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Financial Distress and Bankruptcy Prediction: Evidence from Ghana

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The frequent cases of corporate failures within the financial sector raises the need to employ models to predict beforehand the financial distressed or bankruptcy state of the financial sector. This study aims at predicting financial distress and bankruptcy on selected listed banks on the stock exchange of a developing West African country, Ghana. Data used for the study spanned from 2008 to 2014. The Altman Z-Score and Boone Indicator were the main techniques of analysis. The study concluded that poor corporate governance contributes to financial distress and that smaller board size negatively affects corporate performance. The study also concludes that, in a highly competitive industry, firms become more efficient and their performance enhance and thus are less likely to be financially distressed. Merging the listed banks indicates financial stability of listed banks albeit one distressed bank. Adoption of best corporate governance standards, enhancing competition through effective corporate strategies and the assurance from the Central Bank that banks have enough deposit insurance funds in stock to mitigate the effect of bankruptcy are some of the policy suggestions derived from this study.

Keywords: Financial Distress, Bankruptcy, Z-Score, Boone Indicator, Financial Sector

JEL Classification: G2, G3, G33.

1. Introduction

In recent past years, there have been many cases of corporate failures, companies becoming financially distressed or labeled totally bankrupt. The phenomenon is increasingly becoming worrisome in the banking industry. Many researchers have tried to predict possible financial distress/bankruptcy of many corporate entities, most of which are in the manufacturing industry.

Notably among these giants are American International Group Inc., Philipp Holzmann, Enron, WorldCom, Swissair, Parmalat, Bank of Credit and Commerce International (BCCI). These cases have sent intriguing message across the globe and helped to create awareness that, the “too big to fall” analogy is no more an excuse and that larger corporations have the same tendencies to be labelled as financially distressed

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just as smaller and medium enterprises (Outecheva, 2007). In the United States alone, from the year 2009 to 2015 about 486 banks are said to have collapsed and these has cost the country close to \$74,777.8 billion in asset worth (Federal Deposit Insurance Corporation, 2015). Before the recent 2008 financial crisis, most African countries have also had their share of bank failures. In 1960, Nigeria saw Muslim Bank, the Lagos Bank and Berini Bank go bankrupt. In Zimbabwe, The African Report (2014) reported that, the countries Deposit Protection Corporation (DPC) has closed down six failed banks namely Sagit finance house, Genesis and Royal, the Century discount house, Rapid discount house and Trust bank with a total cost to depositors of \$ 52.3 million and 11 more banks labeled as financially distressed.

Ghana is not an exception to this phenomenon, as it has also witnessed many corporate failures over the years. From 2004 to 2005 alone Ghana Airways Limited, Juapong Textiles Ltd and Divine Gold Mines all failed with assets worth \$38.2 million (Addo and Nipah, 2006). Specifically, in the banking sector, Bank for housing and construction, Meridian BIAO bank, Bank for Credit and Commerce International, Tana Rural Bank, Ghana Co-operative Bank, Tano Agya Rural Bank, the National Savings and Credit Bank, City Savings and Loans have all collapsed. Other financial institutions like Multi Credit Microfinance, Unity Trust Microfinance, Equip Susu Microfinance, Mfa Microfinance, Busy Fingers, Devine Microfinance and Emends Microfinance and recently DKM Microfinance have been shut down due to inadequate capital, fraud and regulatory laxity. The effects of these failures have dire consequences on the institutions and the general public as a whole as depositors undeservedly sometimes lose their money.

Most literatures attribute the cause of failures in corporate entities to many different reasons. Generally, poor corporate governance measures, competition within the industry, technological changes and government regulations are ranked high among the causes of failures in corporate entities.

This study therefore aimed at predicting financial distress/bankruptcy of selected listed banks on the Ghana Stock Exchange. The study also sought to find out whether poor corporate governance and competition within the banking industry have a relationship with financial distress/ bankruptcy.

A sample of listed banks on the Ghana Stock Exchange were selected and their corporate governance practices appraised and evaluated, competition within the listed banks were also measured using the Boone indicator and the stability of the banks examine using Altman's Z-score for non-manufacturing companies. The study used data from 2008 to 2014 and concluded that poor corporate governance contributes to financial distress and that smaller board size affects corporate performance negatively.

The study also concludes that, in a highly competitive industry, firms become more efficient and their performance enhanced and thus less likely to be financially distressed. Finally, only one bank out of the five banks is distressed and the remaining four banks were neither distressed nor safe.

This research adds to the talk related to Ghana's financial sector stability, particularly of the listed banks and looks to help the overall population and investors on the financial health and wellbeing of the banks listed on the Ghana stock exchange. This study is also different in many regards as there is no comprehensive study on financial stability of listed banks on the Ghana Stock Exchange (GSE). Survey of literature showed that this study is the first to use a theoretical approach such as the Boone Indicator to measure competition on the Ghana Stock Exchange.

The rest of the paper is organized as follows. Section two presents literature on the relationship between financial distress/bankruptcy on one side and corporate governance and competition on the other hand. Section three of the paper presents the method used to analyzed data. The results and discussions are presented in section four whilst section six concludes the paper with summary of findings and some policy recommendations.

2. Literature Review

Eminent failure or bankruptcy of businesses and its prediction is of great importance to various stakeholders including investors, suppliers, creditors and shareholders. A business could fail as a result of economic reasons, where a firm's revenue cannot cover its cost, financial where the firm is unable to meet its current obligations even though its asset is more than its total liabilities or bankruptcy if a firm's total liability exceeds its total assets. Whitaker (1999) found that firms become bankrupt as a result of economic distress stemming from a fall in industry operating income and poor management, arising out of incessant losses over a period of five years. Whitaker's explanations of business failure seem to agree with the economic and financial reasons given above, but differ from the fact that, the fall in operating income is as a result of poor management.

Altman (2006) assigned managerial incompetence as the most pervasive reason for corporate failures. This assertion seems to agree with the view of Whitaker that management incompetence is a main reason for

company failure. In recent times many business failures have been attributed to poor corporate governance. Corporate governance according to OECD (2008) is a set of dependable relationship between the directors, owners and other stakeholders of an entity.

Corporate governance also underpins the structural arrangements put in place to enable the entity achieve its objectives and be able to monitor and measure performance. Poor corporate governance results in inappropriate decisions, lack of supervision and oversight responsibility over company activities, poor internal controls and abuse of power by both the board of directors and management. Competition is another facet that when not properly managed would result in business failure.

2.1. Corporate Governance and Financial Distress

Corporate governance is the system by which organizations are directed and controlled (Cadbury report, n.d). Corporate governance is a set of dependable relationship between the directors, owners and other stakeholders of an entity. Corporate governance also underpins the structural arrangements put in place to enable the entity achieve its objectives and be able to monitor and measure performance (OECD, 2008).

Studies have shown and organizational theory has confirmed that the performance of corporate entities depend on the collaboration of management at the top level. It is therefore an undoubted fact that corporate governance and company leadership play an important role in company strategy formulation in order to drive towards company profitability and sustainability. Researchers such as (Gilson, 1989; Gilson, 1990; Datta and Iskandar-Datta, 1995) argued that financial distress can be associated or attributed to corporate governance. Daily and Dalton (1994) accords the fact that, there is a relationship between corporate failure and corporate governance characteristics, however, the distinction in consensus is about the different attributes that support the markers.

Huang and Zhao (2008) identified eight independent variables for measuring the cost of financial distress based on corporate governance indicators. According to Huang and Zhao, shareholder structure, board structure, agency problems and control mechanisms are the key variables that can be used to measure financial distress based on corporate governance indicators. Their work suggested that board structure and composition for instance, the chief executive officer (CEO) and board chairman duality is a symbol of bad corporate governance and not recommended as this creates conflict of interest and lack of effective leadership since the CEO is now accountable to himself. Such structures do not create the right ambiance and promote strategic thinking during periods of financial distress.

Colley *et al* (2005) also identified among many key corporate issues that tend to impact on corporate performance and as such erode the confidence of stakeholders. Her view is however different from the ones suggested by Huang and Zhao and reiterates that the most significant in the indicators is board entrenchment where majority of board members remain on the board for too long and have measurable influence and therefore are no longer interested in pursuing relevant corporate strategic goals. The result of such attitudes of the board is ineffectiveness, lack of focus on corporate objectives, insufficient inertia and subsequently collapse of corporations.

The view of board entrenchment espoused by Colley *et al* (2005) appears not to be a strong indicators of corporate governance principles. The reason being that, directors of a company cannot entrench themselves longer than the term required for directors to serve on boards and it is by shareholders vote that makes them board members and as such can vote them out.

However, their view of long serving members pursuing self-interest rather than corporate goals could be possible. Pozen (2010) in his article "The Case of Professional Boards" reiterated that, board structure, size and expertise of the members are key determinants of the success of the board to implement a company's corporate strategy and make it profitable and sustainable. He suggests that, larger board sizes stifle consensus-decision making and its time consuming and suggest that, it is suicidal to have all board members as generalist. There's the need for experts for example an accountant to head the audit committee and the rest of the members, experts in the company's main line of business. His suggestion of larger board results in consensus-decision making difficult is acknowledgeable, however, on the issue of board size, his view contradicts that of Dalton *et al* (1999) who conducted a meta-analysis of 27 studies that featured a board size variable and found having that more directors was associated with higher levels of a firm's financial performance. This result held true for firms of all sizes, but the effect of board size on performance was greater for smaller firms.

In contrast, De Andres, Azofra and Lopez (2005) analyzed ten developed markets, including the United States, and found a negative relationship between board size and firm performance as measured by 12-month equity 17 market-to-book value, although the convex patterns of results suggested negative impact decreased as board sizes were larger. Huther (1997) undertook an empirical test and his results confirm that of De Andres, Azofra and Lopez (2005) that, there are actually efficiency gains to be made by reducing the size

of boards. There is therefore a mixed stance on the issue of board size in corporate governance and performance of a company. Ultimately however, board size and expediency should not be sacrificed for the benefit of different perspectives that would be brought to the board if larger members are involved and so an appreciable number should be ideal.

2.2. Competition and Financial Distress

It is a known convention that competition induces risk in corporate entities. This risk is due to the fact that entities want to reduce the penalty of failure and thus the incentive for prudence. This phenomenon is more evident in the manufacturing and banking sector.

Studies have provided the most relevant findings on the relationship between bank competition and financial distress or failure and can be put into two categories:

1. Micro-based analysis that investigates the influence of bank competition on risk-taking and for that matter financial stability.
2. Macro-based analysis that analyses the impact of bank competition on company survival and stability.

2.2.1. Micro-based Analysis View

Risk in financial terms is the degree of uncertainty on the return of an asset. In the banking industry, risk-taking is measured by the ratio of non-performing loans to total loans in the bank's portfolio. Competition is the act of competing, rivaling for supremacy or to outwit ones competitor in order to claim maximum benefits. It could be measured by concentration and Lerner indices. One group of researchers, namely Jimenez *et al* (2008), examined the relationship between competition and bank failures based on the micro-based category. They investigated the effect of bank competition on the bank's risk-taking in a study of 107 Spanish banks. Their study found no significant impact of bank concentration, however, it did find a negative relationship between the Lerner index and risk-taking.

Alternatively, Berger *et al* (2009) used Herfindahl- Hirschman index and the Lerner index to examine the effect of bank competition on three indicators of bank risk-taking, namely non-performing loans ratio, Z-score and capitalization ratio. Berger *et al* (2009) broadened the measurement base and increased the sample size to 9,000 banks from both developing and developed countries unlike Jimenez *et al* (2008). They found that, competition has a positive impact on risk-taking banks in the developed countries but obtained ambiguous results for the developing countries. Besanko and Thakor (1993) in a prior research demonstrated that, incremented rivalry lessens the informational benefits from banking relationship and along these lines reinforces the motivating forces for risk-taking - in this manner rivalry advances bank failure.

Fungacova and Weill (2013) examined the part of bank rivalry on the event of bank failures in Russian banks from 2001-2007 and inferred that, stiffer bank rivalry enhances the event of bank failures and subsequently increased rivalry could undermine financial stability. Caminal and Matudes (2002) additionally contended that, market power ambiguously affected bank failures in which rivalry impacts bank solvency through the incentives to put invest in technologies that lessen data asymmetries and thus moral risks issues.

Turk-Ariss (2010) examines the effect of market power, measured by the Lerner index, on a marker of financial stability, the Z-score, for 821 banks from 60 nations. She found a positive impact of market power on financial stability.

Despite the fact that the above reviews affirmed a huge impact of bank rivalry on bank stability, Boyd *et al.* (2006) and De Nicolo and Loukoianova (2007) proposed contrary ideas. They examined the connection between the Herfindahl-Hirschman index and the Z-score on two distinct samples, the first from 2,500 banks from USA and the other sample from 2,700 banks from developing countries. Their results affirmed a positive effect of bank focus on bank risk, and in this way they propose that rivalry diminishes the risk of bank failures. Boyd and De Nicole view is grounded on the idea that, competition induces loan rates to be reduced and this therefore decreases the probability of defaults. They propose that loan defaults are in a perfect correlation with the probability of bank failure.

2.2.2. Macro-based Analysis View

Considering the studies done based on the macro-analysis category, two main literature investigations relates to the relationship between competition and financial distress. Beck *et al* (2006) undertook an investigation into the impact of bank concentration on the likelihood of a systemic banking crisis. Their analysis was based on a sample of 69 countries for the period 1980 to 1997, which captured 47 credit crunch episodes. Their conclusion is that, crisis are less likely in more concentrated banking systems and therefore accords to the competition fragility view espoused by Boyd *et al* (2006), De Nicolo and Loukoianova (2007).

Schaeck *et al* (2009) build on the research done by Beck *et al* (2006) and extended their work by using another option to measure bank rivalry, namely the non-basic H-measurement, and they examined the effect of bank rivalry on the event of a banking crisis and on time up to the crisis. The examination implied a sample of 45 nations, followed up in the 1980-2005 timeframe, which incorporates 31 banking crises. The primary results is that competition decreases the probability of a banking crisis and increases the run-up time to a crisis. Consequently, this research supports the 'competition stability' view.

Boone (2008) has extended the existing set of competition measures by suggesting a new measure based on the idea that efficient organizations are more highly rewarded in more competitive markets. The indicator starts from the notion that in a more competitive market, firms are punished more harshly in terms of profits for being inefficient. This analogy is in line with the efficient hypothesis which explains banks performance by difference in efficiency. Under this hypothesis, it is believed that, more efficient firms perform creditably well and achieve superior results in terms of profits and eventually market share. This therefore suggest that, efficiency is underpinned by tougher competition and this results in compelling the competing firms to produce their best in terms of performance hence the incidence of financial distress is distant from such a firm all things being equal.

2.3. Predictability of Altman's Z- score

Basically, corporate failure prediction models can be grouped or classified into three broad categories. The Statistical models, Artificial Intelligence and Expert Systems (AIES) and Theoretic Models Altman (2006) and Aziz (2006). The Altman z-score model is a model classified under the Multiple Discriminant Analysis (MDA) models as shown in Table 1 below.

Table 1. Classification of Financial Distress/Bankruptcy predictive models

| Category | Models |
|---|--|
| 1. Statistical Models | Univariate Analysis Multiple Discriminant Analysis (MDA) Linear Probability Models (LPM) Probit Models Cumulative Sums (CUSUMS) procedure |
| 2. Artificial Intelligence and Expert Systems | Recursively Partitioned Decision Trees (Inductive Learning) Model Case Based Reasoning (CBR) Model Neural Networks (NN) Genetic Algorithm (GA) Rough Set (RS) Models |
| 3. Theoretical Models | Balance Sheet Decomposition Measure Gambler's Ruin Theory Cash Management Theory Credit Risk Theories |

Source: Compiled by Researchers from Altman (2006) and Aziz (2006)

The use of the Z-score as a model to predict corporate health of companies has received recognition both in the developed and developing countries across the world. Wang and Campbell (2010) studied data from Chinese publicly listed companies for the period 2000 to 2008 to test the accuracy of Altman's Z-score model in predicting failure of Chinese companies. All Altman's models were found to have significant predictive ability. A review done by Yim and Mitchel (2005) on a study of 99 failed and 274 non-failed Brazilian firms by Elizabetsky (1976) revealed that the model correctly classified 74% of the non-failed firms and 63% of the failed firms. Gerantonis *et al* (2009) examined whether Altman Z-score model can accurately anticipate organization failures. They observed that the Altman model can demonstrate well enough in anticipating failure.

Also, Arrawi *et al* (2008) utilized Altman Z-score and ratio analysis to examine the reason behind firm bankruptcy. They reasoned that Altman's model might be utilized as an indicator and maybe may provide evidence in determining a firm's potential future bankruptcy.

Contrary to the positive conclusions on the predictability of the Z-score, Jeffry (2005) is of the view that, the model is of academic purposes and is useless in its practical application. His criticism stems from the arbitrary choice of ratios based on prevalence and popularity. The criticism by Jeffry (2005) appears sound since this model is limited in its predictability. The model does not predict actual bankruptcy neither do they estimate survival probabilities or the time to corporate failure as espoused by Jeffry (2005) in his article. Gombola *et al* (1983) argued that the omission of cash flow ratios in bankruptcy studies is inappropriate. The

empirical evidences provided above with the exception of Jeffry and Gombola *et al* points to the fact that the Z-score is helpful in predicting failure of publicly listed firms in the developed countries.

Narrowing down to the developing countries, a study by Appiah (2011) on corporate failure prediction on listed firms in Ghana revealed that, Altman's Z-score is able to predict corporate health of listed firms in Ghana dependent on company size and nature. Appiah's study focused on a sample of 15 non-failed and failed companies listed on the Ghana Stock Exchange, he tested the model through a cross-section of different firms in the manufacturing industry with dataset from 2004 to 2005.

Titshabona (2013) investigated using Altman's Z-score for non-manufacturing firms, on financial institutions listed on the Zimbabwe Stock Exchange. The dataset for the period 2011 to 2013 were used and the findings showed that 83.33% of the financial institutions were in the distress zone while 16.67% were at the grey zone and non in the safe zone. The above studies indicate that, Altman's Z-score despite its drawbacks can and is used to predict corporate failure both in the public and private sector in both manufacturing and non-manufacturing industries.

2.3.1. Altman's Z-score revisited

The core ingredients of MDA are financial ratios, these ratios coupled with their analysis still remains valuable tools for determining a company's financial health. In the MDA model, the ratios are put together into a solitary discriminate score, designated as a 'Z-score', with a range from 1.81 to 2.67. Below the low score usually specifying a distress zone and above the high score indicating a safe zone. Altman's original Z-score equation was:

$$Z = 0.012X1 + 0.014X2 + 0.33X3 + 0.006X4 + 0.999X5 \quad (\text{Equation 1})$$

Where: X1= working capital/total assets

X2= retained earnings/total assets

X3= profit before interest and tax/total assets

X4= market value of equity/book value of total liabilities

X5= sales/total assets

With the following precincts of discrimination:

$Z > 2.67$ 'safe' zone

$1.81 < Z < 2.67$ 'grey' area

$Z < 1.81$ 'distress' zone

This equation was used only to measure corporate health of manufacturing companies. The equation was later transmuted to accommodate for private and non-manufacturing companies as follows;

For private companies:

$$Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 1.0X5 \quad (\text{Equation 2})$$

The version of the Z-score for non-manufacturing companies can be estimated for as follows:

$$Z = 6.56X1 + 3.26X2 + 6.72X3 + 1.05X4 \quad (\text{Equation 3})$$

With the following areas of discrimination: $Z > 2.6$ 'safe' zone; $1.1 < Z < 2.6$ 'grey area'; $Z < 1.1$ 'distress' zone.

X1: Working capital/ Total assets (WC/TA)

Working capital is the difference between current assets and current liability. This ratio is a measure of net liquidity and therefore a low WC/TA indicates liquidity problems. This implies that, a company with negative working capital usually has difficulties meeting its short term obligations as there are not adequate current assets to cover its liabilities due. This highlights a symptom of financial distress. However, a positive working capital indicates that the firm is liquid and can meet its obligation as they fall due.

X2: Retain Earnings/ Total Assets (RE/TA)

This ratio indicates the earnings power of a company. It also is considered as a leverage ratio and companies with high retained earnings more often than not is financed from accumulated profits. Meaning that, this ratio captures the age of a firms since well-established companies tend to grow higher earnings over the life of the company as compared to younger companies. It therefore suggest that older companies are unlikely to enter into bankruptcy as compared to younger ones. Altman (2006) however noted that this ratio does not discriminate between old and younger companies and that either companies might be affected equally.

It is however a general believe that companies with a high RE/TA ratio indicates good profitability and hence less pruned to financial distress or bankruptcy.

X3: Earnings before Interest and Tax/ Total Assets (EBIT/TA)

EBIT measures a company's profitability excluding statutory obligations in the form of tax and interest charges. The ratio measures ability of management to derive profits out of the company's assets. Significantly, it measures earnings on each dollar of investment made in a company's assets.

X4: Market Value of Equity/ Book Value of Total Liability (MVE/TL)

This ratio depicts a company's worth. As expressed with Total liability indicates whether a company is financially distressed or not. The market value of equity is obtain by multiplying the total number of preferred and common stock of a company by its share price. The total liability incorporates both short term and long term liability. The ratio is an indication of how the total assets of a company can cover its liabilities. A company with high debt to equity ratio tends to move closely to insolvency if enough profits are not available to support the payment of interest expense.

X5: Sales/Total Assets (Sales/TA)

This ratio measures management efficiency in generating sales from available assets. It also measures the firm's competitive ability, as it relates to sales of products. The higher this ratio the better it is for the firm.

3. Methodology

The study environment under which this research is carried out is the Ghana Stock Exchange. Currently, there are 38 equities from 35 companies and 3 corporate bonds listed on the GSE. Among these 35 companies are only 7 companies from the banking industry, namely, Cal bank, Eco bank, Standard chartered bank, SG bank Ghana, GCB bank, HFC bank and UT bank. The research was based on five (5) out of the seven (7) listed banks due to the availability of adequate and appropriate data. Below is a table of the focused listed banks information.

Table 2. Focused Listed Banks Information

| Current Bank Name | Previous Bank Name | Symbol | Date incorporated | Date listed | Type of traded securities | Stated capital | Issued shares |
|--------------------------------|--|--------|-------------------|----------------|--------------------------------|----------------|--|
| Cal Bank Gh. Limited | Continental Acceptance Ltd and CAL Merchant Bank | CAL | 24 April, 2004 | 5 Nov, 2004 | Ordinary shares | Gh¢100,000,000 | 584,261,549 |
| Eco Bank Gh. Limited | nil | EBG | 9 Jan, 1989 | July, 2006 | Ordinary shares | Gh¢226,640,000 | 293,228,372 |
| Standard Chartered Gh. Limited | Nil | SCB | 1970 | 12 Nov, 1990 | Ordinary and Preference shares | Gh¢61,631,000 | 115,507,284 (ord.) 17,486,083 (pref.) |
| UT Bank Gh. Limited | UT Financial Services | UTB | 18 April, 1996 | 25 Nov, 2008 | Ordinary shares | Gh¢85,275,000 | 456,310,181 |
| HFC Bank Gh. Limited | nil | HFC | 7 May, 1990 | 17 March, 1995 | Ordinary shares and Bonds | Gh¢95,000,624 | 296,640,918 |

Source: Researchers Compilation from the Ghana Stock Exchange

The design used for this research is largely descriptive with focus on the nature of the research aims of the study. Each objective has an approach deemed appropriate to achieve the goals of the study.

Corporate governance rules and procedures are precise. Many researchers have agreed on several common good corporate governance indicators. These are compared to the various target companies corporate governance structures and weighted. The standard on corporate governance diagnosis was adopted and

modified from the method used by Salmon (1993) 22 questions for diagnosing your board cited in (Lorsch, 2000, p.22) and OECD principles of good corporate governance.

Similarly, the measure of competition has been extensively discussed in the literature. As competition represents a non-observable variable, the most rational procedure is to estimate it. Among many other methods available the study adopted the method known as the Boone indicator.

The model used to estimate the indicator is as follows;

$$\ln(\pi_i) = \alpha + \beta_i \ln(mc) + Dt$$

where π = Market share in operating profit terms,

MC = Cost to income ratio, a measure of efficiency.

β and α, Dt = Boone indicator and dummies, respectively.

The model considers that, competition enhances performance (market share) of efficient banks (namely, the banks with reduced operating expenses). The more $\beta < 0$ the more competitive there is in a specific market or industry, the more stable the firm is due to lower operational cost.

Lastly, the Z-Score for non-manufacturing companies is employed to measure the financial stability of the target companies. This method involves collection of data from publicized accounts of the various target companies and has unique rules and procedures.

The equation used for calculating the Z-score for the banks is as follows;

$$Z = 6.56X1 + 3.26X2 + 6.72X3 + 1.05X4 \quad (\text{Equation 3})$$

where all the variables were previously defined.

4. Results and Discussion

This section presents the findings of the study. It includes the effect of corporate governance on financial distress or bankruptcy, and also the relationship between financial distress/bankruptcy and competition in the selected banks. The result also includes the distressed or bankruptcy state of the selected listed banks on Ghana Stock Exchange.

4.1. The Effect of Corporate Governance on Financial Distress or Bankruptcy

In order to measure the level of adherence or non-adherence to corporate governance standards, among many indicators, three key indicators were adopted and used as a yardstick to measure corporate governance practices in the case study companies.

A total of eight (8) questions under the three main indicators as shown in table 3 were used to diagnose each case company and a corresponding response of YES or NO answer was obtained. A weighting of 1 or 0 was given to a yes or no answer respectively. The weighting method was adopted from San-Woo and Il Chong (2004) and Klapper and Love (2002) though their number of questions were 22 and their information was from primary sources, this was scaled to correspond to the number of questions used in this study. According to Salmon (1993) cited in Lorsch (2000), a score of 7.2 (90%) is recommended as good governance score.

Table 3. Weighted score of each case company on the three key indicators

| Diagnosing the Board | | | | | |
|--|--------------------|----------|----------|----------|----------|
| Standard Indicator | Case Company Score | | | | |
| | CAL | EBG | SCB | UTB | HFC |
| 1. Board structure and composition | | | | | |
| a. Are there three (3) or more external Directors for every inside Director? | 1 | 1 | 1 | 1 | 1 |
| b. Are the inside Directors limited to the CEO, COO and CFO? | 1 | 1 | 1 | 1 | 1 |
| c. Is the position of Board chairman separate from the CEO? | 1 | 1 | 1 | 1 | 1 |
| d. Does the Board have audit, compensation and risk management committee? | 1 | 1 | 1 | 1 | 1 |
| e. Does the various committee members include one or more independent non-executive member(s)? | 1 | 1 | 1 | 1 | 1 |
| 2. Board Size | | | | | |
| f. Is your board the right size (8 to 15) members? | 1 | 1 | 1 | 0 | 1 |
| 3. Disclosure | | | | | |
| g. Disclosure of semi annual and annual reports | 1 | 1 | 1 | 1 | 1 |
| h. Follows international standards for Accounting and audits. | 1 | 1 | 1 | 1 | 1 |
| Total Score | 8 | 8 | 8 | 7 | 8 |

Source: Researchers compilation from annual reports.

From the table above, with the exception of UTB which obtained 4 out of 5 representing 80% with respect to board size category, all the other case companies score a 100% in each of the indicator categories. The board size of UTB fell below the range suggested by (Salmond, 1993 cited in Lorsch, 2000).

All the banks with the exception of UTB scored above 90% and seems to be more financially stable as shown in the Z- Score which is a measure of stability computed in Table 4 below.

This therefore implies that financial stability may be linked to good corporate governance adherence and poor or inadequate adherence to corporate governance practices results to poor performance and in this respect smaller board size affects company's financial stability.

This result however, conflicts with studies by Yermack (1996), Eisenberg et al. (1998) and Conyon and Peck (1998) who suggested that, board size has an inverse relationship with performance. Meaning, smaller boards should appear to be more efficient than larger boards.

However, one must be careful when concluding on board size and its direct implication on company performance. Company size, nature of its business and length of time of existence may inform a company's reasons for its board size.

4.2. The Relationship between Financial Distress/Bankruptcy and Competition

It is normally stated that in industries or companies with increasing competition, inefficient operating companies are pushed more harshly than those that are efficient. It therefore implies that, comparing the relative profits between companies of arbitrarily efficient and those with greater efficiency contains some level of information about competition.

It is against this background that the results below are underpinned. Competition is estimated using the Boone indicator as shown in the figure below (Figure 1).

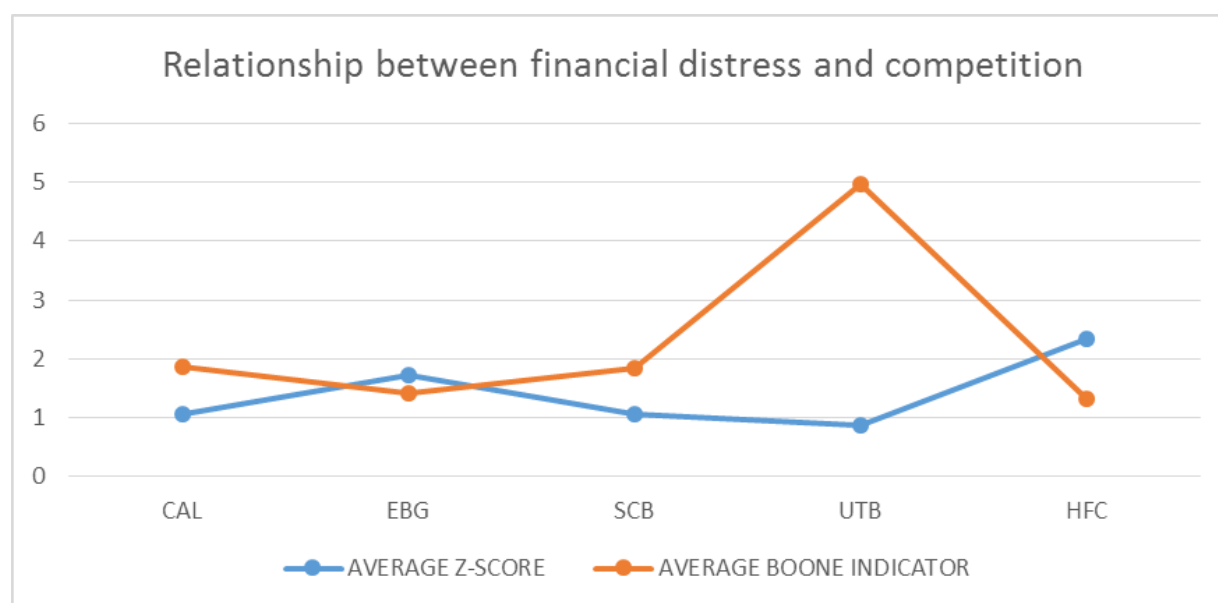


Figure 1. Graph of the relationship between financial distress and competition

According to Boone (2008), competition rewards efficiency. The higher the competition within an industry, the more companies tend to be efficient by reducing their operational cost and increasing operating income. This therefore implies that, the more the Boone indicator approaches zero or negative, the higher the competition and the more rewarding it is to efficient firms to become more stable in financial terms.

From the graph above, HFC had the least average Boone indicator of 1.31 with a corresponding highest Z-score of 2.35 followed by EBG with a Boone indicator of 1.42 and a Z-score of 1.72. SCB, CAL and UTB had Boone indicators of 1.84, 1.87 and 4.97 respectively with a corresponding Z-scores of 1.07 for both SCB and CAL and 0.87 for UTB respectively. It therefore implies that, the most efficient bank that was able to adequately reduce its operational cost is HFC with a Boone indicator of 1.31 and the least was UTB with a Boone indicator of 4.97.

Similarly, the case company with the least Boone indicator (HFC) score the highest Z-score indicating financial stability and the company that had the highest Boone indicator (UTB) score the least Z-score mark and thus confirming the Boone indicator theory that, competition enhances the performance of a highly efficient firm and thus promotes financial stability and less likely to be distressed.

The high competition was triggered by the deadline for meeting the Bank of Ghana directive on the minimum capital adequacy requirement for commercial banks in 2010 and 2013. Therefore, all the banks were seen striving towards meeting that directive.

Generally, the economic environment within these period was faced with stiff cost rises from inflationary pressures, exchange rate fluctuations, and increased prices of petroleum products that are used to fuel powered generators. It is therefore expected that competition would be stiff and banks will therefore employ the best of strategies to contain these pressures.

The most efficient banks were those that were able to implement cost cutting strategies to reduce their cost to income ratio drastically. These strategies to a large extent did have a positive impact on the banks efficiency and making them more stable since the industry operating cost was of a lower magnitude than growth in industry income resulting in more profitability (Ghana Banking Survey, 2014 p.49).

4.3. Financial or Bankruptcy State of the Selected Banks

Table 4. Z-Score of selected case study companies

| Year | CAL | EBG | SCB | UTB | HFC |
|------|------|------|------|-------|------|
| 2008 | 0.67 | 1.38 | 1.43 | 2.27 | 2.00 |
| 2009 | 1.46 | 1.33 | 0.54 | 2.18 | 3.42 |
| 2010 | 0.66 | 1.93 | 1.29 | 1.27 | 1.53 |
| 2011 | 0.41 | 0.51 | 0.82 | 0.20 | 1.61 |
| 2012 | 0.74 | 0.27 | 0.56 | 0.73 | 2.86 |
| 2013 | 1.58 | 3.32 | 1.68 | 1.21 | 2.54 |
| 2014 | 1.97 | 3.26 | 1.14 | -1.80 | 2.49 |

Source: Computed by researcher from annual reports of the banks

From the table above (Table 4), CAL and SCB recorded an average Z-score of 1.07. This means that, CAL and SCB according to Altman (2008) are considered to be in the “grey” zone. This zone means that, the company has the likelihood of moving or falling into the safety zone or distressed zone if management do not take measures to prevent it.

Furthermore, these two banks had a range within the grey zone in the individual years Z-Score. CAL began at a distressed position in 2008 and moved out of the distressed zone in 2009 only to return in 2010, 2011 and 2012 and emerged back to the grey zone at a Z-Score of 1.97 in 2014. Likewise, SCB in 2008 was in the grey zone and in 2009 fell to the distressed zone since its Z-Score was below 1.1.

The bank survived the following year but fell victim to a distressed state in 2011 and 2012 and since has managed to remain out of the distressed zone. The bank recorded a Z-Score of 1.68 and 1.14 in 2013 and 2014, respectively.

ECB had in its later years had a Z-Score of 3.32 and 3.26 in year 2013 and 2014 respectively. This places the bank in the safe zone. However, on the average of the seven-year period, the bank recorded an average Z-Score of 1.72. Meaning that, it is in the range of the grey zone. Also, HFC is another bank that saw its Z-Score in 2009 and 2012 within the safe zone.

The other years within the period all fall within the grey zone. The bank recorded an average Z-Score of 2.35, the highest average Z-Score recorded within the five banks measured during the period. UTB recorded an average Z-Score of 0.87 meaning that, UTB falls below 1.1 and therefore is financially distressed according to Altman’s measure.

Taking a deeper look at the individual year on year Z-Score, it can be deduced that, the banks stability has been on the decline from the year 2008 with a Z-score of 2.27 to 2014 with a Z-score of -1.80. Below is a graphical presentation of the Z-scores (Figure 2).

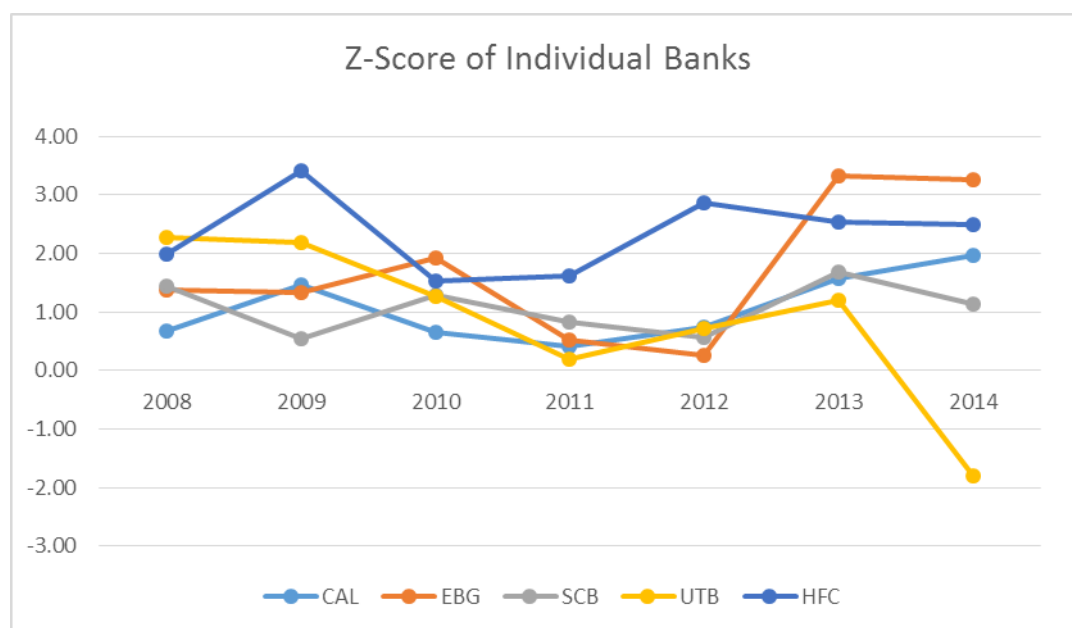


Figure 2. Graphical presentation of Individual banks Z-Score

Table 5. Summary table of total Z-Score of the five (5) Banks

| Year | X1 | X2 | X3 | X4 | Total Z-Score |
|------|---------|--------|--------|--------|---------------|
| 2008 | 0.0058 | 0.0107 | 0.0696 | 9.0173 | 10.01 |
| 2009 | -0.0197 | 0.0192 | 0.101 | 8.8472 | 9.90 |
| 2010 | 0.0176 | 0.0132 | 0.0912 | 12.398 | 13.79 |
| 2011 | -0.0689 | 0.0154 | 0.0772 | 9.358 | 9.94 |
| 2012 | -0.0706 | 0.0273 | 0.0895 | 3.7293 | 4.14 |
| 2013 | 0.1613 | 0.0315 | 0.1051 | 3.9368 | 6.00 |
| 2014 | 0.0921 | 0.0285 | 0.1068 | 4.0858 | 5.70 |

Source: Computed from annual reports of case companies.

From table 5 presented above, the ratio of working capital to total assets (X1) of the banking sector in 2009, 2011 and 2012 showed approximately -2%, -7% and -7% respectively. This implies that, the industry had liquidity problems and was unable to meet their current obligations as they fall due. The situation improved at the later end of 2013 and 2014 with an increase in the ratio to 16% and 9% respectively. An average of approximately 2% is obtained for this ratio over the seven years' period. The ratio of retained earnings to total assets (X2) progressively increases over the period.

An average ratio of 2.1% is recorded for the sector. This is a sign of profitability though the increase is not significant. The sector had a good profit before interest and tax over total assets ratio (X3) over the period with the peak being the last three years of the period recording a ratio of 8.9%, 10.5% and 10.7% respectively. Averagely the sector recorded a ratio of 9% implying that for every one Ghana cedi invested in assets, a return of 9% is derived from managing those assets. This ratio is significant for the industry because it tells how much profits are available to meet statutory obligations such as taxation and interest.

The sectors performance in market value of equity to book value of total liabilities ratio (X4) is impressive with the early years of 2008 to 2010 showing 9, 8.8 and 12 times of market value of equity to book value of total liability. Averagely the sector recorded a 7:1 times the sectors market value to its total liabilities. The Z-Score of the whole sample banks under study reveals that, for the period 2008 to 2014, the banks as a whole are beyond the safe zone as suggested by Altman (2008). None of the year on year Z-Score is below the 3 indicator. This implies that, the sectors banks put together is in a stable position and far from financial distress/bankruptcy. However, as seen earlier, the assessment of each bank individually revealed otherwise.

5. Conclusions and Recommendations

The aim of this paper was to assess the financial distress or bankruptcy state of listed banks on the Ghana Stock Exchange. The analysis was based on five listed banks based on data availability from 2008 to

2014. The paper also assessed the effects of competition and corporate governance on financial distress position of the banks. The measurement of each of the objectives of the study was explicitly defined to suit each parameter especially the Boone indicator (competition) and the Z-Score (non-manufacturing) companies.

5.1. Conclusions

The study shows that companies that practices good governance principles is seen to be financially stable and thus distances itself from being financially distressed. Furthermore, found that smaller board size has negative effect on corporate performance. Thus, a poor corporate governance practice does contribute to poor financial performance of a company and especially, smaller board size affects corporate performance negatively.

Again, the study concludes that post 2010 of the banking industry was generally highly competitive. This pushed inefficient banks to perform poorly and motivated the efficient banks to become more efficient, controlling and reducing operational cost and increasing operating income and thus becoming more profitable and stable. The study therefore asserts that competition within the banking industry enables efficient banks to be more financially stable and less likely to be distressed and thus confirms the Boone indicator theory.

Finally, study was undertaken to measure the distress/bankruptcy state of the selected listed banks and found out that, individually, four (4) of the selected banks have their average Z-Score between 1.1 to 2.6 and therefore classified in the grey zone and only one (1) bank has its average Z-score below 1.1 and therefore was classified as distressed. The four (4) out of the five (5) banks representing 80% of the selected banks are neither distressed nor classified as safe.

5.2. Policy Recommendations

The boards of the banks should adopt all best and recommended corporate governance standards such as those suggested by the Organization for Economic Co-operation and Development (OECD) on the constitution of audit, risk, and compensation committees with more independent non-executive members and ensure that they are implemented thoroughly. Shareholders should endeavor to advocate for and elect experienced, well diversified, experts on boards with appropriate sizes (at least 8 to 15 members) to represent their interest and safe guard their investments

It is also recommended that, management of the various banks should accept competition and see it as an opportunity rather than a treat to enable them strategies more effectively to become market leaders. Management should also implement policies that help in ensuring operational cost control and increasing income. An example, is adopting automation of some manual transactions. This would reduce staff cost and pension contributions and increase income generation.

The Central bank should ensure that, the banks classified under the grey zone have enough deposit insurance funds in stock. This would help reduce the impact if any of the banks become financially distressed. There is also a need for the supervisory bodies to shift focus on liquidity levels of banks. Many banks have become rapidly distressed for lack of liquidity resulting in limited investment opportunities which ultimately affected their financial stability. More consciousness on risk management techniques and managerial competence towards liquidity management need to be considered in further policy development.

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