

ANALYSIS OF FINANCIAL DISTRESS WITH AN USING ALTMAN Z-SCORE METHODS ON BAKRIE GROUP COMPANIES LISTED IN BEI YEAR 2012 - 2017

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Abstract

The purpose of this study was to analyze financial distress conditions in Bakrie Group companies listed on the Stock Exchange in the 2012 to 2017 period. The data used in this study is secondary data, taken from the company's financial statements on the IDX in 2012-2017. The sample consists of 5 companies from 2012 to 2017 and is still registered to date. The method used is the original Altman Z-Score model for manufacturing public companies. The ratio used is working capital (working capital to total assets (total assets), retained earnings (retained earnings) to total assets, earnings before interest and taxes (EBIT) to total assets, the market value of the capital of the debt value (market value of total liabilities) , and sales to total assets (sales to total assets) .The results of the study show that the five companies are in a distress zone where the factors are significant because the average profitability and low liquidity of the company cannot be economically and efficiently run his business.

Keywords: *Altman Z-Score, financial distress, bankruptcy, Bakrie Group*

Introduction

One of the benefits of the analysis of financial statements is to predict the survival of the company. Bankruptcy prediction analysis is an analysis that can help a company to anticipate the possibility that the company will experience bankruptcy caused by financial problems. Bankruptcy analysis in this study uses the Z-Score (Altman) method, which is a score that is determined from the standard count of the times the financial ratios that will indicate the level of probability of corporate bankruptcy (Supardi, 2003: 73).

Research methods

This type of research is descriptive with quantitative methods, namely the formulation of the problem descriptively and data quantitatively. The data used are secondary data derived from the annual financial statements of the Bakrie Group company downloaded from the official website www.idx.co.id during the 2012 to 2017 period. In this study, the sampling technique used purposive sampling technique, where the research was conducted on 5 manufacturing companies in the Bakrie Group. Processing methods and data analysis in this study are discriminants. The discriminant analysis used in this method is the Altman Z-Score analysis. Here are the five variables used:

Table 1. Altman Z-Score variable

No	Variable	Formula	Scale
1	<i>Altman Z-Score (Z)</i>	$Z = 1,2X_1+1,4X_2+3,3X_3+0,6X_4+0,999X_5$	Score
2	<i>Net working capital to total assets (X₁)</i>	$X_1 =$	Ratio
No	Variable	Formula	Scale

3	Retained earning to total assets (X_2)	$X_2 =$	Ratio
4	Earning before interest and tax to total assets (X_3)	$X_3 =$	Ratio
5	Market value of equity to total liability (X_4)	$X_4 =$	Ratio
6	Sales to total assets (X_5)	$X_5 =$	Ratio

After finding out the results of the Altman model calculation, then determine the condition of each company based on the following criteria :

Table 2. Z-Score Score Criteria

Value of Z-Score	Information
$Z < 1,81$	Indicating indications that the company is facing a threat of serious bankruptcy (distress zone), this needs to be followed up by the company's management to avoid bankruptcy.
$1,81 > Z > 2,99$	Indicates that the company is in a vulnerable condition. In this condition, management must be careful in managing company assets so that there is no bankruptcy (Gray zone).
$Z > 2,99$	Shows the company in a healthy financial condition and has no problems with the financial (Safe Zone).

Research Results and Discussion

The following is a list of company samples specified:

Table 3. Bakrie Group Company Samples Period of 2012 – 2017

No.	Code Company	Names of Company
1	UNSP	PT. Bakrie Sumatra Plant Tbk
2	BNBR	PT. Bakrie & Brothers Tbk
3	BUMI	PT. Bumi Resources Tbk
4	BRMS	PT. Bumi Resources Minerals Tbk
5	DEWA	PT. Darma Henwa Tbk

1. Working Capital to Total Assets ratio

Table 4. Working Capital to Total Assets Ratio Value (X_1)
Period of 2012 – 2017

Company	Working Capital to Total Assets ratio						Average
	2012	2013	2014	2015	2016	2017	
UNSP	0.041	-0.161	-0.330	-0.427	-0.631	-0.746	-0.376
BNBR	0.157	-0.231	-0.548	-0.913	-1.294	-1.376	-0.701
BUMI	-0.040	-0.396	-0.907	-1,453	-0.076	-0.155	-0.505
BRMS	-0.136	-0.263	-0.333	-0.408	-0.246	0.239	-0.191
DEWA	0.117	0.084	0.130	0.073	0.009	-0.058	0.059

The value of the average ratio working capital to total assets the five companies for six years were negative. It also shows the average for six of the fifth year the company has current liabilities greater than current assets, which means that the five companies for six years can't cover its current liabilities or short-term liabilities.

According to Bambang Riyanto (2008) that the higher the value of this ratio, the greater the portion of working capital owned by the company than its total assets. On the contrary, the average value of this ratio is low, meaning that the working capital of the company is lower than the total assets. The value of working capital to total assets is a lot of negative because the capital obtained by the Bakrie company is from debt so that working capital during the research year has decreased

2. Retained Earning to Total Assets Ratio

Table 5. Retained Earning to Total Assets Ratio Value (X_2)
Period of 2012 – 2017

Company	Retained Earning to Total Assets Ratio						Average
	2012	2013	2014	2015	2016	2017	
UNSP	0.057	-0.284	-0.148	-0.350	-0.352	-0.526	-0.267
BNBR	0.023	-0.001	0.013	-0.186	-2.654	-2.818	-0.937
BUMI	-0.059	-0.149	-0.311	-0.989	-1.060	-0.789	-0.559
BRMS	0.055	-0.007	-0.055	-0.073	-0.428	-0.800	-0.218
DEWA	-0.107	-0.270	-0.276	-0.257	-0.251	-0.233	-0.232

The average ratio of retained earnings to the total assets of the five companies for six years is negative. This shows that on average for six years the financial financing of the five companies relied more on debt than profit because the company suffered losses. Retained earnings show how much company income is not paid in the form of dividends to shareholders. Low retained earnings may indicate that the company has a low ability to manage dividend payments.

3. EBIT to Total Assets ratio

Table 6. EBIT to Total Assets Ratio Value (X_3)
Period of 2012 – 2017

Company	EBIT to Total Assets Ratio						Average
	2012	2013	2014	2015	2016	2017	
UNSP	-0.050	-0.142	-0.033	-0.066	-0.032	-0.042	-0.061
BNBR	0.034	-0.001	0.024	-0.179	-0.547	0.063	-0.101
BUMI	0.136	0.098	0.106	0.012	0.008	0.005	0.061
BRMS	0.004	0.004	0.005	-0.001	-0.003	-0.006	0.001
DEWA	-0.045	-0.029	0.039	0.064	0.042	0.086	0.026

The value of the average ratio EBIT to total assets of a company that experiences the average values of EBIT to negative total assets, namely UNSP and BNBR. This shows that the two companies are not optimal in utilizing assets to generate income to cover operating expenses. Can be interpreted as a high-value company operating expenses, close to or more than the total income so that operating income can be negative or experience a loss. The lower the EBIT ratio to total assets shows the smaller the ability of the company to generate profits before interest and taxes from assets used so that the probability of the company against financial distress is higher (Maulana, 2010).

4. Market Value to Total Liabilities ratio

Table 7.
Market Value to Total Liabilities Ratio Value (X_4)
Period of 2012 – 2017

Company	Market Value to Total Liabilities ratio						Average
	2012	2013	2014	2015	2016	2017	
UNSP	0.115	0.052	0.051	0.050	0.051	0.048	0.061
BNBR	0.460	0.335	0.347	0.357	0.372	0.372	0.374
BUMI	0.186	2.344	0.044	0.021	0.129	0.223	0.491
BRMS	1.104	0.724	0.925	0.104	0.293	0.424	0.596
DEWA	0.685	0.633	0.668	0.641	0.523	0.461	0.602

From the results of the average value of the market value to total liabilities ratio for six years, the five companies have an average positive X 4 value. It all shows that the five companies for six years to avoid the problem of solvency, only if the company has an average value during six years of zero means that the company approached the problem of solvency which the asset is smaller than the debts or obligations of the company or possible that during the period of six years the company suffered continuous losses. Market value is an external analysis in a company that describes the company's ability to create added value in the market.

5. Sales to Total Assets ratio

Table 8. Sales to Total Assets Ratio Value (X_5)
Period of 2012 – 2017

Company	Sales to Total Assets ratio						Average
	2012	2013	2014	2015	2016	2017	
UNSP	0.131	0.115	0.170	0.132	0.106	0.108	0.127
BNBR	0.989	0.439	0.562	0.362	0.308	0.372	0.505
BUMI	0.513	0.506	0.013	0.012	0.008	0.005	0.176
BRMS	0.011	0.010	0.009	0.006	0.002	0.006	0.007
DEWA	0.762	0.607	0.660	0.644	0.679	0.604	0.659

From the results of the average value of the ratio of sales to total assets for six years, the five companies have an average positive X 5 value. This shows how much the ability of the company's funds in the overall assets to rotate in a certain period. This is supported by the research of Dzulkrirom (2015) in the journal Wulandari and Widayanti (2017) stating that this variable serves to measure management's ability to use assets to generate sales and describe the turnover rate of all company assets.

Conclusions and recommendations

Based on the Altman's formula for manufacturing companies going public, the results have been obtained from the financial ratios that have been known previously. The Z score obtained is as follows:

Table 9
Results of the Fifth Z Score of the Bakrie Group Company
Period of 2012 – 2017

Company of Bakrie Group	Year	X ₁	X ₂	X ₃	X ₄	X ₅	Value Z Score	Category Z Score
UNSP	2012	0.041	0.057	-0.05	0.115	0.131	0.166	<i>Distress zone</i>
	2013	-0.161	0,284	-0.142	0.052	0,115	-0.914	<i>Distress zone</i>
	2014	-0.330	-0.148	-0.033	-0.051	0,17	-0.511	<i>Distress zone</i>
	2015	-0.427	-0.350	-0.066	0.050	0.132	-1.058	<i>Distress zone</i>
	2016	-0.631	-0.352	-0.032	0.051	0.106	-1.220	<i>Distress zone</i>
	2017	-0.746	-0.526	-0.042	0.048	0.108	-1.634	<i>Distress zone</i>
BNBR	2012	0.157	0.023	0.034	0.460	0.989	1.597	<i>Distress zone</i>
	2013	-0.231	-0.001	-0.001	0.335	0.439	0.358	<i>Distress zone</i>
	2014	-0.548	0.013	0.024	0.347	0.562	0.209	<i>Distress zone</i>

	2015	-0.913	-0.186	-0.179	0.357	0.362	-1.372	<i>Distress zone</i>
	2016	-1.294	-2.654	-0.547	0.372	0.308	-6.545	<i>Distress zone</i>
	2017	-1.376	-2.818	0.0063	0.372	0.372	-4.794	<i>Distress zone</i>
BUMI	2012	-0.040	-0.059	0.136	0.186	0.513	0.941	<i>Distress zone</i>
	2013	-0.396	-0.149	0.098	2.344	0.506	1.552	<i>Distress zone</i>
	2014	-0.907	-0.311	0.106	0.044	0.013	-1.133	<i>Distress zone</i>
	2015	-1.453	-0.989	0.012	0.021	0.012	-3.064	<i>Distress zone</i>
	2016	-0.076	-1.060	0.008	0.129	0.008	-1.465	<i>Distress zone</i>
	2017	-0.155	-0.789	0.005	0.223	0.005	-1.137	<i>Distress zone</i>
	BRMS	2012	-0.136	0.055	0.004	1.104	0.011	0.601
2013		-0.263	-0.007	0.004	0.724	0.010	0.134	<i>Distress zone</i>
2014		-0.333	-0.055	0.005	0.925	0.009	0.104	<i>Distress zone</i>
2015		-0.408	-0.073	-0.001	0.104	0.006	-0.525	<i>Distress zone</i>
2016		-0.246	-0.428	-0.003	0.293	0.002	-0.726	<i>Distress zone</i>
2017		0.239	-0.800	-0.006	0.424	0.006	-0.592	<i>Distress zone</i>
DEWA	2012	0.117	-0.107	-0.045	0.685	0.762	1.015	<i>Distress zone</i>
	2013	0.084	-0.270	-0.029	0.633	0.607	0.613	<i>Distress zone</i>
	2014	0.130	-0.276	0.039	0.668	0.660	0.955	<i>Distress zone</i>
	2015	0.073	-0.257	0.064	0.641	0.644	0.966	<i>Distress zone</i>
	2016	0.009	-0.251	0.042	0.523	0.679	0.790	<i>Distress zone</i>
	2017	-0.058	-0.233	0.086	0.461	0.604	0.767	<i>Distress zone</i>

Based on table 9 it was concluded that the five Bakrie Group companies, namely UNSP, BNBR, BUMI, BRMS, DEWA, were in accordance with the results obtained by the company in a distress zone. This is indicated by the Z score in the five companies below 1, 81. In accordance with the Z score category statement, these five companies experienced financial distress. The average value of the Bakrie Group company's financial ratios in 2012 to 2017 is:

- UNSP has an average ratio value working capital to total assets, retained earnings to total assets, and earnings before interest and tax to negative total assets for 6 years.
- BNBR has an average value of working capital to total assets, retained earnings to total assets, and earnings before interest and tax to negative total assets for 6 years.
- BUMI has an average value of working capital to total assets and retained earn negative total assets for 6 years.
- BRMS has an average value of working capital to total assets and retained earn negative total assets for 6 years.
- DEWA has an average value of retained earnings to negative total assets for 6 years.

Based on the conclusions that have been analyzed by the researcher, the researcher suggests :
Advice for Bakrie Group companies:

1. For the five companies,
 - the problem faced is the company's liquidity and profitability. In the case of liquidity, the company can add working capital from the addition of the company's operating results, the sale of shares and bonds, the sale of fixed assets that are not needed, or by way of sale of securities by a higher price.
 - In terms of profitability, The fifth company is also expected to augment retained earnings by reducing the dividend distribution d and reduced operating losses in the company.
 - As for the issue of asset productivity in generating profits, (EBIT) companies can reduce operating expenses, such as salaries, rental expenses and others related to company operations.
2. For investors:

This research is the development of signals published by the company. The results of this research are expected to be useful for investors as information material and references for consideration in investing.\
3. Suggestions for further research:

This research can be used as a reference to analyze financial distress in a company. In addition to manufacturing companies, the Altman method can also be used for non-manufacturing companies so that more samples are used. Other financial distress prediction methods that can be used are Grover, Springate, and Zmijewski.

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