



FINANCIAL SOUNDNESS OF TEXTILE INDUSTRY: ALTMAN Z-SCORE MEASUREMENT

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ABSTRACT

The Altman Z-score was developed by Edward I. Altman (1968) for discriminate analysis to predict bankruptcy or financial strength or financial distress while the model was originally developed from samples of publicly traded manufacturing companies; it is also widely used in private manufacturing, non-manufacturing and service companies. The original Altman Z-score is based on five financial ratios weighted by coefficients. In this study the Altman Z-score for publicly traded manufacturing company is used to assess the financial soundness or efficiency of textile industry. For this study 18 companies of the textile industry in Bangladesh have been selected and the secondary data from the annual report of these companies have been taken to calculate the relevant ratios of the Z-score model. Based on these ratios the Z-score has been calculated. The study has found that 28% companies of the sample industry have fall on “save” zone means shareholders of these companies are save and investor can invest in this companies as these companies are financially sound. But 22% companies of the sample industry have fall on “grey” zone means these companies have good chance of being financially distress within the next two years of operation. Again, 50% companies of the sample industry have fall on “distress” zone. But the average Z-score of the textile industry in Bangladesh has fall on “grey” zone. So, overall financial soundness of the textile industry in Bangladesh is not satisfactory.

Key words: Financial ratio, financial soundness, textile, Z-score

INTRODUCTION

The Altman Z-score was firstly developed by Edward I. Altman (1968) for discriminate analysis to predict bankruptcy or financial strength or financial distress while the model was originally developed from samples of publicly traded manufacturing companies; it is also widely used in private manufacturing, non-manufacturing and service companies. The original Altman Z-score is based on five financial ratios weighted by coefficients. The coefficients were estimated by identifying a set of firms which had declared bankruptcy and then collecting a matched sample of firms which had survived, with matching by industry and approximate size (assets). The Altman Z-score can be used for predicting the bankruptcy (corporate defaults) and credit risk of any company. Altman Z-score is useful for investors in deciding whether to buy or sell the stock of particular company on the basis of the financial strength. So, the study has used the Altman Z-score to assess the financial soundness of the textile industry. Textiles the history of power driven modern textiles in Bengal dates back to the beginning of the twentieth century. Before 1947, modern textiles were only the composite textile mills

having spinning and weaving facilities. Added later were activities like specialized textile weaving, knitting and hosiery, and dyeing-printing-finishing. At Partition of 1947, there were about 11 composite textile mills in East Pakistan with 1.1 million spindles and 2.7 thousand looms. Spindles grew to 3.2 million in 1956 but declined to 0.8 million in 1972 as worn-out obsolete spindles went out of operation. In 1972 large-scale manufacturing units including textile mills were nationalized. After 1982, state owned spinning mills were gradually denationalized. By 1999, spindles installed were 2.4 million in the private sector as compared to 0.4 million in the public sector. The total demand-supply gaps of fabric and yarn for 1996-97 were 2,433 million meters and 429 million kg respectively. These gaps would increase to 3, 717 million meters and 639 million kg respectively by 2002. Bangladesh is a member of the World Trade Organization and its exports of RMG products are benefiting from the MFN status including the post-Uruguay Round tariff rates and reductions in them made by all major developed nations. Bangladesh is favored partner in the GSP of the EU. Bangladesh is the second largest exporter of RMG products trailing China according to the McKinsey (2011). Bangladesh's garment

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exports during July-June 2012-13 period climbed by about 12.7 percent to US\$ 21.515 billion over exports of US\$ 19.089 billion made during the corresponding period of 2011-12. In 2012-13, the top three export destinations for Bangladesh garments were Europe, which accounted for US\$ 12.56 billion, followed by the US and Canada, which accounted for US\$ 4.99 billion and US\$ 980 million, respectively. The textile industry is the largest labour intensive manufacturing sector of the country, which employs about 5 million people (including apparel industry). In addition of meeting the major domestic demand for textile products, the primary textile industry can now meet 80-85 percent of the knit fabrics required for export-oriented knitwear industry and 25-30 percent fabrics required for export-oriented woven RMG industries. The export of textiles and apparels in FY 2013-14 was about US\$ 25.5 billion, which accounted for around 85 percent of the total export earnings (Bangladesh Economic Review). But now it has received bad news. Recent incidents like fire in the Tazreen Fashions factory in killed more than 110 and the collapse of the Rana Plaza garment factory building that killed over 1,100 people and more than 2,500 were injured in the disaster. It may be the second biggest industrial accident in recent history. As a result, The President Obama led US government suspended Bangladesh from the GSP, which allows duty-free entry of over 5000 goods to the US market from LDCs. Now, RMG products (which make up most of the US import from Bangladesh) are not included in the list of duty-free products in GSP, there will an export fall of about \$40 million. It is also influence the EU to take similar action, which would have a much bigger impact on garments sector. Despite many difficulties faced by the industry over the past years, it continued to show its robust performance and competitive strength. Bangladeshi RMG products are mainly destined to the US and EU. Back in 1996-97, Bangladesh was the 7th and 5th largest apparel exporter to the USA and European Union respectively. The industry was successful in exploring the opportunities in markets away from EU and US. In FY07, a successful turnaround was observed in exports to third countries, which having a negative growth in FY06 rose three-fold in FY07. RMG industry has already proved itself to be a resilient industry and can be a catalyst for further industrialization in the country. It is important to have significant flow of investment both in terms of finance and technology from European and American countries. Besides, government has played an active role in designing policy support to the textile sector that includes back-to-back L/C, bonded warehouse, cash incentives, export credit guarantee scheme, tax holiday and related facilities. Moreover, the existence of sound infrastructural facilities is a prerequisite for economic development. In Bangladesh, continuing growth of the textile sector is

dependent on the development of a strong backward linkage in order to reduce the lead time. A limited initiatives regarding research institute related to the apparel sector creates dependent sectors upon some countries like China, Korea and Ukraine etc. It is high time to see RMG sector from vantage point.

Review of literature: On the basis of the objective of the study the following available literatures are reviewed to find out the research gap. A study used ordinary least squares (OLS) regression model to examine the relationship between dependent variable and independent variables to examine the factors that influence companies to disclose voluntary information in their annual reports of Textile Manufacturing Companies in Bangladesh by which the investors can get proper guide line to make investment decision in this sector (Rouf 2014). A study, eight trend equations have been tested for different activities of the Textile industries and Square of correlation coefficient (r^2) has also been tested for all trend equations to measure the performance of Textile Industries in Bangladesh for the sake of stakeholders to make investment decision (Uddin 2015). A study found that Bangladesh has distinctive dominance in RCA among the top Asian clothing and textile exporters & clothing and textile contributes positively to per capita GDP growth of Bangladesh economy while there is a strong dependency of performance in this sector among the leading CT exporters in Asia (Akhtaruzzaman 2012). A study has argued that the quality of internal service, operating efficiency and the profitability are the key indicators of measuring the performance (Manandhar 2002). Virambhai (2010) conducted a study and showed the way to increase the textile industry's productivity and financial efficiency. A study showed that the higher the firm's leverage, the higher its probability of financial distress. It concluded that the company can increase the overall financial performance by reducing Non-Performing Asset, diversion of fund and effective utilization of resources (William, 2015). A paper focuses on the financial strength of the textile sector in India to know that up to what extent textile sector has used their available resources effectively. In this paper comparative ratio analysis technique has used to know the financial soundness of textile companies (Anand 2014). In order to stay in the competition, manufacturing companies must regularly evaluate their performance. Thus, it is imperative for manufacturing companies to identify and ensure good performance in the global competition. Some works have been done to analyze the performance of textile industry, problems, prospect and challenges of the textile industry with the help of ratio analysis, correlation, regression etc. But, the present study attempts to analyze the financial conditions of the textile industry with the help of Altman z-score measurement to give some

guidelines to the investors to invest in this industry. The core objective of the present study is to analyze the financial soundness of the textile industry in Bangladesh. The specific objectives of the study are to evaluate the performance of the textile industry; to assess the comparative position of selected companies within the textile industry; to give some guidelines to the investors to invest in this industry and to give some corrective measures to face the detected problems.

MATERIALS AND METHODS

The study has conducted on the basis of quantitative data. For this study, eighteen (18) listed companies of textile industry from Dhaka Stock Exchange Limited (DSE) have been selected under the simple random sampling method which represents 40% of the total population of the study. The secondary data from the annual report of these companies for the year 2013 have been used. The companies are Alltex Industries Limited (AIL), Anlima Yarn Dyeing (AYD), Argon Denims Ltd. (ADL), CMC-Kamal Textile Mills (CKTM), Delta Spinners (DS), Dosh Garments Limited (DGL), Envoy Textile (ET), Malek Spinning (MS), Mithun Knitting & Dyeing (MKD), Modern Dyeing (MD), PARAMOUNT TEXTILE (PT), Prime Textile, Rahim Textile (RT), Saiham Textile (SAT), Sonargaon Textile (ST), Stylecraft Limited (Style), Tallu Spinning Mills (TSM) and ZAHINTEX INDUSTRIES (ZI). The closing price for the year from of textile industry from Dhaka Stock Exchange Limited has been used to calculate the market value of equity. Three Z-score models were developed for publicly traded manufacturing firm, private manufacturing and non-manufacturing company. In this paper the Altman Z-score for publicly traded manufacturing company has been used. This Z-score model, Altman (2000) is-

$$Z = 1.2T_1 + 1.4T_2 + 3.3T_3 + 0.6T_4 + 0.999T_5$$

Where,

T_1 = Working Capital / Total Assets.

T_2 = Retained Earnings / Total Assets.

T_3 = Earnings before Interest and Taxes/Total Assets.

T_4 = Market Value of Equity / Book Value of Total Liabilities.

T_5 = Sales/ Total Assets.

The Z- score ingredients: The Z- score is calculated by multiplying each of several financial ratios by an appropriate coefficient and then summing the results. The ratios rely on some financial measures are working capital is equal to current assets minus current liabilities, total assets is the total of the assets section of the balance sheet, retained earnings is found in the equity section of the balance sheet, EBIT (Earnings before Interest and Taxes) includes

the income or loss from operations and from any unusual or extraordinary items but not the tax effects of these items. It can be calculated as follows: Find Net Income; add back any income tax expenses and subtract any income tax benefits; then add back any interest expenses. Market value of equity is the total value of all shares of common and preferred stock. The dates these values are chosen need not correspond exactly with the dates of the financial statements to which the market value is compared. Net worth is also known as shareholders' equity or, simply, equity. It is equal to total assets minus total liabilities. Book value of total liabilities is the sum of all current and long-term liabilities from the balance sheet. Sales include other income normally categorized as revenues in the firm's income statement.

Explanations of the ratios:

T_1 : T_1 (Working Capital / Total Assets) represents liquidity analysis. Liquidity ratio, expresses a company's ability to repay short-term obligation. It shows the number of times short-term liabilities are covered by cash. If the value is greater than 1.00, it means fully covered. The ratio which is generally found in studies of corporate problems is the working capital/total assets ratio. Where, working capital means difference between current assets and current liabilities. Actually, WC/TA is a measure of the net liquid assets of the firm relative to the total capitalization. Among the three liquidity ratios (current ratio and the quick ratio) this one proved to be the most valuable. Ordinarily, a firm having smaller current assets in relation to total assets experiences consistent operating losses. Each company's liquidity ratio and average liquidity ratio of the industry show that the companies' liquidity ratio is not enough to meet the short term liabilities. Because it is known that the standard value of liquidity ratio is 1:1. If the value is greater than 1.00, it means that the company has the ability to pay short term creditor.

T_2 : T_2 (Retained Earnings / Total Assets) represents profitability analysis. It measures a company's ability to generate earnings relative to total assets. This ratio highlights how effectively the profitability of a company is being managed. The total amount of reinvested earnings and/or losses of a firm over its entire life is retained earnings. The account is also referred to as earned surplus. It measures of cumulative profitability over time. The age of a firm is implicitly considered in this ratio. For example, a relatively young firm will probably show a low RE/TA ratio because it has not had time to build up its cumulative profits and its chance of being classified as bankrupt is relatively higher than that of another older firm. In 1993 about 50% of all firms failed in the first five years of their existence (Dun & Bradstreet, 1994). In addition, the RE/TA ratio measures the leverage of a firm. Those firms

with high RE, relative to TA, have financed their assets through retention of profits and have not utilized as much debt.

T₃: It represents efficiency analysis. It is a measure of productivity of the firm's assets before tax and/or leverage factors. Actually firm's existence depends on the earning power of its assets, this ratio is used for studies dealing with corporate failure. Insolvency occurs when the total liabilities exceed the value of the firm's assets with value determined by the earning power of the assets. This ratio continually outperforms other profitability measures, including cash flow.

T₄: T₄ (Market Value of Equity / Book Value of Total Liabilities) represents analysis of volatility. It shows how much the firm's assets can decline in value (measured by market value of equity plus debt) before the liabilities exceed the assets and the firm becomes insolvent. This ratio adds a market value dimension. Where, the market value of equity means market value of all of a company's outstanding shares. It is calculated by multiplying the company's current stock price by its number of outstanding shares and book value of total liabilities includes both current and long term liabilities.

T₅: T₅ (Sales/ Total Assets) represents analysis of total asset turnover. It means asset turnover or capital-turnover ratio which explains the sales generating ability of the firm's assets. It is one measure of management's capacity in dealing with competitive conditions. The higher the number is the better. It also indicates that the companies with low profit margins tend to have high asset turnover, while those with high profit margins have low asset turnover.

The Zones of Discriminations are $Z > 2.99$ -"Safe" Zones, the company is considered 'Safe' based on the financial figures only. $1.81 < Z < 2.99$ -"Grey" Zones, there is a good chance of the company going bankrupt within the next 2 years of operations. $Z < 1.81$ -"Distress" Zones, the score indicates a high probability of distress within this time period. The lower/higher the score is the lower/higher the chance of bankruptcy.

RESULTS AND DISCUSSION

Liquidity Analysis (T₁): In Table 2, the highest liquidity ratio obtained by MKD textile Company that is 0.406, it means company has liquid asset 0.406 Tk. out of Total asset Tk. 1 and the other textile companies like TSM, ST, ZI, MS, MD, DS, ADL, SAT and Style textile companies' liquidity position are very lower than MKD textile Company respectively. The textile company AYD, RT, AIL, DGL, Prime text, ET, PT and CKTM have faced negative liquidity position. Currently these companies are suffered by excessive current debt than their current assets. In Figure 1, though the

industry average liquidity ratio is 0.050 but these textile companies are not conscious about their liquidity. So, it can be said that the textile industry in Bangladesh is currently operated inefficiently.

Profitability Analysis (T₂): From Table 3, it has found that Style textile company profitability ratio is highest that is 0.190. It means Style Textile Company is able to meet expenses and other relevant costs incurred during the period of time and the Style textile company is being managed effectively. It has also found that the lowest profitability ratio is obtained by DGL Textile Company that is -0.299. It means DGL Textile Company can't retain earnings compare to its expenses and other relevant costs very effectively. Again from table 3 and from figure 2, it is also observed that industry average profitability ratio is positive that is 0.031. It means textile industry is able to assess the profitability ratio to generate earnings, profits and cash flows relative to some metric, often the amount of money invested.

Efficiency Analysis (T₃): From Table 4 and Figure 3 it is highlighted that each company's Efficiency ratio is positive. So, industry average is also positive. But the highest Efficiency ratio is obtained by MD textile Company that is 0.141. It means MD Textile Company effectively used its assets and liabilities and managed relatively better than others. And the lowest profitability ratio is obtained by DGL textile Company that is 0.029 means the company could not improve its profitability.

Analysis of Volatility Ratio (T₄): From Table 5 and figure 4 it is found that the CKTM textile company has the highest MVE/TL ratio that is 13.404 that means the company's market value of equity is 13.404 times than its liabilities. So, CKTM Textile Company's condition is better than the other companies in the textile industry in Bangladesh. But AIL, PT, Prime Text, ST, Style, DGL companies' market value of equity are very low in relation to total liabilities as their MVE/TL ratio are is very low. Again the industry average MVE/TL ratio is 2.172 means industry's market value of equity is 2.172 times than its liabilities.

Analysis of Total Asset Turnover (T₅): From table 6 and Figure 5 it has found that Style (3.690), MKT (1.496), DGL (1.456) and RT (1.001) have higher assets turnover ratio than the other companies in the textile industry. It means these companies have higher efficiency at using their assets in generating sales or revenue. Again, it may also indicate the lower profit margin of those companies. The lowest total assets belonged to SAT, CKTM, ST, MS, ET and AYD because their assets turnover ratio is below 0.50. It means these companies have lower efficiency at using their assets in generating sales or revenue. Again, it may also indicate the higher profit margin of those companies.

Table 1. Financial data of the companies

| Name of the Company | Sales | EBIT | Total Asset | Total Liabilities | Retained earning | Working Capital | Mkt. Value of Equity |
|---------------------|---------------|-------------|---------------|-------------------|------------------|-----------------|----------------------|
| AIL | 2,161,644,658 | 178,816,702 | 2,737,757,394 | 2,348,915,893 | - | -496,784,350 | 336,000,000 |
| AYD | 242,672,593 | 38,972,449 | 499,466,410 | 285,193,189 | 289,808,499 | -157,228,511 | 346,635,320 |
| ADL | 2,171,292,501 | 461,123,015 | 3,832,899,539 | 1,841,321,555 | 24,630,582 | 333,880,484 | 6,832,800,000 |
| CKTM | 636,714,644 | 121,958,415 | 1,758,942,125 | 186,042,636 | 280,885,362 | -5,908,707 | 2,493,670,757 |
| DS | 1,665,803,050 | 230,612,360 | 2,860,528,438 | 1,629,678,229 | 113,354,648 | 441,054,896 | 1,513,472,400 |
| DGL | 258,210,120 | 5,065,369 | 177,322,104 | 136,247,133 | -52,995,637 | -20,615,655 | 93,012,000 |
| ET | 3,983,610,866 | 682,876,897 | 8,901,336,893 | 3,577,679,009 | 760,918,627 | -322,670,772 | 6,210,750,000 |
| MS | 3,262,553,013 | 457,242,424 | 7,504,000,423 | 2,042,534,671 | 202,019,642 | 1,587,733,773 | 4,743,200,000 |
| MKD | 1,150,137,581 | 86,388,827 | 768,863,423 | 372,850,067 | 5,000,000 | 312,318,267 | 1,240,217,242 |
| MD | 7,419,891 | 1,998,178 | 14,182,344 | 20,437,643 | 296,855 | 2,526,808 | 81,259,200 |
| PT | 2,972,663,954 | 516,485,282 | 3,933,145,531 | 2,823,676,102 | 361,632,779 | -56,342,935 | 1,323,000,000 |
| Prime Text | 2,018,667,255 | 195,448,632 | 3,517,982,265 | 1,427,864,550 | 6,478,999 | -245,536,683 | 764,000,000 |
| RT | 572,483,346 | 63,028,941 | 571,725,778 | 415,702,152 | 27,309,191 | -154,898,707 | 411,591,180 |
| SAT | 791,586,310 | 118,401,017 | 3,802,437,293 | 1,483,584,273 | 257,432,302 | 190,818,776 | 2,145,000,000 |
| ST | 866,886,535 | 76,802,071 | 1,820,136,589 | 928,365,046 | 17,588,636 | 509,324,694 | 534,634,531 |
| Style | 2,944,206,574 | 65,502,296 | 797,800,977 | 639,769,160 | 151,830,692 | 17,059,826 | 453,475,000 |
| TSM | 1,485,140,321 | 316,230,035 | 2,308,083,239 | 1,116,248,363 | 198,901,607 | 676,505,733 | 2,012,694,254 |
| ZI | 2,024,552,000 | 244,011,524 | 2,906,426,633 | 1,137,828,838 | 272,615,074 | 660,262,389 | 1,272,150,000 |

Source: Annual Report of the companies

Table 2. Related ratios of the Z-score model of the companies

| Name of the company | Working capital / Total assets | Retained earnings / total assets | EBIT / Total Assets | Mkt. value of equity / Total liabilities | Sale / Total assets |
|---------------------|--------------------------------|----------------------------------|---------------------|--|---------------------|
| AIL | -0.181 | -0.106 | 0.065 | 0.143 | 0.79 |
| AYD | -0.315 | 0.049 | 0.078 | 1.215 | 0.486 |
| ADL | 0.087 | 0.073 | 0.12 | 3.711 | 0.566 |
| CKTM | -0.003 | 0.064 | 0.069 | 13.404 | 0.362 |
| DS | 0.154 | 0.049 | 0.081 | 0.929 | 0.582 |
| DGL | -0.116 | -0.299 | 0.029 | 0.683 | 1.456 |
| ET | -0.036 | 0.085 | 0.077 | 1.736 | 0.448 |
| MS | 0.212 | 0.027 | 0.061 | 2.322 | 0.435 |
| MKD | 0.406 | 0.007 | 0.112 | 3.326 | 1.496 |
| MD | 0.178 | 0.021 | 0.141 | 3.976 | 0.523 |
| PT | -0.014 | 0.092 | 0.131 | 0.469 | 0.756 |
| Prime Text | -0.070 | 0.002 | 0.056 | 0.535 | 0.574 |
| RT | -0.271 | 0.048 | 0.11 | 0.99 | 1.001 |
| SAT | 0.050 | 0.068 | 0.031 | 1.446 | 0.208 |
| ST | 0.280 | 0.01 | 0.042 | 0.576 | 0.476 |
| Style | 0.021 | 0.19 | 0.082 | 0.709 | 3.69 |
| TSM | 0.293 | 0.086 | 0.137 | 1.803 | 0.643 |
| ZI | 0.227 | 0.094 | 0.084 | 1.118 | 0.697 |
| Average | 0.050 | 0.031 | 0.084 | 2.172 | 0.844 |

Table 3. Working capital to total assets (T₁)

| Name of the company | Working capital / Total assets |
|---------------------|--------------------------------|
| AIL | -0.181 |
| AYD | -0.315 |
| ADL | 0.087 |
| CKTM | -0.003 |
| DS | 0.154 |
| DGL | -0.116 |
| ET | -0.036 |
| MS | 0.212 |
| MKD | 0.406 |
| MD | 0.178 |
| PT | -0.014 |
| Prime Text | -0.070 |
| RT | -0.271 |
| SAT | 0.050 |
| ST | 0.280 |
| Style | 0.021 |
| TSM | 0.293 |
| ZI | 0.227 |
| Average | 0.050 |

Table 4. Retained earnings to total assets (T₂)

| Name of the company | Retained earnings / total assets |
|---------------------|----------------------------------|
| AIL | -0.106 |
| AYD | 0.049 |
| ADL | 0.073 |
| CKTM | 0.064 |
| DS | 0.049 |
| DGL | -0.299 |
| ET | 0.085 |
| MS | 0.027 |
| MKD | 0.007 |
| MD | 0.021 |
| PT | 0.092 |
| Prime Text | 0.002 |
| RT | 0.048 |
| SAT | 0.068 |
| ST | 0.010 |
| Style | 0.190 |
| TSM | 0.086 |
| ZI | 0.094 |
| Average | 0.031 |

Table 5. Earnings before interest and taxes (EBIT) to total assets (T₃)

| Name of the company | EBIT / Total Assets |
|---------------------|---------------------|
| AIL | 0.065 |
| AYD | 0.078 |
| ADL | 0.120 |
| CKTM | 0.069 |
| DS | 0.081 |
| DGL | 0.029 |
| ET | 0.077 |
| MS | 0.061 |
| MKD | 0.112 |
| MD | 0.141 |
| PT | 0.131 |
| Prime Text | 0.056 |
| RT | 0.110 |
| SAT | 0.031 |
| ST | 0.042 |
| Style | 0.082 |
| TSM | 0.137 |
| ZI | 0.084 |
| Average | 0.084 |

Table 6. Market value of equity to book value of total liabilities (T₄)

| Name of the company | Mkt. value of equity / Total liabilities |
|---------------------|--|
| AIL | 0.143 |
| AYD | 1.215 |
| ADL | 3.711 |
| CKTM | 13.404 |
| DS | 0.929 |
| DGL | 0.683 |
| ET | 1.736 |
| MS | 2.322 |
| MKD | 3.326 |
| MD | 3.976 |
| PT | 0.469 |
| Prime Text | 0.535 |
| RT | 0.990 |
| SAT | 1.446 |
| ST | 0.576 |
| Style | 0.709 |
| TSM | 1.803 |
| ZI | 1.118 |
| Average | 2.172 |

Table 7. Sales to total assets (T₅)

| Name of the company | Sale / Total assets |
|---------------------|---------------------|
| AIL | 0.790 |
| AYD | 0.486 |
| ADL | 0.566 |
| CKTM | 0.362 |
| DS | 0.582 |
| DGL | 1.456 |
| ET | 0.448 |
| MS | 0.435 |
| MKD | 1.496 |
| MD | 0.523 |
| PT | 0.756 |
| Prime Text | 0.574 |
| RT | 1.001 |
| SAT | 0.208 |
| ST | 0.476 |
| Style | 3.690 |
| TSM | 0.643 |
| ZI | 0.697 |
| Average | 0.844 |

Comparative Analysis of Financial Soundness through Z- Score Model: Whether a company will go into bankruptcy or not within two years is predicted by Z score bankruptcy model. For this assessment Altman proposed the following values for detecting the Zones of Discrimination $Z > 2.99$ -“Safe” Zones, $1.81 < Z < 2.99$ -“Grey” Zones, Z

< 1.81 -“Distress” Zones and to find out whether the textile industry in Bangladesh is in financially sound or not, we have initiated the study. The table 7 and figure 6 will help to do so. From table 4 it has been found that the ADL, CKTM, MKD, MD and Style companies have fall on “save” zone means these companies are considered ‘Safe’ based on the financial figures and the ET, MS, TSM and ZI companies have fall on “grey” zone means there is a good chance of these companies going bankrupt within the next 2 years of operations. Again, the AIL, AYD, DS, DGL, PT, Prime Text, RT, SAT and ST companies have fall on “distress” zone means there is a high probability of distress of these companies within this time period. From figure 6 it has been found that 28% of the companies of the textile industry have fall on “save” zone indicates 28% of the companies of the textile industry is financially sound and 22% of the companies of the textile industry have fall on “grey” zone means there is a good chance of 22% of the companies of the textile industry being bankrupt within the next 2 years of operations. Again, 50% of the companies of the textile industry have fallen on “distress” zone indicates 50% of the companies of the textile industry have high probability of financial distress within this time period. But according to the industry average Z-score the textile industry has fall on “grey” zone means there is a good chance of industry being bankrupt within the next 2 years of operations.

Table 8. Analysis of financial soundness

| Name of the companies | Z-score | $Z = 1.2T_1 + 1.4T_2 + 3.3T_3 + 0.6T_4 + .999T_5$ | | | Remark |
|-----------------------|---------|---|-------------------|------------|----------|
| | | Classification | | | |
| | | $Z < 1.81$ | $1.81 < Z < 2.99$ | $Z > 2.99$ | |
| AIL | 0.72 | √ | | | Distress |
| AYD | 1.16 | √ | | | Distress |
| ADL | 3.39 | | | √ | Safe |
| CKTM | 8.72 | | | √ | Safe |
| DS | 1.66 | √ | | | Distress |
| DGL | 1.40 | √ | | | Distress |
| ET | 1.82 | | √ | | Grey |
| MS | 2.32 | | √ | | Grey |
| MKD | 4.36 | | | √ | Safe |
| MD | 3.62 | | | √ | Safe |
| PT | 1.58 | √ | | | Distress |
| Prime Text | 1.00 | √ | | | Distress |
| RT | 1.70 | √ | | | Distress |
| SAT | 1.33 | √ | | | Distress |
| ST | 1.31 | √ | | | Distress |
| Style | 4.67 | | | √ | Safe |
| TSM | 2.65 | | √ | | Grey |
| ZI | 2.05 | | √ | | Grey |
| Average | 2.53 | | √ | | Grey |

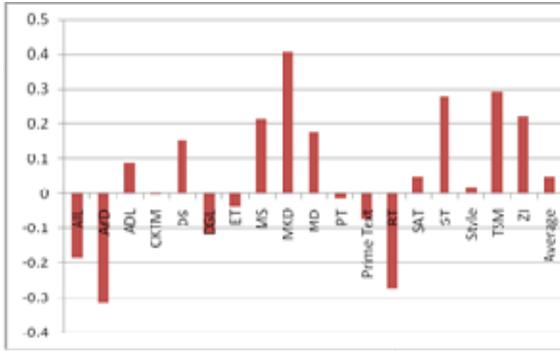


Figure 1. Comparative liquidity position

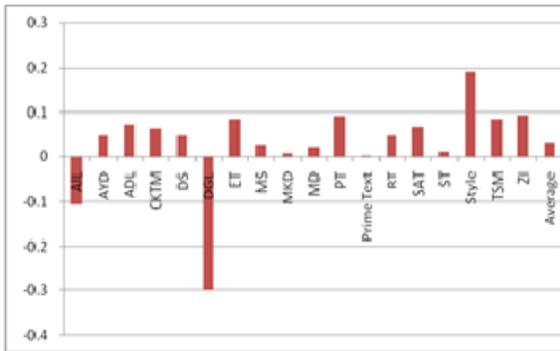


Figure 2. Comparative profitability position

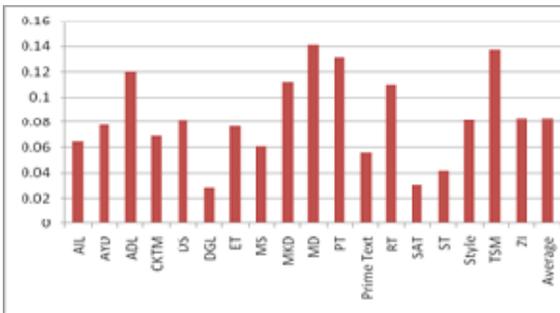


Figure 3. Comparative efficiency position

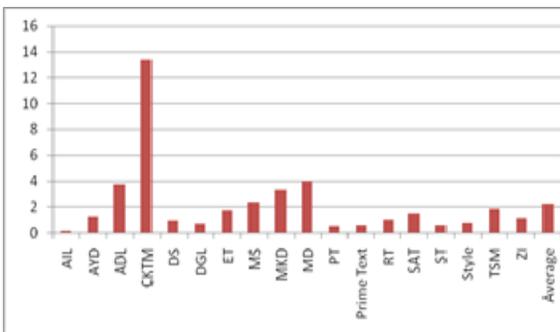


Figure 4. Comparative volatility condition

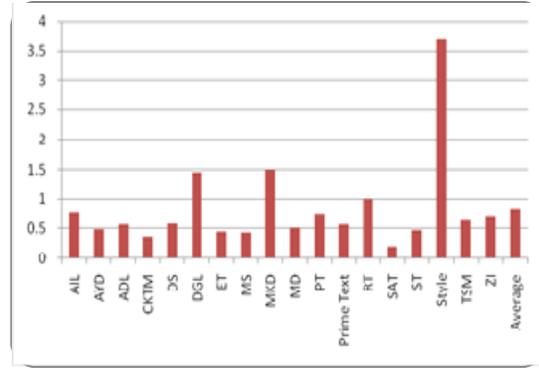


Figure 5. Comparative total asset turnover condition

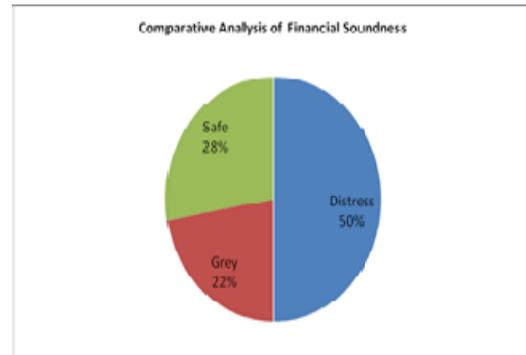


Figure 6. Comparative position of financial soundness

CONCLUSION

This paper recommended that all the variables should be positive in order to have a higher Z-score. As a result, the companies will be saved from the financial distress. The investors should invest in the ADL, CKTM, MKD, MD companies are considered ‘Safe’ based on the financial figures. They should be conscious to invest in the ET, MS, TSM and ZI companies as these companies a good chance of going bankrupt within the next 2 years of operations. The investors should not invest in the AIL, AYD, DS, DGL, PT, Prime Text, RT, SAT and ST companies as there is a high probability of distress of these companies within this time period. The present study found that the textile industry in Bangladesh is not in financial satisfactory position. Though the sample industry has fall on grey zone but 50% companies of sample industry has fall on distress zone, 22% companies of sample industry has fall on grey zone and the rest has fall on save. Again the average Z-score shows that the textile industry is in grey zone. So, it is suggested that the proper intensive care should be taken for this industry. Total assets is shown in the denominator of four out of the five Z-score variables means the higher the amount of assets than the operating requirement the lower the Z-

score and the higher the chance of being financially distressed. As 50% companies hold excessive assets than their operating requirement and they should use the extra assets properly to attain the safe zone from the distress zone. Moreover the distressed companies should pay a special concentration to increase their sales and profitability. Again these companies should manage their costs and expenses efficiently and proper initiative should be taken to increase the market value of equity. In order to analyze or predict the credit risk or bankruptcy of the firms, the investors and the stakeholders should consider other factors besides all variables in the Altman's model such as EPS, P/E ratio, Tobin's Q ratio and ratios from the cash flow statement as well. The study is conducted only on the basis of secondary data due to the time and budget constrain. The researcher suggests to collect the primary data from the shareholder and experts of this field to assess the actual and complete scenery regarding the study topic.

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