A Study of Financial Distress of Xuanhua Construction Machinery CO., Ltd.

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Abstract. Business bankruptcy for a certain company is an absolute affirmation of its inability to endure current operation given its current debt obligations. If the bankruptcy is expected ahead of time, investors and creditors of the company will have the ability to secure their capital and the managers could take action to reduce risk and loss of business and perhaps avoid bankruptcy itself. This study aims to examine the financial distress of Xuanhua Construction Machinery CO., Ltd. (abbreviated as HBXG) based on the financial data that was released by the company during the period of 2012 to 2015. Z-Score model, which is created by Edward L. Altman, is used as the main methodology. Having organized the data, this study compared the performance of HBXG with other 12 comparable corporations in the same industry. The findings of analysis highlight that the financial health of the company is bad and theoretically it will probably go into bankruptcy. The results are important enough to bring to the attention of users of financial information.

Financial Accounting Information Is Designed for Use Primarily by External Decision Makers—Investors and Creditors

External users of financial information may include the following: owners, creditors, potential investors, governmental agencies, etc. Each of these groups of external decision makers requires unique information to be able to make decisions about the reporting enterprise [1]. Providing information that meets the needs of such a large set of diverse users is difficult, if not impossible, in a single set of financial information. And liabilities and owners’ equity are the two basic sources of financing. Therefore, external financial reporting is primarily used by two groups—investors and creditors.

In today’s global economy, investment capital is always on the move. Through organized capital markets, investors each day shift billions of investment dollars among different companies, industries, and nations [3]. Capital flows to those areas in which investors expect to earn the greatest returns with the least risk. How do investors forecast risk and potential returns? One of the most important ways is by analyzing accounting information for a specific company in the context of its unique industry setting. According to results of the analysis, external users can monitor the financial position and strength of a company and therefore make critical decisions on how to invest their capital so that they can minimize the probability of suffering a loss whilst without wasting resources. In addition to that, the managers of the corporation can make necessary adjustments to where the problems exist and maintain the regular operation of the company while making much profit [4].

A Measure for the Financial Distress: Z-Score Formula

Although there are countless studies of financial distress of a business entity, but it’s very rare to find one that adopts Z-Score model as the main methodology in construction machinery industry [5]. In addition to Z-Score, this study overcame the limitations of horizontal analysis to some extent by finding appropriate benchmarks which are the performance of comparable companies and the average performance of several companies in the same industry so that our conclusions are relatively valid [6].
The Z-Score formula for predicting bankruptcy was published in 1968 by Edward L. Altman. The formula may be used to predict the probability that a firm will go into bankruptcy within two years [2]. The Z-score is a linear combination of five common business 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). And the zones of discriminations include the following:

- \( Z > 2.99 \) —“Safe” Zone
- \( 1.8 < Z < 2.99 \) —“Grey” Zone
- \( Z < 1.8 \) —“Distress” Zone

The analysts use several models which almost always include Z-Score model while analyzing the financial health of a corporation. The company belongs to manufacturing industry, so this study chooses the appropriate Z-Score formula as follows:

\[
Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5
\]  \( \text{(1)} \)

\( X_1 = \text{Current Assets} / \text{Total Assets} \).  \( \text{(2)} \)

\( X_2 = \text{Retained Earnings} / \text{Total Assets} \).  \( \text{(3)} \)

\( X_3 = \text{Earnings before Interest and Taxes} / \text{Total Assets} \).  \( \text{(4)} \)

\( X_4 = \text{Market Value of Equity} / \text{Book Value of Total Liabilities} \).  \( \text{(5)} \)

\( X_5 = \text{Sales} / \text{Total Assets} \).  \( \text{(6)} \)

**Z-Score Illustration: Xuanhua Construction Machinery CO., Ltd. and 12 Other Competitors**

Xuanhua Construction Machinery CO., Ltd. (abbreviated as HBXG) locates in Xuanhua, a history city in the three provinces common boundary [7]. HBXG was founded in 1950, a large key state-owned public enterprises is the production, manufacture and sales of bulldozers, excavators, loaders, rollers, sideboom and other engineering machinery products and accessories. HBXG can realize large-scale production, the only company has core technology of elevated sprocket bulldozer in China, it sets production, supply, sales and service as one of the engineering machinery industry leading enterprises in north China.

HBXG had a great loss in 2014, which is probably a signal of financial distress. The following is an analysis conducted by using the Z-Score model and based on the data that is released by the corporations to explore whether a real financial crisis exist.

The analysis is based on the data of financial statements from 2012 to 2015.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Company Name (abbreviated)</th>
<th>Z-score 31/12/2012</th>
<th>Company Name (abbreviated)</th>
<th>Z-score 31/12/2013</th>
<th>Company Name (abbreviated)</th>
<th>Z-score 31/12/2014</th>
<th>Company Name (abbreviated)</th>
<th>Z-score 31/12/2015</th>
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<td>*ST JJ</td>
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Source: original data from various financial statements calculated by author.
**Concluding Remarks**

HBXG belongs to Construction Machinery Industry of Special Equipment of Mechanical Equipment where there are other 14 comparable companies in the same industry, including 2 corporations which are Noblelift Equipment Joint Stock Co., Ltd. and Hangcha Group Co., Ltd. that don’t have the complete information needed; that is, there are only 13 companies to be examined and ranked by calculating the Z-Score based on the four consecutive years’ financial data of the 13 business entities. According to the zones of discriminations, if the company’s Z-Score is less than 1.8, it would probably go into bankruptcy within two years. And the three years’ Z-Scores of HBXG have decreased and ranked 12th in 2012 as well as in 2013 and got even worse in 2014 ranking 13th compared with its competitors, respectively. In addition to the bad ranking, the Z-Scores were even less than 1. Although the ranking has increased a little bit in 2015, the Z-Score is still in the grey area which represents probability of bankruptcy. According to the documents released by HBXG at the beginning of 2016, the company received allowance given by the government and withdrew huge sums of money by selling a certain amount of shares of stock which is issued by China Camc Engineering Co., Ltd. These occasional events happened in 2015 can’t show the real situation of the company.

Theoretically, there is a great possibility that HBXG will go into bankruptcy within two years in addition to the financial distress status which is likely to happen. So investors and creditors should pay close attention to the financial information of the company to avoid suffering a loss. And from the perspective of the company, the managers should make some proper adjustments to improve the financial status and reduce risk and loss of business.

**References**


