

Effect of bankruptcy risk on value of conglomerate firms in Nigeria

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ABSTRACT

The study examined the effect of bankruptcy risk on value of conglomerate firms in Nigeria. Ex post facto design was used and data for the study was collected from the Nigerian Exchange Group (NGX Group) Factbook covering from 2017-2021. The design was used since the data is secondary in nature which cannot be manipulated. The study used key proxy variables of leverage (LEV), liquidity (LIQ), profitability (PROF) and firm size (FS) as a measurement for bankruptcy risk while firm value on the other hand, was proxy using net assets per share (NAPS). Four hypotheses were used in the study while regression model was employed in the data analysis. The results of the study indicate that profitability, liquidity, leverage and company size significantly impacted firm value in Nigeria at 1-5% significant level. The study concludes that bankruptcy risk has influenced firms' value over the years. Hence, the study is crucial as it exposes the influence of bankruptcy risk on firms value in Nigeria. The study's outcome should be considered as a signal to company managers when considering their liquidity position, leverage, profitability and company size, as it could be an indication for corporate bankruptcy risk.

Keywords: Bankruptcy risk, Leverage, Firm value, Firms size, Liquidity, Profitability.

JEL Classification: G33; G32.

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Highlights of this paper

- Studies have shown that bankruptcy risk is one of the current and discussed topics in the financial field as a result of collapse of large companies in the world.
- Hence the present study examined the consequential effect of bankruptcy risk on value of business organizations as it could threaten the continued existence of firms.
- Findings of the study indicate that bankruptcy risk has significant effect on firms value.

1. INTRODUCTION

The recent global financial crisis has shown that even the well doing companies need to consistently trail their financial position and situation. The incident increased the uncertainty in the viability of companies. The nature and interconnections between all the worlds' economic and financial markets nowadays are becoming a feature of modern business rather than a state of emergency. Hence, in times of prosperity, no firm could be sure of its future. A lot of companies were at the risk of bankruptcy globally as result of financial crises which began in mid-2008. In addition, as a result of structural increase in bankruptcies risk worldwide, a detailed analysis of bankruptcy risks have been considered indispensable today than it was in the past (Abdullah, 2016).

Bankruptcy is a continual process, as several phases can be distinguished from appearance of the first signal for financial crisis, through ignorance to the financial and non-financial crisis syndrome of a company, to inordinate activities leading to the last phase of the crisis referred to as bankruptcy. Bankruptcy proceedings can last up to five-six years as it is not event that cannot be predicted. Also the early warnings signal is recognized (Baimwera & Muriuki, 2014).

Studies have shown that the risk of bankruptcy is now one of the current and discussed topics in the financial field as a result of collapse of large companies in the world and its consequential effect on business organizations. Thus threaten the continued existence of firms. Hence, the renewed interest among academics, scholars and practitioners to investigate what determines bankruptcy risk at the firms' level.

From the a priori expectations, there is an existence of a gap in knowledge and literature regarding firms-specific determinant of bankruptcy risk in Nigeria. Most studies on bankruptcy risk carried out in the country had special focus in the banking sector, particularly on the determinant of banks' distress, but more importantly, no specific study had focused on the conglomerate sector of the Nigerian Exchange Group. Hence, the need for the present study. Also, the controversial conclusions reached in developed and developing countries calls for further studies as there is no agreement on effect of bankruptcy risk on firm value in Nigeria. To achieve the purpose of the study, the following hypotheses were formulated;

H₀₁: Profitability has no significant effect on value of conglomerate firms in Nigeria.

H₀₂: Liquidity has no significant effect on value of conglomerate firms in Nigeria.

H₀₃: Leverage has no significant effect on value of conglomerate firms in Nigeria.

H₀₄: Firms' size has no significant effect on value of conglomerate firms in Nigeria.

2. CONCEPTUAL FRAMEWORK

2.1. Bankruptcy Risk

According to Abdullah (2016), bankruptcy risk is the risk that a person, or especially a company, will be unable to service their debts. The risk of bankruptcy is greater if the person or business has little or no cash flow or if it mismanages its assets. Banks assess the risk of bankruptcy when considering a loan. It is also known as insolvency risk.

Bankruptcy risk indicates the likelihood of an individual to file for bankruptcy. Though it had been used to assess credit risk for over twenty years. Bankruptcy risk is related to credit score, but unlike credit scores, it's scores are not

sold out to credit bureaus. Consequently, individuals do not have the knowledge of what their bankruptcy risk scores and also how to improve them. In addition, because there is no specific measurement index, consumers generally have difficulty contextualizing their scores on a standardised scale (Honjo, 2000).

Also, bankruptcy risk is referred to as an analysis of debt which gives lenders the ability to assess a customers' risk regarding loan taking (Thim, Choong, & Nee, 2011).

2.2. The Causes of Business Bankruptcies

In literature, there is a consensus concerning the classification of causes of corporate bankruptcies. According to Andrade and Kaplan (2018) the causes are divided into:

i. Exogenous causes related to a country's overall economic position and situation, including the exchange rate policies of government agencies, monetary and fiscal policies. Corporate organizations can't influence these factors, but they do influence their financial situation, such as solvency. It's possible distinguishing the factors that affect corporate organizations equally, and the factors that only affect certain corporate organizations. An example of the first set of events is recession in the country while the second type of factors that affect corporate organizations differently is a change in exchange rates.

ii. Endogenous causes which includes;

- a. The neoclassical. This is associated with inefficient asset allocation. From this point of view, the liquidation of an inefficient company has a positive effect on the effectiveness of a nation's economy.
- b. Financial group. This group has a challenge of inadequate funding. In this group of bankruptcies, rational funding and optimal liquidity play an important role.
- c. Causes related to poor governance. Thus, an insolvent company has the liability and asset structure but not managed properly. Managers lack sufficient knowledge and/or experience.

2.3. Determinants of Bankruptcy Risk

2.3.1. Profitability

Profitability is a measure of the organizational efficiency. Also, owners, creditors and the company are interested in organizational profitability. Omaliko and Okpala (2020) see profitability as a measure of firm financial health over a specific period of time. This is only possible if the company generates enough profits (Campbell, 2011). In general, there are two main types of profitability metrics: (i) profitability relative to sales and (ii) profitability relative to investment. This is measured as return on equity (ROE) expressed as net profit after tax (NPAT)/Equity as used in the study by Ahmad (2013).

2.3.2. Liquidity

According to Wilson (2013) liquidity measures the short-term ability to meet maturing liabilities and unexpected liquidity needs. Liquidity metrics also assess the company's ability to meet its ongoing obligation. Liquidity requires cash preparation and cash flow plans. However, liquidity metrics provide a quick measure which relates current liabilities to current assets. Hence, a company should ensure that it hasn't liquidity challenges. If a company couldn't meet its liquidity obligation, it does a lot of harm to the firm which consequently could lead to the closure of the company. Even too much liquidity is bad; as idle assets is of no use. Therefore, it's necessary to find an appropriate balance in firm's liquidity.

Liquidity is however measured using current ratio (CR) which is expressed as current assets (CA)/current liabilities (CL) as used in the study of Tesfamariam (2014).

2.3.3. Leverage

According to Kristanti, Rahayu, and Huda (2016) leverage shows the value of debt capital used in a company’s capital structure. It’s an admixture of funds provided by lenders and owners which could be determined from the items of financial data. There are variations on leverage ratios; however, all the metrics head to same direction. Leverage ratio also determines the extent to which a firm is funded by debt (Kristanti et al., 2016).

2.3.4. Firms Size

According to Wesa and Otinga (2018), there are companies of different sizes in an industry. The production costs vary in firms of different sizes. Economists are very much concerned about the business size unit, i.e. a firm where the average unit production cost is at its lowest point. In order to clearly understand the concept of business-unit size, it is suggested to consider the discrepancies in those terms, i.e. the plant, the industry and the company. This is captured as the log of total assets of firm as used by Wilson (2013).

2.4. The Diagram of Conceptual Model

The conceptual model which exposts the relationship between corporate bankruptcy risk and firm value is show on Figure 1 as thus;

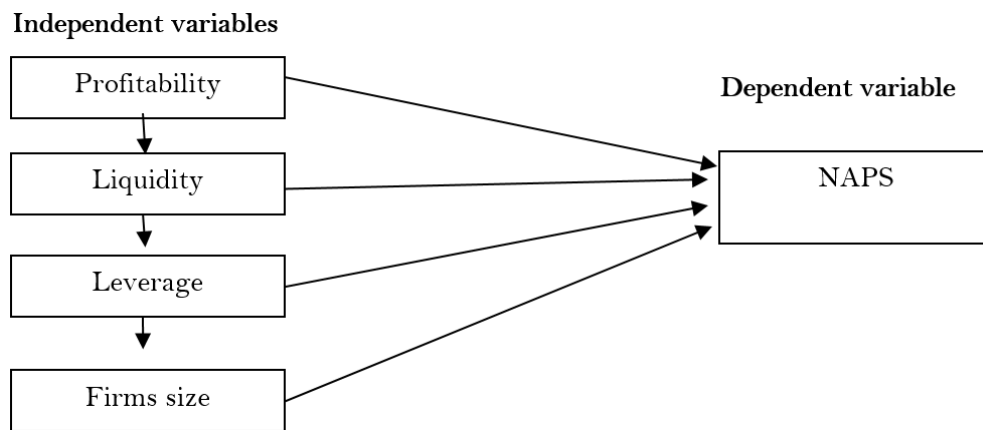


Figure 1. Conceptual model.

Figure 1 illustrates the relationship between the determinants of corporate bankruptcy risk i.e profitability, liquidity, leverage & firm size and firm value proxy as net assets per share.

3. THEORETICAL FRAMEWORK

3.1. Maximization of Social Welfare Theory

Maximizing social welfare theory was put forward by Ghosal and Miller (2003). The theory states that social welfare could be achieved when financially troubled companies are liquidated and continued to operate. This is as a result of the fact that creditors have interested in the availability of assets and also the ability of the assets to meet their total claims than in the prospect of bailing out the firm. The creditors seek to confiscate all the available assets, which may lead to gradual liquidation (Ghosal & Miller, 2003).

When a company suffers only financial woes, maximizing the bankruptcy state’s total payout to creditors can only be achieved if the company continues to exist. The joint determination and creditors’ cooperation is sine qua non in saving a company and the creditors are obliged to coordinate their collective efforts. Hence, the coordination effort

can sometimes be high. Nevertheless, if the piecemeal liquidation of distressed firms is carried out without regulation, reasonable financial balances can exist (Ghosal & Miller, 2003).

Adler (2002) posits that a bankruptcy system can avoid inefficient equilibria by delaying the collection efforts of the creditors until such a time when the government official decides on the future of the firm. Indeed, the liquidating government official should only auction insolvent firms that are free from current claims. Whatever proceeds obtained including surpluses (if any) should be, distributed to the claimants-creditors. The position taken by Baird and Rasmussen (2003) is that the liquidator should decide on the option of either piecemeal or bulk disposal. Liquidation by piecemeal is more advantageous option when maximizing the economic value of the company, when the disposal of individual assets results in a higher value than the disposal of the company outright. Alternatively, if a higher value offer ensures the going concern of the business, the business could be sold as it is. Hence, the study is based on the theory of maximizing social welfare, as the theory explains all the phenomena behind bankruptcy and the risk of bankruptcy in corporate organizations.

3.2. Empirical Review

3.2.1. Profitability

Tesfamariam (2014) used ordinary least square (OLS) in his study on the determinants of bankruptcy risk in joint-stock manufacturing companies in Addis Ababa, Ethiopia, and found a positive association between bankruptcy risk and profitability. This indicates that profitability is a determinant of bankruptcy risk. Fredrick (2018) on corporate bankruptcy risk and capital structure of manufacturing companies in Nigeria used a regression model and found that capital structure and bankruptcy risk are negatively related.

Empirical investigation by Baimwera and Muriuki (2014) analyzing determinants of corporate insolvency risk shows that profitability is negatively related to bankruptcy risk using the regression model. This indicates that profitability is not a determinant of bankruptcy risk. Similarly, Campbell (2011) documented that profitability is inversely related to bankruptcy risk. The study focused on predicting bankruptcy risk and distressed stock performance using OLS.

3.2.2. Liquidity

Elloumi and Gueyie (2011) on bankruptcy risk and corporate governance has shown that increasing liquidity reduces bankruptcy risk. Therefore, the study notes that liquidity determines of bankruptcy risk. Similarly, Thim et al. (2011) research on factors affecting financial distress using the regression model shows a negative association between financial distress and liquidity. Contrary, the study of Gathecha (2016) on the impact of bankruptcy risk on the financial distress of listed companies on the Nairobi Securities Exchange, using multivariate analysis. The study shows that liquidity is positively associated with financial distress.

3.2.3. Leverage

The study by Andrade and Kaplan (2018) reported that a key factor determining financial distress of companies is leverage. The company's gearing ratio gives indication of the value of debt used by the company and as well measured as the ratio of total equity to total debt. The relationship which exists between corporate financial distress and leverage has shown conflicting results in the literature. A study conducted by Ahmad (2013) in his study predicting the risk of corporate bankruptcy using a regression model and found that the risk of corporate bankruptcy increases as corporate indebtedness increases. The study shows that leverage is a determinant of bankruptcy risk.

Similarly, studies by [Abdullah \(2016\)](#) showed that the link between financial distress and leverage is positive. However, the study on the determinant of bankruptcy risk in Indonesian conducted by [Kristanti et al. \(2016\)](#) found that leverage is not a determinant of bankruptcy risk. Similarly, [Tesfamariam \(2014\)](#) in his study on the determinants of bankruptcy risk, points out that leverage has a negative association with the bankruptcy risk of firms. Also, the results of [Baimwera and Muriuki \(2014\)](#) analyzing the determinants of corporate bankruptcy risk showed that leverage did not have a significant impact on corporate bankruptcy risk. The study concludes that leverage is not a determinant of bankruptcy risk.

[Wesa and Otinga \(2018\)](#) examined the factors influencing corporate bankruptcy risk in Kenya, using multiple regression, the study found that liquidity, financial leverage and capital structure were the main significant factors influencing corporate bankruptcy risk in companies in Kenya. [Asquith, Gretner, and Schafstein \(2014\)](#) showed that firms respond to distress by restructuring bank debt, government debt, and asset sales. On average, financially troubled companies would have to sell 12 percent of their assets to implement their restructuring plans, such as paying off senior private debt.

3.2.4. Firms Size

[Honjo \(2000\)](#) noted that small firms are more likely to dwindle than large firms due to poor market experience, limited resources and connections. The study uses regression model and shows that the size of firm is one of the most important determinants of firm financial distress.

[Chancharat \(2018\)](#) has shown that the likelihood of financial distress will increase as the size of the company increases. The study used OLS and concludes that the financial burden increases with company size. The study found that firm size is a determinant of bankruptcy risk

Similarly, on factors affecting financial hardship, [Thim et al. \(2011\)](#) points out that the association between firm size and financial hardship using the regression model is positive. Also, the study predicting financial difficulty and bankruptcy in public companies using accounting, market and macroeconomic variables conducted by [Wilson \(2013\)](#) confirmed that company size using the regression model was inversely related to financial distress and the bankruptcy risk. The study finds that the size of a firm is a determinant of bankruptcy risk. A study by [Kristanti et al. \(2016\)](#) on the determinant of bankruptcy risk in Indonesian found that the relationship between bankruptcy risk and firm size is negative. The study shows that company size does not determine the financial distress of companies.

4. METHODOLOGY

Ex post facto design is used as the research design. This was used to examine, describe and predict the effect of the explanatory variables (PROF, LIQ, LEV and FS) on the dependent variable (NAPS). Also, we used an ex post facto research design as our data is pre-existing secondary data that cannot be controlled or manipulated. The secondary data source used is from the Nigerian Exchange Factbook with data from 2017 to 2021. The study population includes all listed conglomerates of the Nigerian exchange group (NGX Group). It includes Chelleram Plc, UACN Plc, John Holt Plc, Transnational Corporation of Nig Plc, SCOA Nig Plc. On this basis, a total of five companies made up our sample size with twenty-five observations.

Data analysis was done using multiple regression with the aid of SPSS version 20. This helped predict the effect of the (PROF, LIQ, LEV, and FS) on (NAPS). Durbin Watson Statistics, Variance Inflation Factor (VIF) and Tolerance Value (TV) were employed for autocorrelation of the variables.

Decision Rule: Reject H_0 if P-value < 5% significant level otherwise accept H_0 .

4.1. Measurement and Operationalization of Variables

Firms value which is the dependent variable was proxy using Net Assets Per Share as used by Tesfamariam (2014). The independent variable on the other hand for the study (bankruptcy risk) was proxy using profitability (ROE) as used by Ahmad (2013) liquidity (CR) as used by Tesfamariam (2014) leverage (DR) as used by Ahmad (2013) and firms size (LTA) as used by Wilson (2013).

4.2. Model Specification

The study modified the Models of Tesfamariam (2014) and Baimwera and Muriuki (2014) in determining the effect of bankruptcy risk on firms value. This is shown below as thus Tesfamariam (2014):

$$AMZ = \beta_0 + \beta_1 PROF + \beta_2 LIQ + \beta_3 LEV + \mu \tag{1}$$

Equation 1 presents in equation line the relationship between bankruptcy risk proxy as profitability, liquidity & leverage and firm value proxy as Altman Z-Score. Hence, Equation 1 argues that profitability, liquidity & leverage determine firm value captured as Altman Z-Score (Baimwera & Muriuki, 2014):

$$NAPS = \beta_0 + \beta_1 FS + \beta_2 LEV + \beta_3 PROF + \mu \tag{2}$$

Equation 2 presents in equation trend the relationship between bankruptcy risk proxy as firm size, leverage & profitability and firm value proxy net assets per share. Thus, Equation 2 argues that firm size, leverage and profitability determine firm net assets value.

The regression modified for this study is shown below as thus:

$$NAPS_t = \beta_0 + \beta_1 PROF_t + \beta_2 LIQ_t + \beta_3 LEV_t + \beta_4 FS_t + \mu$$

Where:

NAPS = Net assets per share.

PROF = Profitability.

LIQ = Liquidity.

LEV = Leverage.

FS = Firm size.

Table 1. Descriptive statistics.

Variable	Mean	Std. deviation	N
NAPS	4.10	0.06	25
PROF	11.1	12.1	25
LIQ	23.1	5.07	25
LEV	21.1	4.08	25
FS	18.0	1.03	25

Table 1 presents that the mean value of net assets per share (NAPS) among the sampled firms was 4.01. This implies that NAPS is determined by the determinants of bankruptcy risk at a degree risk of 0.06. The mean value of profitability (PROF) for the sampled firms' was 11.1. This means that firms with PROF values of 11.1 and above are high profit making firms at a high degree risk of 12.1%. The average liquidity (LIQ) value for the sampled firms' was 23.1. This implies that firms with LIQ values of 23.1 and above are firms with optimum liquidity level at a degree risk of 5.07%. Thus, liquidity determines firms value. The mean value of leverage (LEV) for the sampled firms' was 21.1. This means that firms with LEV values of 21.1 and above are debt intensive firms. Hence leverage determines firms value. Also, the mean value of firm size (FS) was 18.0 which implies that firms size determines firms value.

4.3. Data Analysis

Collinearity Statistics was carried out as exposted on Table 2 so as to determine if there is multi-collinearity existence.

Table 2. Collinearity statistics.

Tolerance value	VIF
0.19	5.35
0.29	3.40
0.73	1.36
0.68	1.48
Mean value 0.47	2.89

The TV from the above table range from 0.187 to 0.676 which is an indication of non multi collinearity. Also the VIF values of 5.347 to 1.479 also connotes non multi collinearity existence.

Table 3. Result on effect of bankruptcy risk on value of conglomerate firms in Nigeria.

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized coefficients		Collinearity statistics		
		B	Std. error	Beta	T	Sig.	Tolerance	VIF
1	(Constant)	0.894	0.207		4.318	0.034		
	PROF	0.674	0.086	0.764	7.837	0.002	0.187	5.347
	LIQ	0.629	0.073	0.656	8.616	0.000	0.294	3.401
	LEV	0.245	0.045	0.124	5.444	0.023	0.734	1.362
	FS	0.654	0.186	0.751	3.516	0.050	0.676	1.479

Note: a. Dependent variable: NAPS. R² 0.650, Adjusted R² 0.522, Prob (F-statistics) 0.0000, F Stat 4.045, Durbin-Watson Stat 2.004.

4.4. Test of Hypotheses

The R² from the above table gives 0.650 which is an indication that the model covered 65 per cent of the total variation in dependent variable. This connotes that (PROF, LIQ, LEV and FS) can only explain 65 per cent of change in firms’ net assets per share leaving 35 per cent unexplained. Hence, there are other factors that led to bankruptcy risk other than net assets per share.

The sig-value of 0.0000 is less the 5% level of significance adopted; thus, the study noted that the model is statistically significant.

4.5. Discussion of Findings

H₀: Profitability has no significant effect on value of conglomerate firms in Nigeria.

The result of the analysis as shown on Table 3 indicates that the relationship between net assets per share (NAPS) and profitability (PROF) is significant and positive. The P-value of 0.002 is less than 1% significant level adopted. Also, the coefficient of 0.674 indicates that increase in PROF increases NAPS by 67.4%. We therefore accepted alternate hypothesis that states that profitability has significant effect on value of conglomerate firms in Nigeria. The implication of this is that; profitability influences firms net assets per share.

H₀: Liquidity has no significant effect on value of conglomerate firms in Nigeria.

Table 3 also reveal that the relationship between net assets per share (NAPS) and liquidity (LIQ) is significant and positive. The P-value of 0.000 is less than 1% significant level adopted. Also, the coefficient of 0.629 indicates that increase in LIQ increases NAPS by 62.9%. We therefore accepted alternate hypothesis that states that liquidity

has significant effect on value of conglomerate firms in Nigeria. This is to say that liquidity influences firms net assets per share.

H₀: Leverage has no significant effect on value of conglomerate firms in Nigeria.

The result of the analysis as shown on [Table 3](#) indicates that the relationship between net assets per share (NAPS) and leverage (LEV) is significant and positive. The P-value of 0.023 is less than 5% significant level adopted. Also, the coefficient of 0.245 indicates that increase in LEV increases NAPS by 24.5%. We therefore accepted alternate hypothesis that states that leverage has significant effect on value of conglomerate firms in Nigeria. This is to say that leverage determines firms net assets per share.

H₀: Firms' size has no significant effect on value of conglomerate firms in Nigeria.

The result of the analysis as shown on [Table 3](#) indicates that the relationship between net assets per share (NAPS) and firm size (Asquith et al., 2014) is significant and positive. The P-value of 0.05 is less than 5% significant level adopted. Also, the coefficient of 0.645 indicates that increase in FS increases NAPS by 64.5%. We therefore accepted alternate hypothesis that states that firm size has significant effect on value of conglomerate firms in Nigeria. The implication of this is that firm's size determines firms net assets per share.

5. CONCLUSION

The study concludes that bankruptcy risk has significant effect on value of conglomerate firms in Nigeria.

6. RECOMMENDATIONS

The study made the following recommendations;

1. The board of directors should take into consideration in financial decision making, the implication of financial policy on profitability since profitability determines bankruptcy risk.
2. The findings of the study also should be an indication for managers regarding their liquidity positions since liquidity was found to be a determinant of bankruptcy risk
3. Managers are required to establish policies that could enable a significant level of leverage to be maintained by the firm since leverage determines bankruptcy risk.
4. The board of directors need to take financial decisions based on the size of the firms as firms size is a determinant of bankruptcy risk.

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