Analysis of Financial and Health Performance Semen Indonesia Group Using a Different Test & Almant Z-Score Model

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Abstract: This study aims to analyze the financial performance and health of the Semen Indonesia Group (Semen Padang, Semen Tonasa and Semen Indonesia) using a different test and the Almant z-score model for the period 2010 - 2017. The data used in this study are secondary data sourced from financial statements of companies. The data analysis technique in this study was descriptive and Anova different test.

The results show that during the study period of the three companies studied based on liquidity ratios, solvency and profitability decreased. For financial health based on calculations with the Almant Z-score model, it shows that the company's Z-score tends to decline, Semen Padang in 2017 and Semen Tonasa in 2011 - 2017 get Z-score which belongs to the category of companies that have the potential to go bankrupt. It is different from Semen Indonesia which is still in the category of healthy companies even though the Z-Score tends to decrease.

This decline in financial performance and health is due to higher competition which is also reflected in the decline in corporate profits, not only that this is also due to high long-term debt and unstable working capital each year.

Key words: Financial Performance, Liquidity Ratio, Solvency, Profitability, Almant Z-Score.

1. INTRODUCTION:

Current global economic conditions force and demand companies to be more competitive in carrying out economic activities. With the absence of state boundaries, companies are required to have competitive advantages to be able to obtain higher performance through the characteristics and resources they have compared to other companies in the same industry or market, with the exception of the cement industry.

The advantages of the company in order to win the competition, one of which is that the company must have good financial performance. Whether or not the financial performance of a company depends on the information presented in the financial statements. However, information obtained from financial statements cannot be fully used directly, but further analysis of the financial statements is needed so as to provide clear information about the performance of the company.

Some measuring instruments used to look at financial performance, namely one of them with financial ratios; financial ratio analysis is done by comparing between one financial statement posts with other financial statement items in a certain period that has a relevant relationship. The results of financial statement analysis will help interpret various relationships and trends that can provide a basis for predicting the future of the company whether it can survive or not (Munawir, 2014).

In the process of achieving the goal of maximizing profit the company is faced with various kinds of problems, challenges and risks, so that many companies cannot maintain their business even the company goes bankrupt. In avoiding bankruptcy in a company, management must take precautions as early as possible by conducting bankruptcy analysis. One indicator that can be used to find out bankruptcy rates is a financial indicator.

One of the bankruptcy forecasting models is the Altman Z-Score Model, where this model was developed by Edward I Altman who was a financial economist. Edward Altman created a model using a number of ratios in financial statements and analyzed several discriminants to predict the bankruptcy of a company.

This method has advantages among other bankruptcy prediction methods, namely this method has combined various kinds of ratios needed to assess liquidation, profitability, solvency. In addition, the ratios owned by Z-Score include internal and external assessments of the company, in this case is the ratio of stock market value to total debt that is included in the Altman Z-Score method. The researcher only used the Altman prediction model because of the advantages of the method.

Based on the background above, the author tries to analyze the financial performance of companies in the SIG (SIG) such as Semen Padang, Semen Tonasa, and Semen Indonesia itself and make predictions of the bankruptcy of the company.

2. LITERATURE REVIEW:
Analysis of Financial Performance
- **Liquidity ratio**

  It is a ratio that describes a company's ability to meet short-term obligations. This means that if the company is billed, the company will be able to fulfill the debt, especially debt that has matured. Some of these liquidity ratios are as follows:
  - ➢ **Current Ratio**

    It is a ratio to measure a company's ability to pay short-term liabilities or debts that are immediately due when billed as a whole
  - ➢ **Quick Ratio**

    It is a ratio that shows the company's ability to fulfill or pay obligations or current debt with current assets without taking into account inventory value. This means that the value of the preparation we ignore, by reducing the total value of current assets.
  - ➢ **Cash Ratio**

    It is a ratio used to measure how much cash is available to pay debts. The availability of cash can be indicated by the availability of cash funds that are equivalent to cash such as checking accounts or savings in banks.
- **Solvability ratio**

  It is a ratio used to measure the extent to which a company's assets are financed by debt. In a broad sense it is said that solvency ratios are used to measure a company's ability to pay all its obligations, both short and long term if the company is dissolved (liquidated). Solvency ratios include:
  - ➢ **Debt Ratio**

    It used to measure the ratio between total debt and total assets.
  - ➢ **Total Debt to Equity Ratio**

    This ratio is sought by comparing all debt, including current debt with all equity.
- **Profitability Ratio**

  Profitability ratio is a ratio to assess a company's ability to seek profits. This ratio also gives a measure of the management effectiveness of a company. Some of these types of ratios include:
  - ➢ **Gross Profit Margin (GPM)**

    GPM shows the profit that is relative to the company, by means of net sales minus the cost of goods sold
  - ➢ **Net Profit Margin (NPM)**

    NPM is a measure of profit by comparing earnings after interest and tax compared to sales. This ratio shows the company's net income for sales
  - ➢ **Return on Asset (ROA)**

    ROA is a ratio that shows the results of the amount of assets used in the company.
  - ➢ **Return on Equity (ROE)**

    ROE is a ratio for measuring net income after tax with own capital. The higher this ratio means that the position of the company owner is getting stronger, and vice versa.

Analysis of Bankruptcy

A company is considered to experience bankruptcy or financial failure because the rate of return obtained by the company is smaller than the total cost that must be spent in the long term. Financial difficulties that are constantly faced by companies because the costs incurred are greater than their income, it will threaten the long-term sustainability of the company's business. The accumulation of difficulties managing finances in the long run will result in smaller asset values compared to their total liabilities.

The earlier a company gets a bankruptcy warning, the better it is for management because management can make improvements and can provide a solid picture and hope for the company's future value. In order for companies to continue to run well, they can do a Z-Score analysis to assess how their company is now and how their company will be. Z-Score analysis is an equation that can predict bankruptcy or health levels on the company's financial performance

The factors of bankruptcy the following:
- **Internal conditions**

  It is too much credit given to debtors / subscriptions, inefficient management includes inadequate sales results, errors in setting selling prices, inadequate management of accounts payable, high cost structures (production, administration, marketing and financial) investment in fixed assets and inventories that are overinvestment, lack of working capital, imbalance in the capital structure, uninsured assets or insurance

with a number of liabilities that are not enough to cover possible losses, inadequate accounting systems and procedures.

- **External conditions**

  Such as political, economic, social, cultural and government interference. Besides that the wrong use of technology will result in losses and ultimately lead to bankruptcy of the company and specific external factors are external factors that relate directly to the company, among others, customer factors (changes in consumer taste or saturation that are not detected by the company resulting in decreased sales and ultimately harming the company), suppliers and competitors (Munawir, 2008)

There are several things that can be used as reasons to state that the company is in a state of financial difficulties:

- ➢ **The decline in assets**

  This is indicated by the lower value of total assets on the balance sheet, when viewed from the measurement of activity ratios, the asset turnover value (TATO) is getting lower, as well as the turnover of accounts receivable and inventory turnover which is getting lower as well.

- ➢ **Decrease in sales**

  Declining sales indicate that there is no business growth, lower productivity and means that there are large problems in the determination of sales strategies. Is it related to the decrease in sales volume and price, the ability to market, products that are less desirable, and others.

- ➢ **Lower profit and profitability**

  There are two important things that can trigger a decline in profits, namely income and expenses, usually due to increased costs, even though there is an increase in income but if the increase in load is high then there will be no increase in profits. This will be revealed in the profitability ratio, as a measure of the ability to generate profits. If the profit decreases, it will usually be followed by a decrease in the profitability ratio.

- ➢ **Reduced working capital**

  Working capital as an important part of the company's operations, working capital reflects the ability of the company to manage company financing, with funding that is owned, it is expected that the company's productivity runs smoothly. The higher the working capital, it is expected that productivity will increase so that profitability will also increase

- ➢ **Increasing debt levels**

  The level of debt actually reflects the company's ability to obtain funding from creditors, but the higher level of debt can also indicate that the higher the burden that must be borne by the company. The higher debt ratio is followed by a high interest rate, so that it will have an impact on the high burden which is feared to reduce profitability. Analysts will see how the company is able to fulfill obligations on time and the ability to pay interest.

Altman Z-Score

Altman Z-score (bankruptcy model) is used as a measurable control tool for the financial status of a company that is experiencing financial distress. In other words, Altman Z-score is used as a tool to predict the bankruptcy of a company.

The ratio used in the Altman Z-score analysis is:
1. Net Working Capital to Total Asset.
2. Retained Earnings to Total Assets.
3. Earnings before Interest and Tax to Total Assets.
4. Market Value of Equity to Book Value of Debt.
5. Sales to Total Asset.

But for companies that don't go public on Market the value of equity is replaced by Book value of Debt with the modified Almant formula of course.

The Model Almant Z-score for companies that go public (Semen Indonesia)

$$Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 0.999X5$$

Whereas for companies that do not go public, such as Semen Padang and Semen Tonasa use a modified formula:

$$Z = 0.717X1 + 0.847X2 + 3.107X3 + 0.42X4 + 0.999X5$$

Where:

Z = bankruptcy index

X1 = working capital / total analysis of Altman Z-Score

X2 = retained earnings / total assets

X3 = profit before interest and tax / total assets

X4 = Market Value of Equity to Book Value of Debt. Or (book value of equity / liabilities)

X5 = sales / total assets

The Altman bankruptcy formula is used to obtain criteria in determining a company. If the company has a bankruptcy score of $Z > 2.99$, the company concerned is classified as safe from the threat of bankruptcy. If a company with a bankruptcy score of $Z < 1.81$ then the company is predicted to potentially fail or go bankrupt. If the company has a bankruptcy score of $1.81 < Z < 2.99$ then the company is in the gray zone or the company is predicted to be prone to bankruptcy, meaning that the company is still difficult to be guaranteed free or threatened from bankruptcy (Altman, 1968).

3. METHOD:

This research was conducted on companies that belong to the category of cement industries in Indonesia which are State-Owned Enterprises namely SIG, which is the object of research, namely Semen Padang, Semen Tonasa, Semen Indonesia itself.

Sources and Types of Data

The data source needed by the author in this study is secondary data. Secondary data from this study were obtained from various sources such as the company's website which contained the audited Annual Report and the company itself.

The type of data collected to support this research are company financial report data in the form of balance sheets, income statement, statement of changes in financial position and cash flow statement. Retrieval of the time period for this study is from 2010 to 2017

Sampling Technique

This research was conducted by taking a population of all cement companies incorporated in SIG. The sample studied is a company that has financial report data from 2010 to 2017. The companies selected in this study have the reason that it is easy to obtain data. Analysis of the data used is a different test analysis using the Analysis of Variance (Anova) test. In the ANOVA, the null hypothesis that the average of two groups is not different. Anova is used to test the null hypothesis about the difference of two averages or more. Formally the hypothesis can be written as follows:

$H0: \mu1 = \mu2 = \mu3$

$H1: \mu1 \neq \mu2 \neq \mu3$

Where:

$\mu1$: Performance and health of Semen Padang

$\mu2$: Performance and health of Semen Tonasa

$\mu3$: Performance and health of Semen Indonesia

Testing Criteria:

H0 is accepted if $F0 \leq F\alpha$ (V1; V2)

H0 is rejected if $F0 \geq F\alpha$ (V1; V2)

Where: V1: k- 1

V2: k (n -1)

4. PERFORMANCE ANALYSIS:

- **Liquidity Ratio**
    a. The average current ratio for SIG during the study period was 1.55 for Semen Padang, 1.45 for Semen Tonasa and 1.97 for Semen Indonesia, as a whole the average value of the three companies was 1.65, which means the company's ability to pay term obligations short or debt that is immediately due overall is good.
    b. Quick Ratio is in the range between 0.65 to 2.27, with details for the minimum value of Semen Padang 0.65 maximum value 1.38 with a mean value of 1.03, Semen Tonasa minimum value of 0.67 maximum value 1.38 with a mean of 0.97 while Semen Indonesia has a minimum value of 0.94 with a maximum value of 2.27. This means that Semen Indonesia has a better ability than two other companies in terms of fulfilling or paying short-term liabilities or current debt with current assets without taking into account the value of supply.
    c. Cash Ratio with a range of 0.19 to 1.46 with an average value of 0.59. The details for Semen Padang are in the range 0.22 to 0.94 with a mean of 0.56, Semen Tonasa is in the range 0.19 to 0.64 with a mean of 0.42 while Semen Indonesia is in the range 0.35 to 1.46 with Mean 0.79 which means based on the

value of Cash Ratio 2010-2017 Semen Indonesia having the availability of cash in paying short-term debt is better than the other two companies.

- **Solvability Ratio**
  a. Total Debt Ratio SIG is in the range 0.22 to 0.64 with mean of 0.40 with details for Semen Padang in the range 0.25 to 0.51 with mean 0.35, Semen Tonasa in the range 0.45 to 0.64 with mean 0.56 and Semen Indonesia in the range 0.22 to 0.38 with mean of 0.29 which means that overall the Total Debt Ratio of each company is quite low and good.
  b. The DER of SIG in the range 0.28 to 1.77 with mean of 0.77, with details for Semen Padang in the range 0.34 to 1.05 with mean 0.58, Semen Tonasa in the range 0.81 to 1.77 with mean 1.29 and Semen Indonesia in the range 0.28 to 0.61 with mean 0.76. the lower DER showing the company's ability to pay its obligations, for Semen Padang it is quite low but in the last two years it has increased even to 1.05 as well as Semen Tonasa which from year to year is quite high.

- **Profitability Ratio**
  a. The GPM of the three SIG companies is in the range 24.59 to 47.48 with a Mean of 34.45. Semen Padang in the range 25.88 to 30.48 with Mean 28.96, Semen Tonasa 24.59 to 38.22 with Mean 32.83, and Semen Indonesia in the range 28.62 to 47.48 with Mean 34.45 means that overall GPM is below 50 percent which is the remaining money that can be used to pay for operational costs, interest, taxes and other needs.
  b. NPM of SIG companies are in range 5.38 to 25.51 with Mean 15.68. Semen Padang in range 7.50 to 16.85 with Mean 13.58, Semen Tonasa in range 5.38 to 19.96 with mean 13.60 and Semen Indonesia in the range 7.35 to 25.51 with mean 19.84 means that the value of NPM during 2010 - 2017 is quite low indicating that the operations of each company need to be improved so as to reduce production costs and increase profits, of course, management needs to improve and think about efficiency at all levels due to the NPM trend which tends to decrease every year.
  c. ROA of SIG trend has decreased every year. ROA of SIG is in Range 3.12 to 23.51 with a mean 12.89. Semen Padang 4.92 to 20.63 with mean 14.91, Semen Tonasa 3.12 to 15.48 with mean 8.50 and Semen Indonesia 4.17 to 23.51 with mean 12.89. This means that corporate profits begin to erode resources and total assets. Management needs to pay attention to all operational policies in an effort to be able to survive in the cement industry.
  d. ROE of SIG tend to decline from 2010-2017. ROE SIG is in the range 6.59 to 30.14 with mean 20.90. Semen Padang 10.07 to 29.57 with mean 22.24 Semen Tonasa 6.59 to 28.00 with mean 19.31 and Semen Indonesia 6.71 to 30.14 with mean of 21.15. It means that the company is less successful in managing its capital, so the level of profit measured by investment by the owner of capital or company shareholders is still quite low and decreases every year.

5. BANKRUPTCY ANALYSIS:

Overall Z-Score Three companies tend to decline from 2010 to 2017. Overall Z-Score of This group is in Range 1.49 to 4.02 with a mean of 4.24 with details of Semen Padang 1.73 to 4.02 with a mean of 3.09 Semen Tonasa 1.46 up to 2.28 with mean 1.75 and Semen Indonesia 3.58 to 12.97 with mean 7.89.

The results of Z-Score Semen Padang in 2017 are predicted to be potential bankruptcy as well as Semen Tonasa in 2011 to 2017. In contrast to Semen Indonesia, despite a decrease in the value of Z-Score, it is still categorized as a healthy company. The factors that cause a decline in financial and health performance are management policies in determining the value of working capital used as operational activities which tend to decline every year, especially in Semen Padang and Semen Tonasa, increase long-term debt and lack efficiency in operational activities compared to competitors (differences in cost structure) or an increasing number of producers in Indonesia which results in decreasing profits from year to year.

Hypothesis Testing
- **Liquidity Ratio**
  a. **Current Ratio**
     Based on ANOVA test known that the F value is 3.173 with a significance value of $0.063 > 0.05$, this shows that the average Current Ratio of SIG is the same or no difference, then H1 which states the difference in financial performance seen from the Curent Ratio **rejected.**
  b. **Quick Ratio**

Based on ANOVA test known that F value is 5.358 with a significance value of $0.013 < 0.05$, this shows that the average Quick Ratio of SIG is significantly different. So H1 which states the difference in financial performance seen from the Quick Ratio is **accepted**

c. Cash Ratio
Based on ANOVA test known that F value is 3.527 with a significance value of $0.048 < 0.05$, this indicates that the average Cash Ratio of SIG was significantly different. So that H1 which states the difference in financial performance seen from the Cash Ratio is **accepted**

- **Solvability ratio**
  ### a. Debt Ratio
  Based on ANOVA test known that F value is 31,099 with a significance value of $0.000 < 0.05$, this indicates that the average debt ratio of the SIG is significantly different. So that H1 states a difference in financial performance seen from the debt ratio **accepted**
  ### b. Total Debt to Equity Ratio
  Based on ANOVA test known that F value is 30,183 with a significance value of $0,000 < 0.05$, this shows that the average Total Debt to Equity Ratio of SIG is significantly different. So H1 which states the difference in financial performance seen from the Total Debt to the Capital is **accepted.**

- **Profitability ratio**
  ### a. Gross Profit Margin
  Based on ANOVA test known that F value is 16.113 with a significance value of $0.000 < 0.05$, this shows that the average GPM of SIG is significantly different. So H1 which states the difference in financial performance seen from the GPM is **accepted**
  ### b. Net Profit Margin
  Based on ANOVA test known that F value is 4.537 with a significance value of $0.023 < 0.05$, this indicates that the average NPM of the SIG is significantly different. So H1 which states the difference in financial performance seen from the NPM is **accepted**
  ### c. Return on Asset
  Based on ANOVA test known that F value is 3,763 with a significance value of $0.040 < 0.05$, this indicates that the average ROA of SIG studied was significantly different. So H1 which states a difference in financial performance seen from the ROA **accepted**
  ### d. Return on Equity
  Based on ANOVA test known that F value is 0.311 with a significance value of $0.736 > 0.05$, this shows that the average ROE of SIG was not significantly different. So H1 which states the difference in financial performance seen from the ROE is **rejected**

- **Z-Score**
  Based on ANOVA test known that F value is 22,459 with a significance value of $0,000 < 0.05$, this shows that the average Z-Score of SIG is significantly different. So that H1 states a difference in financial health seen from the value of Z-Score **accepted.**

6. CONCLUSION:
1. Based on the performance analysis of SIG during 2010 - 2017 using financial ratios concluded that the company experienced a decline in performance, which looks very clearly on profitability ratios which tend to decrease every year.
2. Based on bankruptcy analysis to assess the financial health of the SIG companies during 2010 to 2017, Z-Score values tend to decrease every year. The results of Z-Score Semen Padang in 2017 are predicted to be potential bankruptcy as well as Semen Tonasa in 2011 to 2017. In contrast to Semen Indonesia, despite a decrease in the value of Z-Score, it is still categorized as a healthy company.
3. Based on the Statistical Test in this case the Difference Test obtained results that almost the overall financial and health performance in SIG had a significant difference, except for the Current ratio and Return on Equity which had significant similarities.

7. SUGGESTION:
- Trend of Decreasing Semen Indonesia Financial Performance The Group reflected in the Profitability Ratio (GPM, NPM, ROA and ROE) is expected to be a special concern by management in making strategic policies in operations, not only that efficiency in all lines needs to be implemented in order to reduce costs and cost of production so that profits increase.

- To overcome the company's performance that continues to decline. Some of the breakthroughs that must be the focus of attention of the management of SIG are new marketing strategy, including supply chain, effective and efficient energy consumption, development of downstream products or provision of added value, and more structural cost transformation programs. Utilizing BUMN Synergy by strengthening Network Marketing Communication with regulators or the government
- Financial Health Trend which tends to decline and predicts that Semen Padang and Semen Tonasa companies have the potential to go bankrupt to become a special concern, especially for the sustainability of the company.

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