: 35-49.

Skogsvik, , Kenth, and Sinta Skogsvik. "On the choice based sample bias in probabilistic bankruptcy prediction." *Investment Management and Financial Innovations, Volume 10, Issue 1*, 2013: 29-37.

Theodossiou, Ioannis, Euan Phimister, and Richard Upward. "Factors tha Affect the Dicission to Acquire A financially Distressed Firms in US." *University of Macedonia*, 1996.

Wheelock, and Wilson. "Do Large Banks have Lower Costs? New Estimates of Returns to Scale for U.S. Bank." *Working paper*, October 2009: 50-56.

Wheelock, D.C, and P.W. Wilson. ""Why do Banks Disappear? The diterminants of US Banks Failures and Acquitions" ." *The Rewiev of Economics and Statistics*, 2000: 127-138.

Wubshet. "the Impact of IT on Bank Performance." *ASTU*, 2012.

Zulkarnian. "Prediction of Corporate Financial Distress': Evidence From Malaysian Listed Firms During the Asian Financial Crisis." *The Journal of Finance*, 2009: 23(4),442-470.

Ephrem Gebreslassie Assa is a lecturer and researcher at Wolaita Sodo University College of Business and Economics. He received his BA in Accounting and Finance from Addis Ababa University in 2011, and Msc. In Accounting and Finance from Adama Science and Technology University in 2013. He is Currently living in Wolaita Sodo, Ethiopia.

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

Prospective authors of journals can find the submission instruction on the following page: http://www.iiste.org/journals/   All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

MORE RESOURCES

Book publication information: http://www.iiste.org/book/

Academic conference: http://www.iiste.org/conference/upcoming-conferences-call-for-paper/

IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar