DETERMINANTS OF DISTANCE TO CORPORATE BANKRUPTCY AMONG LISTED FIRMS IN NAIROBI SECURITIES EXCHANGE, KENYA

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Abstract

The study intended to assess the determinants of distance to corporate bankruptcy among listed firms in Nairobi Securities Exchange. The study was guided by trade off theory, normative theory and wrecker's theory of financial distress. Explanatory research design was adopted where target population comprised of the 61 listed firms in Nairobi Securities Exchange. Census technique was used in the study to captures all the 45 firms that have consistently been operating at the NSE for the past 6 years from 2008-2013 irrespective of its industry or market segment. The data was analyzed using descriptive statistics. Inferential statistics (Pearson moment correlation and multiple linear regression) were used to test the hypothesis. Findings showed that liquidity had a positive and significant effect on distance to corporate bankruptcy, while profitability had a negative and significant effect on distance to corporate bankruptcy. The study concludes that increase in liquidity leads distance to corporate bankruptcy, while profitability reduces distance to corporate bankruptcy. Thus the study recommends that, firm managers need to carefully analyze profit of firm before any investment decision is made. Managers need to make use of more informed stock prices in order to generate higher cash flows hence reducing bankruptcy risk.

Keywords: Corporate Bankruptcy, Liquidity, Profitability, Distance, Kenya

INTRODUCTION

Prediction of distance to corporate bankruptcy is one of the most important business decision-making problems affecting the entire life span of a business, failure results in a high cost from the collaborators (firms and organizations), the society, and the economy (Ahn *et al.*, 2000). Thus, the evaluation of business failure have emerged as an important field in which many academics and professionals have studied to find other optimal prediction models, depending on the specific interest or condition of the firms under study. The consequence of bankruptcy is enormous, especially for the stakeholders of public-held companies. Prior to a corporate failure, a firm's financial status is frequently in distress (Baimwera & Muriuki, 2014). However, according to Jahur & Quadir, (2012), the common causes of bankruptcy are often a complicated mix of problems and symptoms. Hence, determinants of distance to corporate bankruptcy are clearly a matter of considerable interest to investors, creditors, employees and other stakeholders.

A company is financially distressed whenever its earnings before interests, taxes, and amortization (EBITDA) are less than its interest expenses. Financial leverage involves the substitution of fixed-cost debt for owner's equity in the hope of increasing equity returns (Venkata Ramana, 2012). Previous studies have provided conflicting results on determinants of bankruptcy, for example Thornhill & Ami, (2003) explain the young firm's bankruptcy may be due to inadequate resources and capabilities. This indicates young firms face the critical challenge of generating positive cash flows in the early years due to lack of resources and capabilities. Bever *et al.*, (2005), using NYSE data found that the mean ROA of non-bankruptcy firms is relatively higher than that on the bankruptcy firms' and the bankrupt firms' ROA decreased over the four years prior to bankruptcy. Also, firm profitability is a critical element, since prior studies have shown that capital markets are concerned about the ability for debt repayment of firms and profitability is a key sign of debt repayment ability. This observation is similar to Chava & Jarrow, (2004) who found that industry groups are significantly affected in bankruptcy hazard forecasting in US contexts. However, the above studies have been conducted in developed countries thereby creating a need for similar studies in emerging economies.

Over the years, the emphasis on corporate distance to bankruptcy determination has been critical (Lifschutz, 2010). Its credence has ignited huge debate in the field of corporate finance on how to measure distance to bankruptcy. Since the Altman Z-score model was developed in 1968, several modifications has been made (Begley *et al.,* 1996;Agarwal and Taffler, 2007) indeed, the model has evolved from one that predicts distance to bankruptcy for large firms in the developed countries to one that best suits all firms in the developing world

(Szilagy *et al.*, 2010). While the Altman Z-score model is a multivariate discriminate analysis model combining various accounting based variables to produce a single distress score, other scholars advocate for univariate analysis. Firms are in different stages of bankruptcy owing to variations in managerial and environmental issues and thus there is need to determine the factors that influence distance to corporate bankruptcy.

Kenyan for an example has recorded seventeen bank failures since December 1984 up to September 2007 along with twenty four financial institutions within the same period (CBK, Inspectorate Report, 2007). Kenya has seen recent closure of businesses such as banks and insurance companies, while other firms have been put in receivership and even individuals declared bankrupt (Mbogo & Waweru, 2014). Few businesses grow and prosper without encountering financial problems along the way which may lead to bankruptcy. Bankruptcy evolves gradually, and only in rare instances does a single bad decision cause bankruptcy. However, studies in Kenya on bankruptcy prediction of firms (Keige, 1991; & Barasa, 2007) lack a unified framework on these issues. Further study in this area was fruitful because it enhanced more understanding of determinants of distance to corporate bankruptcy among listed firms in Kenya. Thus, the study hypothesized.

$H_{O1:}$ *Liquidity has no significant effect on distance to corporate bankruptcy*

$H_{O2:}$ *Profitability has no significant effect on distance to corporate bankruptcy*

THEORETICAL PERSPECTIVE

The wreckers' theory of financial distress seeks to explain the benefits that may step out of financial distress to stakeholders (Campbell *et al.,* (2005). It is not necessary to attribute the negative excess returns of distressed firms to inefficient or irrational markets. Such negative excess returns can be shown to be the equilibrium outcome under efficiency in an environment where a subset of participants is able to draw returns (in kind) from distressed companies. For firms close to bankruptcy, non-cash returns to ownership may be the dominant form of payout. If markets are efficient, those returns must show up in stock valuation.

This may be labeled the 'wreckers theory' of financial distress. It explains the entire pattern of results very well. They proceed to show how to test this hypothesis directly against the alternative of inefficient markets using the theory of convenience yields. It is hard to believe that financial market participants as a group can be that irrational or inefficient. Therefore, Campbell *et al.,* (2005), took one step back and try to tell the story of "profiting from a ship wreckage" from a completely different perspective. They paint an illusion of a firm being hit by a series of negative shocks, making losses and approaching a state of financial distress. With

higher leverage, volatility of share prices increases with respect to private information; the ultimate fate of the firm depends on issues unknown to the general public.

With information asymmetry becoming more important, uninformed investors will leave, as, from their perspective; it is a market for lemons. Very soon, equity will be owned by insiders, market participants who have a specific advantage in obtaining and interpreting information related to the company in question. Two groups come to mind: managers themselves, and competing firms. A third possibility might be private equity or funds, working on a restructuring (Campbel *et al.,* (2005).

It is this group of well-informed insiders that can draw returns on their investment in other ways than receiving a cash dividend payout. With managers, this is obvious: there is a large body of literature on corporate governance which shows how difficult it is to prevent managers from taking undue advantage of the firm. If the firm is distressed, it would not be wise for managers to realize hidden reserves generating a cash flow, as this cash presumably would go to the creditors (Campbel *et al.*, (2005). Instead, the utility maximizing managers will try to make use of the firms' resources in a more direct way.

Competitors, on the other hand, are those market participants that have the same use of the firms material and non-material resources, among other things specialized labor, market information, technical and engineering information and product knowledge. Much of these resources can be transferred by anybody who happens to have executive power. Of course, controlling the market behavior of the competing firm can also have a direct positive impact on the competitor's own profits. This type of benefit will not necessarily deplete the resources of the company (Campbel *et al.,* (2005). This leads to a crucial point that equity is not only a right to receive dividends, it also confers control rights. These control rights have an economic value on their own, as they enable owners to draw a return in kind. If control rights had no economic value, who would care to have them?

The value of control rights makes equity comparable to a commodity. The return of a storable commodity consists of two parts: the capital gain and the "convenience yield", that is, the flow of services which accrues to the owner of a physical inventory but not to the owner of a contract on future delivery (Brennan, 1991). The convenience yield of corporate control comprises all non-cash economic benefits of ownership, by no means necessarily illegal ones. Although it does not show up in the books, the convenience yield of corporate control is economically equivalent to a dividend, and it will be valued as such – not only by the ultimate beneficiary, but also by all other market participants who try to form rational price expectations. The shares of distressed firms do generate returns which are consistent with their risk class, but only a subset of market participants can make use of the flows (Brennan, 1991).

EMPIRICAL REVIEW

Liquidity and Distance to Corporate Bankruptcy

Liquidity reduces firms' default risk through enhancing the informational efficiency of price and facilitating block holders to exert governance. Firms with more liquid stocks have smaller corporate bond yield spread (Welch, 2005)

In his study, Bisin and Rampini, (2006) argues that firms with more liquid stocks have lower bankruptcy risk. Using the decimalization event as an exogenous shock to stock liquidity, we employ the difference-in-difference method to test the causal effect of stock liquidity on firm default risk and show that the increase in stock liquidity lead to decrease in firm default risk.

On one hand, stock liquidity may reduce firms' bankruptcy risk through its impact on stock price efficiency. Higher liquidity incentivizes informed investors to acquire more information, leading to more informationally efficient stock prices (Subrahmanyam & Titman, 2001). Stock prices are a useful source of information, embodying the aggregate information of different investors, and dynamically coordinate their actions. Although managers are most informed of their own firms' fundamentals and investment opportunities, they are less likely to have perfect information on every decision-relevant factor, such as macroeconomic conditions, Federal Reserve's monetary policy, future prospects of the industry, and competitors' strategies.

Such important information, however, is collectively possessed by outside investors, who have no intention to directly communicate with managers and intervene in firm's operations, but choose to trade on their private information to maximize trading profits, in turn transmitting their information into stock prices. As a result, managers are able to learn from stock prices the new information, and use it to guide real investments (Subrahmanyam & Titman, 2001; Chen, Goldstein & Jiang, 2007; Luo, 2005; Bakke & Whited, 2010).

More informed stock prices help to improve the efficiency of managers' decisions making, consequently generating higher cash flows and resulting in lower bankruptcy risk. Second, stock liquidity facilitates corporate governance by block holders through increased likelihood of block formation, direct intervention and enhanced channel of exit (Maug, 1998; Edmans, 2009; Edmans and Manso, 2011; Edmans, Fang & Zur, 2013). Higher liquidity increases the likelihood of accumulating a block in a firm, although it might reduce the incentive for block holders to engaging in direction intervention.

The overall effect is that liquidity has an unconditional positive effect on voice (Edmans *et al.,* 2013). Moreover, liquidity encourages block holders to govern through trading. Good corporate governance imposes a discipline on managers, urging them to engaging in value-enhancing investments and guarding against opportunistic management behavior, leading to lower bankruptcy probability.

On the other hand, stock liquidity may increase firms' bankruptcy risk during other circumstances. Goldstein & Guembel (2008) argue that stock liquidity can induce uninformed traders to manipulate stock prices, weakening the allocation role of stock prices. The distorted stock prices, if used by managers to guide firms' decision, drive investment to deviate from the optimum level, or in the worst case, induce wrong investment decision, destroy firm value and increase default risk. (Ozdenoren & Yuan, 2008) argue that exogenous feedback from stock prices to firm real values can generate excess volatility due to high sensitivity of price to non-fundamental shocks.

Furthermore, Subrahmanyam & Titman (2001) argue that higher stock liquidity will increase the importance of this feedback effect and make stock price more informative by stimulating more informed trading thus low levels of corporate bankruptcy. In contrast to Subrahmanyam & Titman (2001), Goldstein & Guembel (2008) show that the feedback effect from stock prices to a firm's investment decisions induces an uninformed speculator to sell the stock. When this uninformed speculator drives down the stock price by selling, the manager may cancel the investment project due to the reason that the decreasing price is thought as a signal of negative information about the project. As this information is misleading, investment decision is inefficient and the firm's future cash flow will decrease, enabling the uninformed speculator to profit. Since higher stock liquidity makes it easier for uninformed traders to sell stocks, stock prices become even more misleading and less efficient.

If stock liquidity enhances price efficiency, then managers tend to make more efficient investment decisions based on the information incorporated in stock prices. Since manager's decision making can affect a firm's future cash flow which determines whether or not a firm can afford debt service costs and principal payments, the more efficient investment decisions can reduce firms' bankruptcy risk by generating higher cash flows. Hence, in this logic, we can suspect a negative relationship between stock liquidity and firm default risk (Goldstein, 2008).

If higher stock liquidity induces uninformed traders to manipulate stock prices, stock prices will be more misleading and distort the firm investment decisions, leading to lower cash flows which weaken a firm's ability to afford debt service costs and principal payments. Thus, stock liquidity may increase firm default risk (Subrahmanyam & Titman, 2001).

Profitability and Distance to Corporate Bankruptcy

In his study, Allanis, (2012) asserts that the main goal for most businesses is to earn a profit. Generating profits in a business environment often indicates that an organization is offering goods or services desired by consumers at a reasonable price hence the organization will have low levels of bankruptcy because they are able to run and invest using the profits and returns

that they make. Developing a strong clientele and a competitive advantage against other companies in the market may require much time and effort on management's part as it seeks to produce desirable goods or services that produce profits. Business organizations that cannot complete these functions may face the prospect of losing money from their operations and dealing with the consequences of financial loss.

A positive effect of companies generating operational profits is the ability for companies to expand and grow their operations without creating any risk of bankruptcy. Companies often reinvest a certain amount of profits earned from current operations into new business opportunities or expanding current operations to increase business output. These opportunities are usually taken on so companies can increase their market share in the business environment and generate further profits from expanded operations. Companies may also choose to enter foreign economic markets to take advantage of potential profit opportunities in developed or emerging economies (Yakov, 2002).

Firm accounting ratios have significant impact on SMEs bankruptcy. In the absence of capital market data, the time banking generally a sector use accounting ratios based model for predicting bankruptcy in small firms (Altman & Sabato 2007; Baixauli & Módica-Milo 2010). Firm profitability is a critical element, since prior studies have shown that capital markets are concerned about the ability for debt repayment of firms and profitability is a key sign of debt repayment ability. Muller & Baker III (1997) used US data to explain that the pattern of the Altman's Z score mirrors the firm ROA pattern.

Bever *et al.,* (2005), using NYSE data found that the mean ROA of non-bankruptcy firms is relatively higher than that on the bankruptcy firms' and the bankrupt firms' ROA decreased over the four years prior to bankruptcy. Consistent with above findings Millar and Chen (2004) found a negative relationship between firm ROA and bankruptcy risk. Next, firm leverage ratio also has significant impact firms' bankruptcy. Not surprisingly, under-leveraged is a major challenge in firms all over the world. This may be because access to external financing is critical to small firms (Kang *et al.*, 2008). The firms' high leveraged ratio indicates the firm's accessibility to external financing. Hence, a high leverage ratio indicates the low probability of corporate bankruptcy.

According to Hendrick, (2003), concludes that business profits often allow companies to improve the livelihood of their owners, managers and employees because they don't have to deal with the stress of the business going bankrupt. This may include increasing compensation levels and offering performance bonuses or additional vacation time. These rewards may also generate positive goodwill with employees. Employees may be willing to work harder and increase their efficiency to achieve more profit for the company. This symbiotic relationship

allows the business to generate more profits from business operations and pay a fraction of these profits to employees based on their performance.

Losses resulting from business operations have the opposite effect of profits. Companies facing a reduced market share from lower consumer demand or a downturn in the business cycle may be forced to reduce operational output or borrow from banks which could result to bankruptcy. This reduction may include laying off employees, selling equipment or assets and closing underperforming business facilities. Companies may need to take additional measures depending on the consistency of business losses and whether their initial reduction methods have lessened the impact of operational losses.

In his study Tyler, (2008) argues that consistent business losses may force the company into bankruptcy. While many businesses try to avoid bankruptcy by selling the business to a competitor or securing additional financing to continue operations, bankruptcy may be the final option. Underperforming small businesses may require the business owner to declare personal bankruptcy, depending on how the company is organized. Business bankruptcy may be a long and arduous process, depending on the size of the company and other aspects relating to business operations. Declaring bankruptcy may also create an economic ripple affecting other companies in the business environment.

Knowing how to value a company in or near bankruptcy is an important skill for profit-seeking investors. Equity investors rarely get paid anything in liquidation, but careful vultures that prey on the distressed debt of fallen companies can make big profits. These opportunities do not pop up every day, but when they do, you should be ready to take advantage. Read on to learn how to be prepared (Robert, 2004).

According to Bilderbeek & Pump (2005), a company whose profits decrease over time is expected to meet high probability of facing financial difficulties. Furthermore, according to Chang et al. (1999), the profitability generated by the company is one of the primary criteria for the granting of credit by financial institutions

In his study, Catalina, (2011) argues that it is rarely a good idea to buy the equity of a company going into liquidation. Equity holders are on the bottom of the ladder in the liquidation process, only receiving what is left after the owners of debt and preferred stock get repaid, which is usually nothing. On the other hand, debt holders have first claim to the company's assets to recover their principal. This leaves room for big profits if the market overreacts when a company announces bankruptcy. Even if the assets will only pay back 40 cents on the dollar on the debt, the market may have knocked down the price to 20 cents, leaving room for a 100% gain. These opportunities are not common and require a lot of work, but with a little background; you can be on your way to identifying value in distressed debt.

RESEARCH METHOD

This study adopted an explanatory research design. This is because the research is a cause-effect relationship. The target population for the study comprised of the listed firms at Nairobi securities exchange which have been consistent for the period 2008 to 2013, there are 45 listed firms trading at the NSE which have been consistent for the period 2008 to 2013 (Nairobi Securities Exchange, 2013). Census method was used in the study since it captures all the 45 firms that have consistently been operating at the NSE for the past 6 years from 2008-2013 irrespective of its industry or market segment giving us 270 observations. This study utilized secondary data which was collected by use of content analysis of financial reports of the firms during the period 2008 to 2013.

The data collected was analyzed using multiple regression model. Correlation analysis was used to measure the degree of association between the variables. Kothari (2004) asserts that the coefficient assumes that there is linear relationship between the two variables and that the two variables are casually related which means that one of the variables is independent and the other is dependent. Hypothesis was tested at 0.05 level of significance (95% confidence level).

In this study bankruptcy was measured by the variation in the firm's sales (as proposed by Altman, 1984) in relation to the average variation in the sales in its sector. Liquidity was measured by ratio of current asset to current liabilities, profitability was calculated as ratio of net income divided by total assets (Henry, 2008)

RESULTS

Descriptive Statistics

Study findings in table 1, illustrated liquidity, profitability, firm size, leverage, and company's age for all firms. Results in table 1 revealed that Liquidity was 165.35% current assets over current liabilities of firms. It was also shown that firm performance at 54.34% and a firm size of 6.7512.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
Liquidity	180	0	7.97	1.6535	0.84367	2.580	16.820
Profitability	180	0	2.64	0.5434	0.72112	1.465	1.078
Age	180	7	94	54.5611	23.87448	-0.283	-0.714

Hypothesis Testing

The relationship between liquidity and bankruptcy as indicated in table below indicate a Pearson correlation ratio = (0.455, p <0.01). Also, profitability had a positive and significant relationship with bankruptcy (0.256, p <0.01).

Hypothesis 1

Findings from table 2, bankruptcy is predicted by liquidity, Profitability, firm size, leverage and firm age (R^2 = 0.379).Whereas ANOVA value of (21.215) and p value of 0.05 level of significance implying that the joint contribution of: Profitability, firm size, leverage and firm age significantly predict bankruptcy$H_{01:}$ *Liquidity has no significant effect on distance to corporate bankruptcy*

The results of multiple regressions, as presented in table 2 revealed that liquidity has a positive and significant effect on corporate bankruptcy with a beta value of β = 0.372 (p-value = 0.000 which is less than α = 0.05). Therefore, the researcher rejects the null hypothesis and it is accepted that for each unit increase in liquidity, there is 0.372 unit increase in corporate bankruptcy. In tally with the results, Goldstein & Guembel (2008) argue that stock liquidity can induce uninformed traders to manipulate stock prices. In such a case, stock prices are distorted, if they are used by managers to guide firm's decisions, investments would deviate from the optimum level hence increasing the likelihood of bankruptcy. However, Subrahmanyam & Titman (2001) argue that higher stock liquidity makes stock price more informative by stimulating more informed trading thus low levels of corporate bankruptcy. Contrary to the results, Rampini, (2006) argues that firms with more liquid stocks have lower bankruptcy risk. Thus, the increase in stock liquidity leads to decrease in firm default risk. Further, Subrahmanyam & Titman, (2001) echo that higher liquidity incentivizes informed investors to acquire more information, leading to more informational efficient stock prices. Also, higher liquidity increases the likelihood of accumulating a block in a firm thereby encouraging block holders to govern through trading. Through good corporate governance, managers are encouraged to engage in value enhancing investments hence lowering bankruptcy probability (Maug, 1998; Edmans, 2009; Edmans and Manso, 2011; Edmans, Fang & Zur, 2013).

Hypothesis 2

$H_{02:}$ *Profitability has no significant effect on distance to corporate bankruptcy*
The results of table 2 showed that the standardized coefficient beta and p value of profitability were positive and significant (beta = 0.145, p < 0.05). Thus, the researcher rejects the null hypothesis and it is accepted that, profitability has positive and significant effect on corporate

bankruptcy. Also, for each unit increase in profitability, there is 0.145 unit increase in corporate bankruptcy. Cognate to the results, Allanis, (2012) asserts that the main goal for most businesses is to earn a profit, with profit a firm will have low levels of bankruptcy because they are able to run and invest using the profits and returns. Further, Millar and Chen (2004) found a positive relationship between firm profitability and bankruptcy risk. In addition, Hendrick, (2003), concludes that business profits allow firms to improve the livelihood of their owners, managers and employees because they don't have to worry about the business going bankrupt. Variance-inflation factor (VIF) was less than the rule of thumb value of more than 4 again this showed that multicollinearity did not exist.

Table 2. Regression Analysis

	Unstandardized Coefficients			Standardized Coefficients		correlation	Collinearity Statistics	
	B	Std. Error	Beta	T	Sig.	zero order	Tolerance	VIF
(Constant)	-0.159	0.042		-3.804	0.00			
Liquidity	0.043	0.007	0.372	5.837	0.00	.455**	0.877	1.14
Profitability	-0.02	0.008	-0.145	-2.325	0.021	.256**	0.924	1.083
R Square	0.379							
Adjusted R Square	0.361							
F	21.215							
Sig.	.000b							

a Dependent Variable: Bankruptcy

CONCLUSION AND RECOMMENDATIONS

Liquidity may increase firms' bankruptcy risk through its impact on stock price. Since higher stock liquidity induces uninformed traders to manipulate stock prices, stock prices will be misleading to investors and distort investments. In fact, a firm will experience lower cash flow which increases the risk of bankruptcy. This implies that more informed stock prices generate higher cash flows resulting in lower bankruptcy risk.

Profitability has a positive influence on distance to corporate bankruptcy as established in chapter four. Through profits, firms are able to plough back the money in profitable ventures thus lowering the risk of bankruptcy. In this sense, firms can increase the scope of their operations and activities without creating any risk of bankruptcy. However, firms experiencing

lower consumer demand may have to borrow funds and this may result to bankruptcy if the returns are not able to finance the debt.

The study has established that firm liquidity is positively related to corporate bankruptcy. As such, it is important for firm managers to carefully analyze stock prices if stock prices are used to guide firm's decisions. Managers need to make use of more informed stock prices in order to generate higher cash flows hence reducing the risk of bankruptcy. This will also enhance the firm's ability to afford debt service costs and principal payments.

Finally, in order to reduce bankruptcy, it is important for managers to drive firms to profitability so as to reduce the risk of bankruptcy. It is also important for firms to reinvest certain amounts of profits into new business ventures in order to increase its operations and reduce the likelihood of bankruptcy. Further, it would be prudent for firms experiencing a downturn to reduce the scope of its operational output rather than sought financial aid from financial institutions since it can result to corporate bankruptcy.

From the study findings, the findings were only limited to determinants that affect distance to corporate bankruptcy of the listed companies in NSE. Thus, another area of future work is further investigation into the determinants of bankruptcy. Also, another study be done to augment finding in this study; it therefore recommends a study on more number of firms under similar conditions to confirm the findings..

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