CHAPTER II

LITERATURE REVIEW

A. Empirical Review

1. Saden (2015)

The title of this research was “Financial Distress Prediction of Mining Companies Listed in Indonesian Stock Exchange: An Analysis Using Altman Z-Score Model”. This research has 18 mining listed companies which are divided into three subsectors, metallic mineral mining, coal mining and oil and gas mining in the Indonesian Stock Exchange. The result of this study shows based on the average score of Altman model through 2011-2014, metallic mineral has the best Altman Z-Score value rather than the others.

The analysis result shows that through the years 2011-2014, the number of company suffer financial distress increase from six companies out of 18 in 2011 to 12 companies out of 18 companies in 2014. It can be concluded that the number of companies who are experiencing financial distress increased from 2011 till 2014.

2. Wati (2015)

“Analysis of Bank Health Levels Using X-Score Model (Zmijewski), Y-Score Model (Ohlson), and Z-Score Model (Altman)” supposed to know the differences results of bank bankruptcy prediction by using X-Score, Y-Score, and Z-Score. All methods have a small differences, although result of delisting company indicated different result. From Zmijewski model, only bank Lippo was in grey area in 2007. Ohlson model showed Bank Arta Niaga Kencana was in grey area during observation and Bank UOB Buana was in grey area in 2005.

Altman model mentioned all of delisting banks were in safe category during observation. concludes from Altman score showed that not all delisted company in grey criteria during three years observation. Z-score result of delisted company was mentioned that company had good financial performance and proved that company was not bankrupt while they decided to delist from Indonesian Stock Exchange.

3. Ariesta (2015)

The title of this research was "The Analysis of Bank Financial Performance Using Altman (Z-Score) to predict Bankruptcy". Study of this research was listing and delisting bank in Indonesian Stock Exchange. In 2011 for listing company, there were four companies in safe area, the others in gray area.

There was one company that experience decreasing performance in 2012 that was PT. Bank Himpunan Saudara 1906, Tbk. It made the number of companies in gray area 2012 were 5 companies. Then in 2013, only one company was able to sustain in safe area that is PT. Bank Capital Indonesia, Tbk. Conversely with listing company, all of the delisting company in safe area for researched year.

Table 2 Mapping for Previous Research

Name (Year)	**Title**	**Research Variable**	**Research Result**
Saden (2015)	Financial Distress Prediction of Mining Companies Listed in Indonesian Stock Exchange: An Analysis Using Altman Z-Score Model	a. X_1, Working capital to total assets b. X_2, Retained earnings to total assets c. X_3, Earning before interest and tax to total assets d. X_4, Market value of equity to book value of total liabilities e. X_5, Sales to total assets	1. Based on the average score of Altman model through 2011-2014, metallic mineral have best Altman Z-Score ratio rather than the others. 2. Based on the result analysis using Altman (Z-Score), there were six companies experience financial distress in 2011. 3. The number of companies who were experiencing financial distress increased from 2011 till 2014 proven at 2014 there are 12 companies out of 18 companies were predicted had financial distress.
Wati (2015	Analysis of Bank Health Levels Using X-Score Model (Zmijewski), Y-Score Model (Ohlson), and Z-Score Model (Altman)	a. X_1, Net profit to total assets b. X_2, Total debt to total asset c. X_3, Current assets to current liability d. Y_1, Log of total asset to GNP price rate index e. Y_2, Total liabilities to total assets f. Y_3, Working capital to total assets	1. All of method have a small differences, although result of delisting company showed different result. 2. From Zmijewski model, only one bank in 2007 had grey value, it was bank Lippo. 3. Ohlson model showed Bank Arta Niaga Kencana was in category of grey area during observation and Bank UOB Buana was in grey area in 2005.

Table 2 Continue Mapping for Previous Research

		g. Y_4, Current liabilities to current assets h. Y_5, Total liabilities to total assets i. Y_6, Net profit to total assets j. Y_7,Operational funds to total debt k. Y_8, Net profit l. Y_9, Change of net profit m. Z_1, Working capital to total assets n. Z_2, Retained earnings to total asset o. Z_3, EBIT to total assets p. Z_4, Market value of equity to book value of total liabilities q. Z_5, Sales to total assets.	4. Altman model mentioned all of the delisting banks was in safe category during observation. Z-score result of delisted company had good financial performance.
Ariesta **(2015)**	The Analysis of Bank Financial Performance Using Altman (Z-Score) to predict Bankruptcy	a. X_1, Working capital to total assets b. X_2, Retained earnings to total assets c. X_3, Earning before interest and tax to total assets d. X_4, Market value of equity to book value of total liabilities	1. In 2011 there were four listing companies in safe area, the others in gray area. 2. There were five companies in gray area in 2012. 3. In 2013, only one company that able to sustain in safe area that was PT. Bank Capital Indonesia, Tbk. 4. All of delisting company in safe area for researched year.

Source : Data Processed by Author, 2016

B. THEORETICAL REVIEW

1. Property and Real Estate

"Property is an institution uniquely qualified to protect certain kinds of value" (Bell, 2005:537). The increasing amount of developing property and real-estate company has made many challenges to improve their competitiveness. In terms of enhancing competitiveness, it is needed for the property and real- estate company to predict the possibility of insolvency. "It is important that any potential company insolvency be recognized at the earliest opportunity" (Thomas, 2011:599).

The development of real estate industry has a significant impact toward national economic of a country. It has been proven by China, which experienced an unprecedented period of rapid development. When government takes measure to regulate and control the real estate market, at the same time many real estate companies suffer financial crisis. (Wang Yi, 2012:153).

2. Financial Performance

a. Financial Statement

Munawir (2004:2) stated that financial statement basicly is summarization from accounting process that used to report the condition of financial performance and to communicate between financial data or a company with parties related to data. "Financial statements is a summary of a records, a summary of financial transaction that happen in its one year book " said Baridwan (2004:17). Harahap (2009:105) stated that financial statements descibe financial condition and result of its operation for a certain period . Based on definition above, the researcher concludes that financial statements is a accountant process that prepared in the end of period contain of its financial position and condition which is presented in several report such as balance sheet, income statement, change Statement of Changes in Equity ,Statement of Cash Flow and Notes to Financial Statements.

Based on Financial Accounting Standart number 1 paragraph 49 (Revision 2009 financial statement is complete when consists of :

1) Balance Sheet

Ussually in balance sheet present financial condition of company for a certain period means present in a particular date especially when close account.Financial Accounting Standart number 1 paragraph 49 (Association, 2009 Revised).

2) Income Statement

Income statement is a systematic report of revenue, expenses, profit or loss that obtain in a certain period of the company. (Munawir,2004:26).The purpose of income statement is to present the ability of company to create a profit.

3) Statement of Changes in Equity

It present the increasing and decreasing net active or property within its period.

4) Statement of Cash Flow

Based on Financial Accounting Standart number 2 year 2009, statement of cash flow provide information to evaluate the fluctuation of net income, financial structure and ability to adopt with situation and opportunity alteration .This statement provide information to value ability of the company to create cash and cash equivalents thus the users can develop a model to compare between current cash flow and future cash flow.

5) Notes to Financial Statements

These notes provide information about basic of arranging financial report and policy that chosen and implemented to the important transaction or incident.

Type of analysis ratio based on source of data which are balance sheet ratio, income statement ratio, intern statement ratio. Data balance sheet could calculate current ratio, acid test ratio, current asset to total asset ratio, current liabilities to total asset ratio. Income statement ratio which using data from income statement could calculate gross profit, net margin, operating margin, operating ratio. Then Intern statement ratio is ratio that collected data from balance sheet and another data such as income statement such as asset turnover, inventory turnover, receivable turnover (shelmi.wordpress.com)

"The most common purpose of financial statements is providing information that useful to investors, creditors and other users, today and in the future, for investment decision-making, loans and other investments" (Mamduh and Abdul,2003:30). They are some stakeholder that strongly engaged in operating the core business. Beside, stockholder and manager are also need the information from financial statements to create a good strategic planning in maintaining and sustaining the company.

b. Financial Statement Analysis

"Financial statement analysis is an analysis of the financial condition of an enterprise involving balance sheet and income statements" (Martono, 2008:51). Based on Munawir (2004:35) financial statements analysis is an analysis of financial statements which research and study a relationship and trend to determine financial position, result of action and development of the company. Financial statements analysis used as early screening in choosing investment or merger; as a tool to forecast future condition of financial performance; as a diagnosis process of management and operation problems then evaluate them. (Prastowo and Julianty, 2005:53) .

Among the definition of financial statement analysis described above, the researcher concludes that financial statement is a tool to analyze the financial condition of the company.The benefit of financial statements analysis is to simplify the data thus able to understand more easy. To obtain the purpose of financial statement analysis should apply appropriate method. Method is useful to simplify data thus be able to interpretate more easily. According to Munawir (2004:36) the technique to analyze financial statements are:

1) Analysis of financial statements comparison that is method and technique analysis by comparing financial statements for two (2) period or more by present the absolute data or amount in Rupiahs, increasing and decreasing in Rupiahs, increasing and decreasing in percentage or total percentage.
2) Trend, to know the financial tendency condition, whether persistent, increase or decrease.
3) Common Size Statement, to know investment percentage for each assets toward total assets. It also to know capital structure and the cost related to sales amount.
4) Source and utilize of Capital Working, to know the cause working capital fluctuation in a certain period.
5) Cash flow statement analysis, to know the cause of cash fluctuation and the utilizing of cash in a certain period.
6) Ratio Analysis, to know the relation between a certain item and balance sheets or income statements.
7) Gross profit analysis, to know the cause of gross profit fluctuation for one period to another period.
8) Break- Event analysis, to determine the amount of sales that should be achieve to avoid suffer a financial lose.

The analysis of financial statements could be distinguish into two type that are cross sectional approach and time series analyze.

1) Cross section analysis comparing the financial ratio of different company in same timeframe. This comparison can be conducted by comparing between financial ratio of the company and industry average ratio.
2) Time series analysis comparing financial ratio of same company in different period. By this analysis, the company can comparing financial performance between past period and current period thus able to discover wheter the company experience improvement or decline as a consideration to make future planning.(Syamsuddin, 2004:39)

In this research, cross section analysis is implemented through conducting financial ratio analysis. Researcher collects financial statements of different company in same timeframe. At the end, researcher tries to compare the financial ratio that has been calculated.

c. Financial Ratio Analysis

"The detection of company operating and financial difficulties is a subject that has been particularly amenable to analysis with financial ratios "(Altman, 2006 : 238). Financial ratio is implemented in order to evaluate the performance of the company. Evaluating and monitoring the implementation of business strategy using Ratio analysis, assesses various financial statements of a business to unveil the performance of a company (Thomas, 2011:601).

"Ratio Analysis is a calculation of ratios for evaluating the financial situation in the past, the present and projecting the results in the future" (Alwi, 1998:107). According to Ridwan S. Sundjaja and Inge Barlian "Ratio analysis is a calculation method and financial ratio interpretation to value the performance and status of the company " (Sundjaja, 2003:128). Based on definition above, researcher concludes that ratio analysis is a method to calculate some ratio, then interpreted it to provide information about financial situation as a consideration of future decision.

Type of financial ratio analysis are:

1) Liquidity Ratio to measure the ability of the company to meets its short-term obligation. It is conclude current ratio, quick ratio, cash ratio, working capital to total asset.

2) Leverage Ratio to measure how far company assets financed by debt. The ratio that belong to leverage that are total debt to equity ratio, total debt to total asset ratio, long term debt to equity ratio, tangible assets debt coverage, and time interest earned ratio.
3) Profitability Ratio to measure the company's ability to obtain profit. Ratio that belong this which are gross profit margin, operating profit margin, operating ratio, net profit margin, rate of return on net worth, rate of ROI, earning power of total investment.
4) Activity Ratio to measure how effective the company manager their resources. Activity ratio are total assets turnover, receivable turnover, inventory turnover and working capital turnover.

"The purpose of ratio analysis is to help financial managers to understand what need to be done by the company based on the limited information available is limited derived from financial statements" (Alwi, 1998:108). Information of ratio analysis is also important as a signal Managers should use the information to provide a strategic future planning and to anticipate the possibilities of bankruptcy.

3. Bankruptcy

A mechanism to detect the possibility of bankruptcy is proposed for sustaining corporate development (Thomas, 2011: 599) and as an early warning to the management in operating business. Bankruptcy is known as company's failure. According to Rudianto (2013:251) bankruptcy is a failure in running the business company to achieve its goals.

“Bankruptcy analysis was conducted to obtain early warning of bankruptcy (signs of bankruptcy). The earlier signals of the bankruptcy, the better for the management to make improvements “ (Mamduh and Abdul, 2003 :263). Act number 37 year 2004 describe bankruptcy with following statements:

> “Bankruptcy is take over all assets of Bankrupt Debtor that the maintenance and settlement conducted by the curator under the supervision of the Supervisory Judge. Debtor defines as entity that have debts based on agreements. Then, curator shall mean the Orphan’s Chamber or an individual appointed by the court to manage and liquidate the assets of Bankrupt Debtor under the supervision of Supervisory Judge as provided for Law number 37 of 2004. The duty of the Curator shall be to manage and/or settlement the bankruptcy estate. The persons may act Curator are individuals domiciled in Indonesia possessing specific expertise required in respect of the management and/or settlement of the bankruptcy estate and registered with the Ministry with the scope of duties and responsibilities covering law and legislation. In the other hand, Supervisory Judge shall mean the judge appointed by the court in a bankruptcy judgment or suspension of obligation for payment of debts judgment. The Supervisory Judge shall supervise management and settlement of the bankruptcy estate. The Supervisory Judge shall be authorized to hear the witnesses or to order an investigation by experts in order to obtain clarification with regard to the bankruptcy.”

According to John Leslie Livingstone in his book that The Portable MBA in Finance and Accounting, the main cause of business failure is less of management, proven by low profit and low sales. (Livingstone, 1994:498). The main conditions to declare bankruptcy is when find this situation which is a debtor having two or more creditors and failing to pay at least one debt which has matured and became payable, shall be declared bankrupt through a Court decision, either at his own petition or at the request of one or more of his creditors.

Financial distress begins from liquidation that belong to easy distress. The most severe financial difficulties when the company declare bankruptcy statement.

These are the benefit of predicted bankruptcy :

1) Creditors. Bankruptcy information is useful to determine loan decision and to monitor the flow of funds that have been borrowed by debtor.
2) Investor. Investor need to view the probability of bankruptcy of an investee company to decide whether to purchase, hold or sell the investment.
3) Government. To evaluate the State owned Enterprises (SoEs) concerned with the allocation of resources and activities of the company. Government also considers private company to forecast early bankruptcy signal because government has authority to conduct proper action such as setting tax policy.
4) Accountant. Have an interest about information of going concern of the company to value the ability of the company.
5) Management. As early warning to the company on making future decision and find the strategies to anticipate bankruptcy risk.

4. Original Altman Z-Score Model Analysis

On 1966, Edward I Altman did a research on company that has been experiencing bankrupcies and companies with healthy financial performances. In his research, he determined the coefficients or weights. “These weights are objectively determined by the computer algorithm and not by the analyst. As such, they will be different if the sample changes or if new variables are utilized” (Altman, 2006:242).

Mason & Harris (1979) in Thomas (2011:601) stated that Z score model has been extensively used by researcher, government agencies and the commercial sector to identify potential insolvent companies.

a. Types of Altman Z-Score Formulas

1) Altman Prediction Model (1946-1965)

"The initial sample was composed of a matched sample of bankrupt and non-bankrupt firms. " (Altman, 2006:240) .The bankrupt (distressed) company was all of manufactured company that proposed bankruptcy petitions from 1946 through 1965. Then Altman collect balance sheet and income statement. At first, Altman found 22 potentially helpful variables (ratios), but finally he conclude only 5 (five) doing the best overall job together in prediction of corporate bankru ptcy.

$$\mathbf{Z = 1.2\ X_1 + 1.4\ X_2 + 3.3\ X_3 + 0.6\ X_4 + 1.0\ X_5}$$

Which ratios:

X_1 = Working Capital / Total Assets

X_2 = Retained Earnings / Total Assets

X_3 = Earnings before Interest and Taxes / Total Assets

X_4 = Market Value of Equity / Book Value of Total Liabilities

X_5 = Sales / Total Assets

Z = Overall Index or Score

Source: Altman (2006)

The reason this model cannot use present because the formula is supposed to use in manufacturing company which go public.

Table 3 cut-off point in Altman Prediction Model

Cut-off	Interpretation	Description
$Z > 2.99$	Safe Area	Company is in a good condition
$1.81 < Z < 2.99$	Gray Area	Companies are experiencing financial problem which must be handled immediately
$Z < 1.81$	Danger Area	The company is in a dangerous zone or a company is in a state of bankruptcy.

Source : Data Processed by Author, 2016.

2) Altman Revision (1984)

In 1984, Altman was doing research on manufacturing companies which not selling the shares at stock exchange or private company.The formula as below:

$$\mathbf{Z = 0.717\ X_1 + 0.847\ X_2 + 3.107\ X_3 + 0.420\ X_4 + 0.998\ X_5}$$

Which ratios:

X_1 = Working Capital / Total Assets

X_2 = Retained Earnings / Total Assets

X_3 =Earnings before Interest and Taxes / Total Assets

X_4 = Book Value of Equity / Total Equity

X_5 = Sales / Total Assets

Z = Overall Index or Score

Source: Altman (2006

The results of Altman test produced a score which can be compared with manufacturing companies that do not go public with the different assessment standard with the first study.

Table 4 Cut-off point in Altman Revision Model

Cut-off	Interpretation	Description
Z > 2.9	Safe Area	Company is in a good condition
1.23 < Z < 2.90	Gray Area	Companies are experiencing financial problem which must be handled immediately
Z < 1.23	Danger Area	The company is in a dangerous zone or a company in a state of bankruptcy.

Source : Data Processed by Author, 2016

3) Altman Modification (1995)

In the third model calculation of the Z-Score, Altman eliminating sales to total asset ratio in the hope of firm size (the impact of sales or total asset) can be eliminated. The result of this third study resulted Altman Z-Score formula as follows:

$$\mathbf{Z= 6.56\ X_1 + 3.26\ X_2 + 6{,}72\ X_3 + 1.05\ X_4}$$

Which ratios:

X_1 =Working Capital / Total Asset

X_2 =Retained Earnings / Total Asset

X_3 =Earnings Before Interest And Tax / Total Asset

X_4 = Book Value Of Equity / Book Value Of Total Liabilities.

Z = Overall Index or Score

Source : Data Processed by Author, 2016

Table 5 Cut-off point in Altman Modification Model

Cut-off	Interpretation	Description
Z > 2.6	Safe Area	Company is in a good condition
1.1 < Z < 2..6	Gray Area	Companies are experiencing financial problem which must be handled immediately
Z < 1.1	Danger Area	The company is in a dangerous zone or a company in a state of bankruptcy.

Source : Data Processed by Author, 2016

b. Ratio Used in Altman (Z-Score)

1) Working Capital to Total Asset (WC/TA)

"The working capital/total assets ratio is a measure of the net liquid assets of the firm relative to the total capitalization. Working capital is defined as the difference between current assets and current liabilities" (Altman, 2006:243).

2) Retained Earnings to Total Assets (RE/TA)

"Retained earnings (RE) is the total amount of reinvested earnings and/or losses of a firm over its entire life. The account is also referred to as earned surplus. This is a measure of cumulative profitability over the life of the company" (Altman, 2006 :242). Leverage of the company is also measured by this ratio.

3) Earnings before Interest and Taxes to Total Assets (EBIT/TA)

"This is a measurement for productivity of the firm's assets, independent of any tax or leverage factors. Since a firm's ultimate existence is based on the earning power of its assets, this ratio appears to be particularly appropriate for studies dealing with credit risk" (Altman, 2006 :242).

4) Market Value of Equity to Book Value of Total Liabilities (MVE/TL)

"Equity is measured by the combined market value of all shares of stock, preferred and common, while liabilities include both current and long-term obligations. The measure 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." (Altman, 2006 :243)

5) Sales to Total Asset (S/TA)

"The capital turnover ratio is a standard financial ratio illustrating the sales-generating ability of the firm's assets" (Altman, 2006 :243).