IMPACT OF FINANCIAL HEALTH ON CONTINUITY OF A FIRM: THE CASE OF MUMIAS SUGAR COMPANY

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ABSTRACT
The financial health of any company is critical for the achievement of the going concern objective. This can be easily evaluated through its profitability, liquidity, solvency and activity ratios. Ratio analysis is one of the most easiest and competent tool to evaluate the financial soundness of a company. Secondary data collected from Nairobi Securities Exchange was used. The data collected was evaluated using ratio analysis. Altman’s Z score model was used to predict the chances of bankruptcy. The results of the study showed that Mumias Sugar Company has a strong short term liquidity position. The company also has an impressive profit earning position. However, the company is suffering from underutilization of its fixed assets as shown by the ratio of EBIT to total assets. Further, the company has over relied on debt to finance its fixed assets as shown by the high values of book value of equity to book value of debt. We therefore recommend that the working capital ratio be improved from the current 0.26, operational inefficiencies be eliminated, fixed assets be utilized to full capacity and the fluctuation in the firms’ sales revenues be stabilized. Clearly, we realize the firm could be suffering more from management challenges than market challenges. The management of the company needs to be restructured so as to improve its performance. Further, the Nairobi Securities Exchange should incorporate in its reports the Z score values for all the listed firms periodically so as to assist the investors in making informed decisions

Keywords: Ratio analysis, Z score, bankruptcy, financial performance.

INTRODUCTION
Financial statement analysis is an important analytical way of evaluating the financial position of a company. Financial statement analysis assists in gaining a deeper understanding of the content of financial statements because it provides a clear guide to evaluate and understand the company’s position. Financial statement analysis may be undertaken through various approaches such as, ratio analysis, comparative statement analysis, cash flow analysis, decision theory among other tools. Financial statement analysis is the best tool to evaluate the working and performance of accompany throughout the year. It is the easiest available tool for any investor or stakeholder to diagnose the financial strength of a company. Whether it is to interpret the short or long term solvency, financial analysis is best suited. Ingoo (1997) analyzed financial distress (bankruptcy) using three major techniques: multivariate discriminant analysis, case based forecasting and neural network. He studied the bankruptcy chances of Korean firms and concluded that artificial neural network was best suited to forecast the health of the company while the case based forecasting was the most inappropriate technique to measure the bankruptcy.
Reddy(2011), examined the financial performance of two selected pharmacy companies and forecasted the viability with the help of Z score model as examined by Beaver(1966, 1967) who studied 79 successful and 79 unsuccessful companies with the use of ratio analysis, to evaluate the soundness which was further applied to the Z score model. According to Johan (2006), the Z score measured the financial performance of small business firms in Kenya and aided to determine the distress level through cyclical concept. Krishna (2005) predicted the financial distress and insolvency of IDBI through Z score. Khannadhasan (2007) concluded that the financial health of Wendt India limited was good by applying the Z score model. According to Ben McClure (2004), investors should constantly check the Z score of companies from time to time to avoid investing in bankrupt or financially distressed firms.

Mumias Sugar Company Ltd was incorporated in 1971 and listed in the Nairobi Securities exchange (NSE) in 2001. The company is the largest sugar manufacturer in Eastern Africa. The principal activities of the company are cultivation of sugarcane and manufacturing of sugar. The company also provides support to sugarcane out-growers. Recently, the company has also increased its portfolio of products to include water bottling, electricity generation among others. The company has been faced with tough times including poor weather conditions, cane theft, importation of cheap sugar into the Kenyan Market, political interference, just to mention but a few. In this connection, the company has been struggling to survive in the now highly competitive sector, with new players having come in such as Butali Sugar, Muhoroni Sugar, Nzoia Sugar just to mention but a few. In light of this stiff competition in the market, the company’s performance has stagnated. The performance of the company’s stock declined from a high of approximately KSh 26 per share in 2007 to a low of KSh 2 in November 2014, a figure lower than it traded at in June 2003(KSh 3). This means that the company has not been creating value for its shareholders. Even though the company has paid dividends, this is not sufficient to prevent an investigation. This formed the rationale of this study. We endeavored to relook at the financial ratios and to analyze the firms’ financial health to try and delve into the causes of its poor performance.

LITERATURE REVIEW

The Z score model was developed by Prof. Edward Altman (1968). He analyzed the financial position with the help of ratio analysis. The financial position was further analyzed with the help of multiple discriminant analysis. This process resulted in the determination of the discriminant coefficient. The model was ostensibly formulated to determine the financial distress and bankruptcy position of any company. According to Altman (1968), if the Z score is less than 1.8, the company becomes bankrupt but if the Z score value is more than 2.99, the company is financially sound and if the Z score value was amongst these two, then the company was in a safe or grey zone. This model provided 94% accuracy level and hence has been used in many jurisdictions.

According to Ingoo (1997), financial distress and bankruptcy can be analyzed through three major techniques: multivariate discriminant analysis, case based forecasting and neural network. He studied the bankruptcy chances of Korean firms and concluded that neural network was best suited to forecast the health of the company and case based forecasting was the most inappropriate technique to measure the financial distress and bankruptcy. Reddy( in his work examined the financial performance of two selected pharmacy companies and forecasted the viability with the help of Z score model as examined by Beaver who studied 79 successful and 79 unsuccessful companies with the use of ratio analysis, to evaluate the soundness which was further applied to the Z score model. Johan (2006) used Z score to measure the financial performance of small business firms in Kenya, and to determine the distress level through cyclical concept. Krishna (2005) predicted the financial distress and insolvency of IDBI through Z score. Khannadhasan (2007) concluded that the financial health of Wendt India limited was good by applying the Z score model. Ben McClure (2004) through his work has advised investors to check the Z score of companies from time to time to avoid bankruptcy situation.

According to Bruno & Leidecker, (2001), business failure only occurs when a firm files for some form of bankruptcy. Elloumi and Gueyie (2001), further argue that when a firm’s business deteriorates to the point where it cannot meet its financial obligations, the firm is said to have entered the state of financial distress.
Therefore, continued decay in financial health of companies ultimately leads to insolvency and potential bankruptcy. Evidence suggests that many companies do not adequately attempt to resolve their financial health problems until it is too late to avoid bankruptcy. Mumias Sugar Company has been in this quagmire and the problem relating to its financial performance has not been resolved.

Features of Financially Distressed Firms
The features of financially distressed firms are many and varied. Today’s globalized business environment is vulnerable to many shocks. Market regulators deliberate on dissimilar view points on what measurement techniques and variables to consider in classifying firms in either the healthy or financially distressed group. These difficulties account for the increase creativity, innovation and awareness on bankruptcy laws and predictive models. In this regard, regulatory bodies and individual researchers have put forth alternative criteria and definitions to guide classification of firms as either healthy or financially distressed. However, distressed firms are allowed to file for bankruptcy based on the provisions of the bankruptcy laws which differs from country to country.

Financially distressed firms are those which face declining financial performance as a result of economic crisis and poor management (Wruck, 1990). He argued that this category of firms usually exhibit declining financial performance to negative return on assets or equity. Financially distressed companies are those with an unfavorable financial condition (Bursa, 2001). According to Bursa, listed companies classified as distressed were required to regularize their financial affairs. Further, emphasis on corporate profitability and equity problems is that financially distressed firms are also faced with high gearing (Haniffa and Cooke, 2002).

The Bermuda Triangle
The various classical models in literature to gain an understanding of the root causes of corporate failure exist. However, the following three remain common elements or causes. These classic symptoms are interrelated and the close circular relationship between them can be presented diagrammatically. This relationship has often been referred to as the ‘Bermuda Triangle’ (Letza 1992). The analogy arises presumably because once a company enters this high risk area there is every likelihood that it may soon disappear—permanently! The analogy of the Bermuda Triangle serves to emphasize the importance and the interrelationship of the three key financial areas, profitability, liquidity and gearing.

![Diagram: The Bermuda Triangle](image)

Figure: 1 The Bermuda triangle

From the Bermuda Triangle, it can be observed more often than not, financial distress or failure typically begins with, for whatever reason, a decline in profitability. This could be caused by increased competition, a ‘price war’, loss of a major customer, or as a result of wider economic events such as a recession or high interest rates. In Kenya, a net importer, the decrease in profitability could also be attributed to importation of cheap products, either legally or illegally.

The declining profitability reduces the cash inflows to the firm. As profitability problems compound and cash inflows reduce, the company may approach a lender for money, and in the process, increase gearing and the level of financial risk, with the interest commitments and loan repayments placing a further strain on cash flows. In the longer term, a stage may be reached where profits may no longer be sufficient to cover loan repayments (low interest cover ratio) or even the interest payments.

Now, interesting enough, in an effort to survive the company may then seek more ‘refinancing’ from other sources. Although this may be a temporary reprieve, it is an additional burden of new refinancing and the cycle of declining profits and pressures on cash flows intensifies leading to a worsening liquidity.
position. At this stage, the company may not be able to secure any more financing and the terminal phase is reached where the company now has not enough cash to pay its debts and becomes technically insolvent. Here, anxious creditors are likely to have petitioned for the company's winding up and subsequent liquidation.

Several studies on financial distress by companies have associated turn over with the likelihood of corporate survival, such that, companies with decreasing turn over were likely to suffer from financing problems in the future (Parker et al., 2002). Further, they added that decreasing turnover, may lead to debts settlement problems and may eventually result to bankruptcy. In the study of Z-score model, assets turnover ratio has a unique relationship with other variables in indicating corporate distress (Altman, 1968). It was also observed that financially distressed firms that practiced debt restructuring were as likely to go bankrupt as those without a total debt restructuring (Parker et al., 2002). In the univariate study it was concluded that cash flow to debt ratio was the best single ratio of bankruptcy indicator (Beaver, 1967).

Altman et al., (1993) identified four steps of developing bankruptcy prediction models; firstly, Analyze the group of failed and non-failed firms to identify most dissimilar financial characteristics between the groups prior to bankruptcy, secondly, Reclassify the original sample using the financial characteristics; thirdly, Test the model’s predictive ability in a hold out sample and finally, Use the model to predict future bankruptcies.

RESEARCH METHODOLOGY
The study used secondary data. The data was obtained for Nairobi Securities Exchange Hand Book for the period 2003 to 2011. The data was been analyzed using Altman’s Z score model. The ratios were calculated through ratio analysis, a tool for financial statement analysis. The analysis also employed use of spread sheets to come up with the findings.

The Z-score Model
This model was first developed by Professor Edward Altman in 1968 to evaluate the financial health of companies. The model is based on various financial ratios. The Z score value calculated determines the likelihood of a company becoming insolvent and bankrupt. The value the model makes use of five ratios; net working capital to total assets ratio, retained earnings to total assets ratio, earnings before interest and tax to total assets ratio, market value of equity to market value of debt ratio and sales to total assets ratio. These ratios are calculated from the financial statements and then are fitted to the model. The model is a linear equation where the ratios are multiplied by certain coefficients or factors devised by Altman. The sum of these products gives the Z score. This model has a high predictive power and can give results up to two years prior to insolvency or bankruptcy.

Further, two variations of the 1968 Z score model are presented. However, for this study, we use the Z score model of 1968. The other models are presented here for purposes of information only. These models were built to apply to privately owned firms and for non-manufacturing firms respectively. In both models, the book value of equity is substituted for the market value of equity in X₄. This makes the two models less reliable than the original model. The Z”-score unlike the Z’-score, does not consider the variable X₄ (Sales/total assets) among others.
Table 1 The Altman’s discriminant functions

<table>
<thead>
<tr>
<th>Year</th>
<th>Discriminant function</th>
<th>Decision Criteria</th>
</tr>
</thead>
</table>
| 1968 | $Z = 1.2 X_1 + 1.4 X_2 + 3.3 X_3 + 0.6 X_4 + 1.0 X_5$ | $Z < 1.81$ bankrupted  
$Z > 2.67$ non-bankrupted  
$Z = 1.81$ to $2.67$ gray area |
| 1993 | $Z' = 0.717 X_1 + 0.847 X_2 + 3.107 X_3 + 0.420 X_6 + 0.998 X_5$ | $Z' < 1.23$ bankrupted  
$Z' > 2.90$ non-bankrupted  
$Z' = 1.23$ to $2.90$ gray area |
| 1993 | $Z'' = 6.56 X_1 + 3.26 X_2 + 6.72 X_3 + 1.05 X_6$ | $Z'' < 1.10$ bankrupted  
$Z'' > 2.60$ non-bankrupted  
$Z'' = 1.10$ to $2.60$ gray area |

Where:  
$X_1 = \text{Working Capital/Total Assets (WC/TA)}$  
$X_2 = \text{Retained Earnings/Total Assets (RE/TA)}$  
$X_3 = \text{Earnings Before Interest and Taxes /Total Asset (EBIT/TA)}$  
$X_4 = \text{Market value of Equity/ Book Value of Total Liabilities MVE/TL)}$  
$X_5 = \text{Sales/Total Asset (S/TA)}$  
$X_6 = \text{Net Worth (Book Value)/Total liabilities (NW/TL)}$

Source: Altman, 1993

Ratios are the most commonly and widely used tool to measure the financial performance of a firm. Four major ratios which define the complete financial position of a company are: liquidity ratios, activity ratios, solvency ratios and profitability ratios. The liquidity ratios measure the company’s ability to meet its short term financial obligations as and when they fall due. The solvency ratios measure the debt servicing capacity of the firm in the long term. The activity ratio determines the company’s ability to utilize the assets and other resources in an efficient manner to generate revenues. The profitability ratios measure the profit generating capacity of the firm.

Therefore, form the Altman’s Model we deduce that; $X_1$ gives the liquidity position of the firm relative to the total capitalization, $X_2$ gives the firms’ aggregate profitability overtime, $X_3$ measures the operating efficiency and productivity of assets, $X_4$ gives the long-term solvency position of the firm and $X_5$ gives the sales revenue generating capacity of the firm’s assets. Thus, according to the Altman’s model, if the Z-Score is < 1.8, then the company is considered to be in bankruptcy zone, and has high probability of failure. If the Z-Score lies in 1.8 to 3.0, then the company is considered to be in grey zone i.e. safety zone, where the company should be under careful watch. If Z-Score is > 3.0, then the company is said to be in good financial health, and will be solvent in the future.

Table 2: The Values of the Z Score Indicators (KSh ‘000’)

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Working Capital</th>
<th>Total Assets</th>
<th>Retained Earnings</th>
<th>EBIT</th>
<th>Net Sales</th>
<th>Book Value of Equity</th>
<th>Book Value of Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>3,545,968</td>
<td>20,214,825</td>
<td>7,863,551</td>
<td>2,646,575</td>
<td>15,795,300</td>
<td>6,612,456</td>
<td>5,738,818</td>
</tr>
<tr>
<td>2010</td>
<td>3,245,813</td>
<td>15,084,089</td>
<td>6,404,006</td>
<td>2,197,874</td>
<td>15,617,738</td>
<td>4,595,846</td>
<td>4,084,237</td>
</tr>
<tr>
<td>2009</td>
<td>1,351,593</td>
<td>13,715,376</td>
<td>5,292,218</td>
<td>1,193,161</td>
<td>11,791,708</td>
<td>4,747,251</td>
<td>3,675,907</td>
</tr>
<tr>
<td>2008</td>
<td>1,183,250</td>
<td>10,754,480</td>
<td>4,154,154</td>
<td>1,589,204</td>
<td>11,970,101</td>
<td>4,887,343</td>
<td>4,172,983</td>
</tr>
<tr>
<td>2007</td>
<td>2,090,213</td>
<td>10,301,943</td>
<td>5,251,866</td>
<td>1,909,894</td>
<td>10,381,190</td>
<td>3,085,794</td>
<td>1,965,833</td>
</tr>
<tr>
<td>2006</td>
<td>2,438,380</td>
<td>9,864,463</td>
<td>4,553,495</td>
<td>2,219,889</td>
<td>11,657,540</td>
<td>3,155,554</td>
<td>2,155,414</td>
</tr>
<tr>
<td>2005</td>
<td>2,036,979</td>
<td>7,888,889</td>
<td>3,317,597</td>
<td>1,843,381</td>
<td>10,080,174</td>
<td>2,303,438</td>
<td>1,808,854</td>
</tr>
<tr>
<td>2004</td>
<td>1,775,694</td>
<td>7,323,322</td>
<td>2,693,591</td>
<td>1,138,550</td>
<td>9,792,503</td>
<td>2,402,514</td>
<td>1,921,217</td>
</tr>
<tr>
<td>2003</td>
<td>870,687</td>
<td>6,684,410</td>
<td>2,361,702</td>
<td>(244,858)</td>
<td>7,628,937</td>
<td>2,503,952</td>
<td>1,818,756</td>
</tr>
</tbody>
</table>

Source: NSE Handbook 2008 and 2012
Table 3: Calculation of the financial ratios

<table>
<thead>
<tr>
<th>Ratio/Year</th>
<th>Net Working Capital to Total Assets</th>
<th>Retained earnings to Total Assets</th>
<th>EBIT To Total Assets</th>
<th>Book Value of Equity to Book Value of Debt</th>
<th>Sales to Total Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>X₁</td>
<td>X₂</td>
<td>X₃</td>
<td>X₄</td>
<td>X₅</td>
</tr>
<tr>
<td>2011</td>
<td>0.175414</td>
<td>0.388999</td>
<td>0.130922</td>
<td>1.152233</td>
<td>0.781372</td>
</tr>
<tr>
<td>2010</td>
<td>0.215181</td>
<td>0.424554</td>
<td>0.145708</td>
<td>1.125264</td>
<td>1.035378</td>
</tr>
<tr>
<td>2009</td>
<td>0.098546</td>
<td>0.38586</td>
<td>0.086994</td>
<td>1.29145</td>
<td>0.859744</td>
</tr>
<tr>
<td>2008</td>
<td>0.110024</td>
<td>0.386272</td>
<td>0.147771</td>
<td>2.853118</td>
<td>1.113034</td>
</tr>
<tr>
<td>2007</td>
<td>0.202865</td>
<td>0.509717</td>
<td>0.185364</td>
<td>1.569713</td>
<td>1.007541</td>
</tr>
<tr>
<td>2006</td>
<td>0.247188</td>
<td>0.461606</td>
<td>0.225039</td>
<td>1.46013</td>
<td>1.181771</td>
</tr>
<tr>
<td>2005</td>
<td>0.258209</td>
<td>0.42054</td>
<td>0.23668</td>
<td>1.273424</td>
<td>1.277769</td>
</tr>
<tr>
<td>2004</td>
<td>0.242471</td>
<td>0.36781</td>
<td>0.155469</td>
<td>1.250517</td>
<td>1.337167</td>
</tr>
<tr>
<td>2003</td>
<td>0.130256</td>
<td>0.353315</td>
<td>-0.03663</td>
<td>1.376739</td>
<td>1.141303</td>
</tr>
</tbody>
</table>

The relationship between the Z Score values and the financial statement elements

The econometrics model of the following form was used to determine the relationship between the Z score and financial statement values.

\[
Z = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon
\]

Where;
- \(X_1\) is the net working capital
- \(X_2\) is the total assets
- \(X_3\) is the retained earnings
- \(X_4\) is the EBIT
- \(X_5\) is the Net sales
- \(X_6\) is the Book value of equity
- \(X_7\) is the book value of debt
- \(\varepsilon\) is the error term
- \(\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7\) are constants

The econometrics model from the regression results was obtained as follows for which the interpretations are also provided.

\[
Z = -1.00 + 0.45 X_1 + 0.08 X_2 - 0.21 X_3 + 0.03 X_4 + 1.27 X_5 + 0.39 X_6 - 1.86 X_7
\]

The OLS method was used to obtain the degree of association between the Z score value and the financial elements of net working capital, total assets, retained earnings, EBIT, Net sales, book value of equity and book value of debt. There was a strong positive relationship between the Z score values and the financial statement elements as shown by the multiple R of 0.9956 and R square of 0.9912. The regression results also showed that the Z Score value would be equal to -1 if all the financial statement elements were zero. This means that the company would be completely bankrupted. On the other hand, a unit increase in net working capital would result in increase in the Z score value by 0.45, total assets by 0.076, EBIT by 0.034, Net sales by 1.27 and Book value of Equity by 0.39. However, a unit increase in retained earnings would result in a reduction of the Z score value by 0.21 and book value of debt by 1.86. Therefore, these two elements of the financial statements need to be watched closely so as to realize improved Z Score values. Retained earnings impact negatively the Z score value.
RESULTS AND FINDINGS
The Net Working Capital to Total Assets Ratio (X₁)
This ratio depicts the liquidity position of the firm. The net working capital ratio (X₁) ranges from 0.10 to 0.26 (Table 2). This ratio was highest in the year 2005 and lowest in the year 2009. The high level of fluctuation indicates that Mumias Sugar Company Ltd has a good level of investment in current assets. The firms’ funds have not been tied up in current assets such as debtors, stock, prepayments among others. However, a shrinking working capital ratio is peculiar with firms making operating losses. The ratio indicates that the firms’ working capital comprises between 10% and 26% of the total assets. This could provide liquidity challenges and impede the firms’ ability to realize profitability. According to (Altman, 2000), this ratio proved to be most valuable out of three that Altman tested.

The Retained Earnings to Total Assets Ratio (X₂)
This ratio indicates the proportion of fixed assets financed by the retained earnings i.e. reserves. The retained earnings are the free reserves and cheaper source of finance than debt because it carries the same cost as equity. The firm does not incur any cost to raise financing from retained earnings. A low ratio in the analysis indicates that the firms’ growth is not a real growth. Real growth can only be realized through increased debt financing rather than reinvesting of profits. From table 2 above, the ratio (X₂) ranges from 0.35 to 0.51. This means that, between 35% - 51% of fixed assets are financed through the retained earnings indicating a strong position of Mumias Sugar Company. The reason here is that, the company is relying less on the external sources of finance and more on internal sources to finance its assets.

Earnings Before Interest and Tax to Total Assets (X₃)
The earnings before interest and tax (EBIT) to Total Assets ratio determines the return on assets of the firm. The ratio indicates the operating and performance efficiency in the utilization of the assets of the firm. This ratio is a measure of the true productivity of the firm’s assets, independent of any taxes or leverage. It determines the productivity capacity of the assets of the enterprise. The ratio (X₃) ranges from -0.04 to 0.23 (table 2). This shows a low operating efficiency of Mumias Sugar Company and also indicates that the company is unable to operate the fixed assets efficiently to achieve optimum results. The situation was worse in 2003, because the firm was operating at negative 4% level of efficiency. This however increased to 23% in 2005, but has since failed to cross the 23% percent mark as of 2011. This could be an indicator that what ails Mumias Sugar Company is actually operational inefficiencies. The fixed assets in the company are underutilized suggesting that the company has excess capacity to be exploited.

The Book Value of Equity to Book Value of Debt Ratio (X₄)
The book value of equity to book value of debt ratio is a common indicator of financial distress (bankruptcy) of a firm. It shows how much the firm’s assets can decline in value before the liabilities exceed the assets and the firm becomes insolvent. The ratio (X₄) of Mumias Sugar Company Ltd ranges from 1.12 to 2.8 (table 2). Accordingly, it can be concluded from the analysis that the company is relying more on debt rather than equity. The company’s equity position is almost similar to debt.

The Net Sales to Total Assets (X₅)
This ratio determines the sales revenue generation ability of the firm’s assets. It is also referred to as the capital turnover ratio. Though least significant of the variables in the model, it is nevertheless unique since it ranks high in its contribution to the overall discriminating ability of the model. Sales are critically important in measuring the overall performance of the company. This is because all the activities are directly or indirectly dependent on the sales revenue. The ratio (X₅), ranges from 0.78 to 1.28 (table 2). This shows that the company is utilizing its assets in an efficient manner to generate sales. However, when it comes to efficiency in the utilization of EBIT, the problem arises in that the EBIT to Total assets ratio is very low.
Table 4. Calculation of the Z Score

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>1.2X₁</th>
<th>1.4X₂</th>
<th>3.3X₃</th>
<th>0.6X₄</th>
<th>1.0X₅</th>
<th>Z Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>0.210497</td>
<td>0.544599</td>
<td>0.432044</td>
<td>0.69134</td>
<td>0.781372</td>
<td>2.659852</td>
</tr>
<tr>
<td>2010</td>
<td>0.258217</td>
<td>0.594375</td>
<td>0.480837</td>
<td>0.675159</td>
<td>1.035738</td>
<td>3.043966</td>
</tr>
<tr>
<td>2009</td>
<td>0.118255</td>
<td>0.540204</td>
<td>0.287082</td>
<td>0.77487</td>
<td>0.859744</td>
<td>2.580155</td>
</tr>
<tr>
<td>2008</td>
<td>0.132029</td>
<td>0.540781</td>
<td>0.487645</td>
<td>1.171871</td>
<td>1.113034</td>
<td>3.98536</td>
</tr>
<tr>
<td>2007</td>
<td>0.243437</td>
<td>0.713604</td>
<td>0.6117</td>
<td>0.941828</td>
<td>1.007541</td>
<td>3.51811</td>
</tr>
<tr>
<td>2006</td>
<td>0.296626</td>
<td>0.646248</td>
<td>0.742629</td>
<td>0.878408</td>
<td>1.181771</td>
<td>3.745682</td>
</tr>
<tr>
<td>2005</td>
<td>0.30985</td>
<td>0.588757</td>
<td>0.771104</td>
<td>0.764054</td>
<td>1.277769</td>
<td>3.711534</td>
</tr>
<tr>
<td>2004</td>
<td>0.290965</td>
<td>0.514934</td>
<td>0.513048</td>
<td>0.75031</td>
<td>1.337167</td>
<td>3.406424</td>
</tr>
<tr>
<td>2003</td>
<td>0.156308</td>
<td>0.494641</td>
<td>-0.12088</td>
<td>0.826043</td>
<td>1.141303</td>
<td>2.497412</td>
</tr>
</tbody>
</table>

From Table 3 above, it is evident that Mumias Sugar Company Ltd has Z score values ranging between 2.497 (Lowest, 2003) and 3.985 (Highest, 2008). Compared to the Z score Lowest range given by the model, (Z <1.8), the firm is certainly not bankrupted. Between 2004 and 2008 and including the year 2010, the company’s Z score was well above the highest range given by the model, (Z>3) implying that the company is financially healthy and will not become bankrupt in the near future. However, in 2003, 2009 and 2011 the company was in the grey zone. Under this circumstance, the company needs to be under close watch to avoid it going into bankruptcy status. Since this was the trend as of 2011, then the firm needs currently to be under close watch, as the currently problems with farmers, competitors and importation of cheap sugar need to be carefully addressed.

CONCLUSION AND RECOMMENDATIONS
The Z-Score value of Mumias Sugar Company based on Altman’s model from 2.49 to 3.85 during the period under review. Comparing a company’s Z-Score over a period of time provides to get a better idea as to how the company is performing over time. A lower Z-Score value means that the company is more likely to be bankrupt. A Z-Score lower than 1.8 means that the company is bankrupt (Or most likely). A Z score greater than 3.0 indicates that bankruptcy is unlikely to occur in the next two years. Companies that have a Z-Score ranging from 1.8 - 3.0 are said to be in the gray zone and need to be under close watch. Therefore, looking at the Z score values computed in table 3 above, the firm is marginally above the Z score value of 3. This means that the chances of falling into the grey area are very high compared to increasing the Z score value. This is not good for the company and could explain the reason why the company has not been able to perform exceptionally well and increase its performance. The following recommendations are therefore put forward;

The net working capital ratio shows that the company’s current investment position is good, and that no funds are tied up current assets in form of stock, debtors and prepaid expenses. However the company should be cautious not to allow this ratio to drop below 0.26. This ratio is however not as impressive and needs to be significantly improved. This improvement may be achieved if the company can significantly reduce its commitments and current liabilities without which it will be a point of concern, as current level of investment becomes questionable. These investments include the methanol generation plant, water bottling and electricity generation among others.

When a company is financially sound, it always finances its assets from retained earnings. However, it can be shown from the analysis that Mumias Sugar Company Ltd relies much on debt to finance its fixed assets compared to retained earnings. Except 2007, the ratio of retained earnings to fixed assets is less
than 50%. This suggests that the firm has relied too much on debt to finance its fixed assets. This position is not good for the firm and should be reviewed.

A low ratio of EBIT indicates that the productive capacity of assets is decreasing. The assets are not being efficiently utilized. This points out the fact that the firm is suffering from operational in-efficiencies. In the long term, this situation is not good as the operating capacity of the assets may decline to zero thereby causing stoppages and interruptions in the production process.

The firm seems to be maintaining a fifty-fifty level of equity and debt. Overall, the situation is not good since for all the years, the amount of book value of debt seems to be more than proportionate to the book value of equity, implying that the company is highly geared. The company should therefore encourage more equity financing and reduce its borrowings.

Finally, the trend of sales is not stable. There are fluctuations that need to be addressed by the company. The company should stabilize its sales revenues so as to avoid future incidence of bankruptcy. The stabilization in the sales revenue could mean that the firm should ensure constant supply of cane, improve on routine maintenance of its plant to ensure uninterrupted operations and price stabilization.

Generally, capital market regulators should also adopt financial distress prediction models. All listed firms should therefore be subjected to financial distress testing periodically so as to guarantee investor confidence and safety. This will assist detect financially troubled companies and appropriate action taken against them.

REFERENCES


