Research Paper

An Analysis on the Influence of Fundamental Factors, Intellectual Capital and Corporate Governance on Bankruptcy Prediction Using Springate (S-Score) Method in the Mining Companies Listed on the Indonesian Stock Exchange

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ABSTRACT

Stakeholders should understand bankruptcy prediction of a company as an early warning system for the possibility of bankruptcy or financial problem that will always be encountered by the company in the future. The objective of the research was to analyze the influence of the fundamental factors such as financial ratio (measured from liquidity, profitability, solvability, and activity), intellectual capital (measured from Value Added Intellectual Capital / VACA), Value Added Human Capital/VAHU, Structural Capital Value Added/ STAVA, and Corporate Governance Mechanism (measured through Board of Directors, Board of Commissionaires, Managerial Ownership, institutional ownership, independent commissionaire, and auditing committee) on the bankruptcy prediction of the mining companies listed on BEI (the Indonesian Stock Exchange). The analysis used to test the variables was Chow test (F-test) and Hausman test to test the significance and properness of the model as well as its fixed effect to influence financial ratio, intellectual capital and corporate governance on the chance of bankruptcy according to S-Score model. The samples consisted of 33 companies in mining sector listed on BEI. The data used and processed were the financial reports of the companies in the observation years from 2012 until 2016 with 165 analysis units. The results of this research demonstrated that, simultaneously, the fundamental factors such as financial ratio, intellectual capital, and Corporate Governance had some influence on the bankruptcy prediction. Partially, financial ratio (Liquidity, Solvability and Activity), Intellectual Capital (VACA and VAHU), and Corporate Governance (Director Size) had negative and significant influence on bankruptcy prediction. STVA and managerial Ownership had positive and significant influence on the bankruptcy prediction. Meanwhile, Profitability, Commissionaires Size, Institutional Ownership, and Auditing Committee did not have any significant influence on the bankruptcy prediction.

Keywords: Fundamental Factors, Intellectual Capital, Corporate Governance, and Bankruptcy Prediction

INTRODUCTION

The uncertain global economic conditions in the past decade turned out to have a huge impact on the survival of a company. The crisis that occurred at the end of 2008 had caused many companies to go bankrupt or force the company to close several business units for the survival of the company. Economic recovery in the aftermath of the 2008 crisis did not last long because at the end of 2013 most developed countries had to face an economic recession which had an impact on the economy of developing countries including Indonesia. These conditions turned out to have had a significant impact on the survival of mining

companies in Indonesia. The fall in world oil prices and the drop in coal demand in various export destination countries have led mining companies to severe financial difficulties, even in 2015 there were 40 coal subsector companies having to close operations or experience bankruptcy (APBI, 2015).

Bankruptcy is basically not a stand-alone event, but it is the last sequence of various series of corporate failure conditions that are not able to be handled properly. Bankruptcy usually begins with economic failure, namely the condition of a decrease in the company's profitability to minus (the total income is less than the total expenditure of the company). The protracted economic failure will lead to business failure, which is the condition of the company experiencing a credit failure. This condition is marked by the cessation of business operations or continuing business operations through debt restructuring.

Economic failures that are not handled properly will continue to be a more insolvency condition, namely the inability of the company to meet current obligations when due. The inability to pay debts technically indicates a temporary liquidity shortage, which if given time, the company may be able to pay its debts and survive. However, if the condition is not handled properly it can be a greater economic failure and may also be the initial stage towards financial disaster.

The condition of inadequate repayment of debts will bring the company into a state of true bankruptcy even though it has not been declared legally bankrupt. This condition is called insolvency in bankruptcy which is marked by a debt value that exceeds the market value of the company's assets. A company is declared bankrupt (legal bankruptcy) if an official claim has been filed by law (Brigham and Gapensky, 1997).

Bankruptcy occurs in the last series of corporate failures and financial distress. There has been a lot of literature describing the prediction model of bankruptcy among companies conducted by Altman, this is because it is very difficult to define objectively the definition of bankruptcy. Thus, the bankruptcy prediction model needs to be developed, because knowing the prediction conditions of a company's bankruptcy from an early age is expected to take important actions, policies and decisions to anticipate conditions that lead to bankruptcy.

The purpose of this study was to develop a prediction model of corporate bankruptcy and examine the influence of fundamental factors, intellectual capital, and corporate governance on the predictions of the Springate bankruptcy model (S-Score) in mining companies listed on the Indonesia Stock Exchange.

The motivation of this research is to find out how the influence of the fundamental factors are measured through the ratio of equity, profitability, solvency and activity, the influence of Intellectual Capital (IC) as measured by Value Added Physical Capital (VACA), Value Added Human Capital (VAHU) and Structural Capital value Added (STVA), and the effect of Corporate Governance (CG) measured through the size of the board of directors, the size of the commissioner, managerial ownership, institutional ownership, independent commissioner, and the size of the audit committee on the Springate model bankruptcy prediction (S-Score). While the contribution of this study is to provide information for internal and external parties regarding the influence of various variables on bankruptcy predictions.

LITERATURE REVIEW

Research on bankruptcy prediction was first carried out by Beaver (1968) in Foster (1986: 542) against 79 failed companies and 79 companies that did not fail in the period 1954-1964. The failed company category is one that meets one of the following events: bankruptcy, default bond, overdrawn bank account, or not make dividend payment on preferred stock. With the univariate technique using 30

independent variables, obtained results in the form of five financial ratios that are significantly capable of distinguishing companies that fail and do not fail, namely cash flow / total debt ratio, net income / total assets, total debt / total assets, working capital / total assets and the current ratio with the prediction accuracy of the company failed at 90% and did not fail at 88%.

Research on bankruptcy prediction in the following years has experienced development. These developments include the use of multivariate analysis techniques in producing predictive models. Like the research conducted by Altman (1968) using discriminant and Ohlson analysis techniques in Foster (1986: 547) in 1980 with logistic regression techniques. Springate formulated a bankruptcy prediction model in 1978. In its formulation, Springate used the same method as Altman, namely Multiple Discriminant Analysis (MDA). Initially the S-Score model consisted of 19 popular financial ratios. After going through the same test as Altman, Springate chose to use 4 ratios that were believed to be able to differentiate between companies that had gone bankrupt and those who had not gone bankrupt.

Various studies have examined the accuracy of the results of various models including Prihantini and Sari (2013) who conducted research on bankruptcy analysis using Grover, Altman Z-Score, Springate, and Zmijewski models on food and beverage companies. The results showed that the Grover model is an appropriate model applied to food and beverage companies because it has the highest accuracy compared to other models, namely Grover 100%, Altman 80%, Springate 90% and Zmijewski 90%. Kurniawati, (2015) from the results of research on Islamic banking companies with the accuracy level of bankruptcy prediction models it can be concluded that the Grover G-Score model (96.36%) has the highest aquation rate compared to the sringate S-Score (76.36%) and Alman Z-Score model (72.36%). The Grover G-Score model is composed of a component of one ratio of liquidity (Working capital / Total assets) and two profitability ratios before interest and interest / Total assets and ROA).

Fundamental factors and bankruptcy predictions

Gameel and El-Geziry (2016) study of 37 companies listed on the Egyptian Stock Exchange within eight years from 2001 to 2008. This study used independent variables in the form of 22 financial ratios. The method used in this study uses the Altman Z-Score formula in identifying companies that experience financial distress and use the Neural Network in predicting financial distress. This study categorizes the independent variables into 6 factors with 6 scenarios with the following results: The company will experience financial distress if there is a decrease in liquidity, a decrease in cash receipts from sales and an increase in the company's financial leverage.

Intellecual Capital and Bankruptcy Prediction

Mollabashi and Sendani Research (2014) of 120 companies listed on the Tehran Stock Exchange based on the company's financial statements over a six-year period (2008-2013). This study measures the influence of intellectual capital on the risk of corporate bankruptcy. In general, the results of this study indicate that all intellectual capital indicators used which consist of intellectual capital, human capital, customer capital / relational capital and structura / organizational capital have a negative and significant effect on the risk of bankruptcy of companies listed on the Tehran Stock Exchange. Pour et.al. (2014) of 55 companies listed on the Tehran Stock Exchange based on the company's financial statements over a seven-year period (2005-2011). The results of this study indicate that intellectual capital affects return on equity, return on assets, employee productivity, stock market value and earnings per share. Bakhshani's (2014) study of 23 food and beverage industry companies listed on the Tehran Stock Exchange over a seven-year period (2004-2009). The results of this

study indicate that the component of intellectual capital does not affect the prediction of corporate bankruptcy. However, value added can be used as a predictor in the analysis of company bankruptcy predictions.

Corporate Governance and Bankruptcy Prediction

Sastriana and Fuad (2013) study of all companies except the banking industry listed on the Indonesia Stock Exchange (IDX) in 2009-2012. The results of this study indicate that the structure of corporate governance that affects financial distress consists of the number of directors and the number of audit committee members. While other variables in the form of the proportion of independent commissioners, institutional ownership, managerial ownership, and company size proved to have no effect on financial distress. Fathonah's research (2016) on property, real estate and building construction companies listed on the Indonesia Stock Exchange in 2013. The results of this study indicate that the composition of the independent board of directors has a significant negative effect on financial distress. While institutional ownership, managerial ownership, and audit committee, negatively, positively, and positively influenced financial distress, it was not significant. Ellen and Juniarti's (2013) study of 64 manufacturing companies listed on the Indonesia Stock Exchange. The results of this study indicate that the three CGC score models consistently cannot predict a company that experiences financial distress. The results of this study also showed that there was no significant difference in the average GCG score between companies that experienced financial distress with companies that did not experience financial distress.
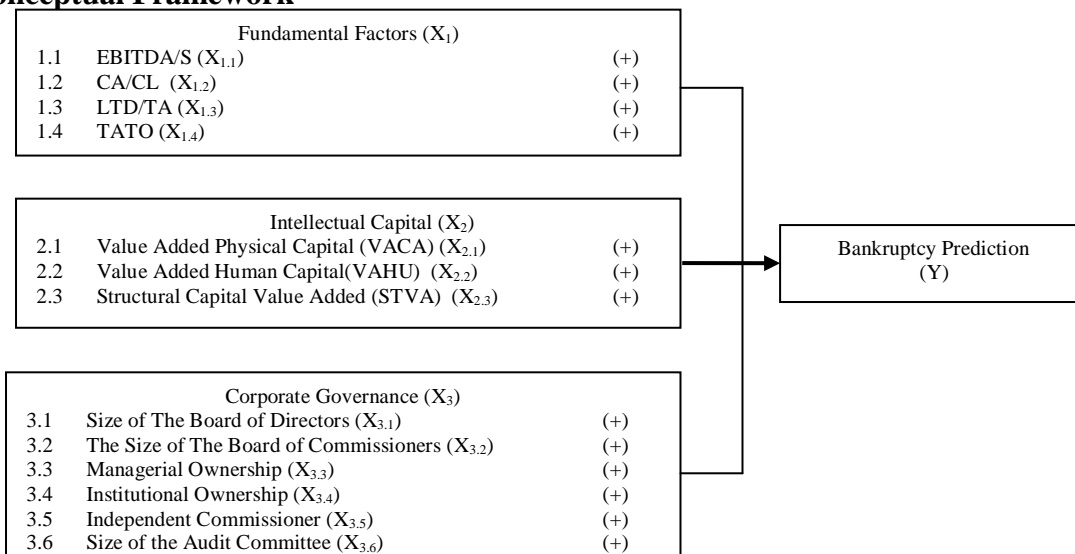
MATERIALS AND METHODS
Method of Collecting Data

In this study secondary data was collected by conducting documentation methods. From these sources quantitative data is obtained in the form of financial report data that has been published by companies that have gone public and listed on the Indonesia Stock Exchange.

Population and Sample

The populations used in this study are mining companies listed on the Indonesia Stock Exchange in the 2012-2016 period, totaling 41 companies consisting of 33 companies that publish audited complete financial statements (2012-2016) and 7 companies do not issue audited financial statements with complete (2011-2016). Thus the number of samples in this study consisted of 33 companies with observations of 165 units of analysis (33 x 5 years).

Conceptual Framework

Fundamental Factors (X_1)
1.1 EBITDA/S ($X_{1.1}$) (+)
1.2 CA/CL ($X_{1.2}$) (+)
1.3 LTD/TA ($X_{1.3}$) (+)
1.4 TATO ($X_{1.4}$) (+)

Intellectual Capital (X_2)
2.1 Value Added Physical Capital (VACA) ($X_{2.1}$) (+)
2.2 Value Added Human Capital(VAHU) ($X_{2.2}$) (+)
2.3 Structural Capital Value Added (STVA) ($X_{2.3}$) (+)

Corporate Governance (X_3)
3.1 Size of The Board of Directors ($X_{3.1}$) (+)
3.2 The Size of The Board of Commissioners ($X_{3.2}$) (+)
3.3 Managerial Ownership ($X_{3.3}$) (+)
3.4 Institutional Ownership ($X_{3.4}$) (+)
3.5 Independent Commissioner ($X_{3.5}$) (+)
3.6 Size of the Audit Committee ($X_{3.6}$) (+)

Bankruptcy Prediction (Y)

Operational Definition of Variables

The research variables that will be used in this study are independent variables consisting of: fundamental factors measured through financial ratios, intellectual capital and corporate governance and the dependent variable is the prediction of the Springate S-score bankruptcy model.

DISCUSSION

This study used 33 companies as samples from 41 mining companies in the observation period 2012 to 2016. Furthermore, these companies carried out financial statement analysis using 4 financial ratios, 3 Intellectual Capital ratios, and 6 established corporate governance indicators with regard to research before. Based on these financial ratios, Springate's analysis is used with a S-score with a strict value to categorize the company in a healthy and potentially bankrupt category. The company is categorized as a healthy company if the S-score value exceeds or equals 0.862 (S 8 0.862). Conversely, if the S-score is less than 0.862 (S <0.862) then it is categorized as a bankrupt company. Based on the above stages, the health conditions of these companies can be seen in the following table:

Based on Table 4.1 it can be seen that there are 11 companies (ARII, BUMI, DEWA, PKPK, BIPI, MEDC, PSAB, SMRU, CTTH, ENRG, SMMT) which are

predicted to be bankrupt, in 5 consecutive years (ITMG, KKGI, MYOH, PTBA, ELSA, RUIS) are in a healthy condition for a period of 5 consecutive years, and the rest experience health changes (from being healthy to going bankrupt and vice versa).

Table 4.1 Prediction Conditions for Corporate Bankruptcy Based on S-score

No	Company Code	Condition				
		2012	2013	2014	2015	2016
1	ADRO	1.209	0.921	0.779	0.715	1.405
2	ARII	-0.346	-0.770	-0.582	-0.670	-0.649
3	BSSR	1.070	0.416	0.584	1.640	1.650
4	BUMI	0.064	-0.209	-0.534	-2.359	-0.479
5	BYAN	0.655	0.193	-0.268	0.130	1.105
6	DEWA	0.006	-0.521	0.509	0.432	0.391
7	DOID	0.542	0.450	0.823	0.796	0.907
8	GEMS	3.293	1.904	1.103	0.827	1.836
9	HRUM	3.732	2.061	1.107	0.430	1.353
10	ITMG	3.064	2.079	1.785	1.567	1.767
11	KKGI	3.042	2.248	1.462	1.302	2.129
12	MYOH	1.074	1.524	1.907	2.154	2.560
13	PKPK	0.540	0.564	-0.154	-1.399	-0.600
14	PTBA	3.251	2.041	1.593	1.304	1.262
15	ARTI	0.547	1.014	0.460	0.416	0.319
16	BIPI	0.257	0.362	-0.296	-0.435	-0.360
17	ELSA	1.065	1.270	1.339	1.051	1.026
18	ESSA	1.098	1.754	1.083	0.234	0.155
19	MEDC	0.250	0.186	0.552	0.181	0.322
20	RUIS	0.971	1.127	0.997	1.008	0.871
21	ANTM	1.438	0.395	0.119	0.210	0.460
22	CITA	1.451	2.027	-0.219	-0.451	-0.156
23	INCO	0.847	0.648	1.436	0.756	0.367
24	PSAB	0.322	-0.340	0.464	0.537	0.540
25	SMRU	-1.633	0.419	-0.101	-0.496	-0.419
26	TINS	1.803	1.178	1.107	0.617	0.748
27	CTTH	0.454	0.645	0.296	0.493	0.674
28	MITI	1.939	2.101	0.635	-1.244	0.104
29	ENRG	0.442	0.737	0.395	-0.301	-0.245
30	GTBO	4.075	-0.454	-0.649	-6.097	-3.355
31	PTRO	1.166	0.946	0.849	0.104	0.248
32	SMMT	0.700	0.726	0.061	-0.376	-0.332
33	TOBA	1.133	0.769	1.705	1.429	0.974

Correlation Matrix Between Independent Variables

	LIK	PRO	SOL	AKT	VACA	VAHU	STVA	DIR	KOM	KM	KI	KIND	KA
LIK	1	0.238	-0.263	0.054	0.004	0.03	-0.072	-0.016	0.142	-0.248	0.239	0.013	0.077
PRO	0.238	1	0.117	0.296	0.165	0.38	-0.06	0.193	0.106	-0.094	0.046	0.135	0.031
SOL	-0.263	0.117	1	-0.254	0.105	0.064	0.008	0.099	0.018	0.174	-0.138	0.145	-0.126
AKT	0.054	0.296	-0.254	1	0.295	0.125	-0.018	0.187	0.058	-0.109	0.153	0.078	0.251
VACA	0.004	0.165	0.105	0.295	1	-0.014	-0.07	-0.062	0.03	-0.162	-0.086	0.108	0.035
VAHU	0.03	0.38	0.064	0.125	-0.014	1	-0.033	0.084	0.031	-0.071	-0.052	0.078	0.002
STVA	-0.072	-0.06	0.008	-0.018	-0.07	-0.033	1	0.233	-0.006	0.254	-0.159	-0.001	-0.019
DIR	-0.016	0.193	0.099	0.187	-0.062	0.084	0.233	1	0.395	0.423	-0.046	0.289	0.018
KOM	0.142	0.106	0.018	0.058	0.03	0.031	-0.006	0.395	1	0.19	-0.073	0.644	0.162
KM	-0.248	-0.094	0.174	-0.109	-0.162	-0.071	0.254	0.423	0.19	1	-0.577	0.165	-0.088
KI	0.239	0.046	-0.138	0.153	-0.086	-0.052	-0.159	-0.046	-0.073	-0.577	1	-0.082	-0.079
KIND	0.013	0.135	0.145	0.078	0.108	0.078	-0.001	0.289	0.644	0.165	-0.082	1	0.095
KA	0.077	0.031	-0.126	0.251	0.035	0.002	-0.019	0.018	0.162	-0.088	-0.079	0.095	1

The table above shows that there is no relationship between independent variables with a value of more than 0.8. Data is said to be identified as multicollinearity if the

correlation coefficient between independent variables is more than one or equal to 0.8 (Gujarati, 2003). So it can be concluded that there is no multicollinearity between

independent variables. Thus, the panel data in this study have been free from the problems of heteroscedasticity (heteroscedasticity), auto correlation (auto correlation) and multicollinearity (multicollinearity).

Chow Test

Chow test is a test to determine whether the model is Common Effect (CE) or Fixed Effect (FE) which is most appropriate to be used in estimating panel data.

If Results:

Prob. Chi-square cross-section <0.05, the fixed effect model is chosen

Prob. Chi-square cross-section> 0.05 then the common effect model is selected

Redundant Fixed Effects Tests			
Pool: POOLDATA			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.829290	(32,119)	0.0105
Cross-section Chi-square	66.009419	32	0.0004

Source: Results of panel data output Eviews 10.1

Based on the results of the Chow Test above, the Prob value. Chi-square cross-section <0.05, this result proves that the fixed effect model is better than the common effect. And vice versa if the value is> 0.05 then we will choose the common effect rather than the fixed effect.

Hausman Test

Hausman test aims to compare the fixed effect method and the random effect method. The result of testing using this test is knowing which method should be chosen. The following is the output of the test using the Hausman Test.

Table 4.5 Model Test Results Using the Hausman Test

Correlated Random Effects - Hausman Test			
Pool: LAMP1			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	25.319906	13	0.0209

Source: Results of panel data output Eviews 10.1

In the calculations that have been done, it can be seen that the probability value in the cross section random effect test shows a value of 0.0209 which means significant with a 95% significance level (α = 5%) and using the Chi-Square distribution (Gujarati, 2003).

So the decision taken in the Hausman test is based on the probability value (p-value) with the following conditions:

p-value> 0.05: random effects method

p-value <0.05: fixed effects method

Based on the results of the Hausman Test test, the choice method used in the study is the fixed effect method.

Fixed Effect Model Regression Results with White Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.703692	0.129827	-5.420223	0.0000
LIKUIDITAS?	0.216637	0.022490	9.632779	0.0000
PROFITABILITAS?	0.093531	0.056941	1.642605	0.1031
SOLVABILITAS?	0.546118	0.192720	2.833736	0.0054
AKTIVITAS?	1.354861	0.189461	7.151128	0.0000
VACA?	0.116441	0.027445	4.242764	0.0000
VAHU?	0.057437	0.004256	13.49614	0.0000
STVA?	-0.010161	0.002852	-3.562805	0.0005
DIREKSI?	0.064404	0.030569	2.106868	0.0372
KOMISARIS?	0.023333	0.024421	0.955422	0.3413
KEPMAN?	-1.430359	0.321465	-4.449505	0.0000
KEPINS?	-0.746704	0.379570	-1.967238	0.0515
KIND?	0.035466	0.088283	0.401738	0.6886
KA?	-0.055954	0.034157	-1.638151	0.1040
	Effects Specification			
Cross-section fixed (dummy variables)				
	Weighted Statistics			
R-squared	0.900998	Mean dependent var		1.521797
Adjusted R-squared	0.863561	S.D. dependent var		1.881785
S.E. of regression	0.603519	Sum squared resid		43.34400
F-statistic	24.06671	Durbin-Watson stat		1.923810
Prob(F-statistic)	0.000000			
	Unweighted Statistics			
R-squared	0.766936	Mean dependent var		0.662780
Sum squared resid	50.32835	Durbin-Watson stat		1.612774

From the output above, it can be seen that there is a change where some of the independent variables are statistically significant. The changes that occur are the result of the error variance consensus which shows that in the initial model there is indeed heteroscedasticity. With the adjusted R² value of 0.863561 which means the variation of the bound model on the bankruptcy prediction model S-score can be explained by independent variables of liquidity, profitability, solvency, activity, VACA, VAHU, STVA, directors, commissioners, managerial ownership, institutional ownership, independent commissioners, and the audit committee of 86.36% indicated that the independent variables tested were very good in explaining the dependent variable. Furthermore, an estimate of the Fixed Effects method research model was used using White Heteroscedasticity Cross-Section Standard Error & Covariance.

The output shows that the DW-stat value is 1.923810 which is in the range of number 2 (1.5 <DW-Stat <2.5). This indicates that the model does not have autocorrelation problems. As stated by Gujarati (2003) in his book, if using the GLS (Generalized Least-square) model in the study, the output does not have a problem in autocorrelation. In this study, the regression model used is using the GLS method, so it can be concluded that the autocorrelation problem can be resolved.

The model used in this study is the fixed effect model. As already known in Fixed Effect or Fixed Effects Model, differences in individual characteristics and time are accommodated in the intercept so that the intercept of each company varies as well as the constants that are owned differently.

Bankruptcy Prediction = C + 0.216637 Liquidity + 0.093531 Profitability + 0.546118 Solvability + 1,354861 Activity + 0, 116441 VACA + 0,057437 VAHU - 0,010161 STVA + 0,064404 Directors + 0,023333 Commissioner - 1,430359 Managerial Ownership - 0,746704 Institutional Ownership + 0.035466 Independent Commissioner - 0,055954 Audit Committee + e

From the above equation, the variable liquidity measured through CA / CL with a regression coefficient of 0.216337 with a significance of 0.0000 means that the variable liquidity has a positive effect on bankruptcy predictions. Profitability variables measured through EBITDA / S with a regression coefficient of 0.093531 with a significance of 0.1031 means that the profitability variable has a positive and insignificant effect on the prediction of corporate bankruptcy. EBITDA / S in this study does not affect the prediction condition of company bankruptcy because there are many factors that cause changes in earnings to sales from year to year, so investors tend to ignore the existing EBITDA / S information to the maximum so that management becomes unmotivated in knowing the bankruptcy condition through these variables because EBITDA / S is not the only benchmark of company profitability in measuring the prediction conditions of a company's bankruptcy. Solvability variables measured through LTD / TA with a regression coefficient of 0.546118 with a significance of 0.0054 means that the solvability variable has a positive effect on bankruptcy predictions. Activity variables measured through Total Asset Turnover (TATO) with a regression coefficient of 1.354861 with a significance of 0.000 means that the activity variable has a positive effect on bankruptcy predictions.

Value Added Physical Capital (VACA) which is measured through VA / CA with a regression coefficient of 0.116441 with a significance of 0.0000 meaning that the VACA variable has a positive and significant effect on bankruptcy predictions. The Human Efficiency Coefficient (VAHU) was measured through VA / HC with a regression coefficient of 0.057437 with a significance of 0.0000 meaning that the variable VAHU had a

positive and significant effect on bankruptcy prediction. Structural Capital Value Added (STVA) which is measured through SC / VA with a regression coefficient of - 0.10161 with a significance of 0.0005 meaning that the STVA variable has a negative and significant effect on bankruptcy prediction. Explanation of the results of the study is an indication that the use of physical and financial assets still dominates in contributing to the company's performance. This shows that the company has not been able to manage its assets optimally which causes operational costs to increase. The company has not been able to reduce operating costs so as to cause inefficient structural capital. High operational costs will cause the company's profit to fall, and a continuous decline in profits can bring losses even to the company's bankruptcy. The Board of Directors variable measured by the number of the company's board of directors with a regression coefficient of 0.064404 with a significance of 0.0372 means that the board of directors has a positive and significant effect on bankruptcy prediction.

The Board of Commissioners' variables measured by the number of commissioners owned by the company, from the results of panel data regression analysis, obtained a regression coefficient of 0.023333 with a significance of 0.3413 meaning that the board of commissioners had a positive and insignificant effect on bankruptcy predictions in mining sector companies listed on the Exchange Indonesian securities. The results of this study are in accordance with research conducted by Wardhani (2006) where the presence of independent commissioners does not affect companies that experience financial distress. This situation is also supported or in line with the results of Tabalujan (2001) which states that companies in Indonesia, the formation of a board of commissioners is limited only to meet the rules for the establishment of a company that goes public, in practice the board of commissioners does not work

optimally in accordance with the role that should held.

Managerial Ownership as measured by the percentage of management share ownership in the company results in a regression coefficient of -1.430359 with a significance of 0.00000 which means that managerial ownership has a negative and significant effect on bankruptcy predictions in mining sector companies listed on the Indonesia Stock Exchange. The results of this study are consistent with the results of Teall (1993) in Fachruddin (2008) who found that insider ownership is positively related to managerial decision-making behavior and corporate failure in the industry. Similarly, Classens et al. (1999) in Wardhani (2006) states that if the board of directors and board of commissioners have share ownership, then the board will tend to carry out expropriation actions or takeovers that benefit him personally. So, the more ownership of the board of directors, the decisions taken will be more likely to benefit him and overall harm the company so that the value of the company will likely decrease. Lee and Yeh (2004) also found the same thing when examining the relationship of corporate governance and financial difficulties, namely wealth expropriation by controlling shareholders is positively related to opportunities for financial difficulties.

Institutional ownership is measured through a percentage of the number of shares of the company owned by the institution with a regression coefficient of - 0.746704 with a significance of 0.0515 meaning that institutional ownership does not have a significant effect on bankruptcy predictions in mining sector companies listed on the Indonesia Stock Exchange. The results of this study are almost the same as those of Lizal (2002) in Fachruddin (2008) in a test of corporate governance models with probit regression in the Czech Republic found that government and foreign ownership reduce the probability of going bankrupt even though it is not always significant in some analysis. The results of this study were also strengthened by the

results of Fathonah's research (2016) which stated that institutional ownership had no significant effect on financial distress. In this case, a large institutional ownership with good management control will be able to reduce the prediction of corporate bankruptcy. However, it cannot be denied that companies can experience bankruptcy if the company institutions lack the ability to control the manager's performance. Independent commissioners are measured based on the number of independent commissioners owned by the company. Based on the results of logistic regression analysis obtained regression coefficient of 0.035466 with a significance of 0.6886 which means that the size of independent commissioners has a positive and insignificant effect on bankruptcy predictions. The results of this study indicate that the size of independent commissioners is not significant in bankruptcy prediction because most mining sector companies have a high concentration of share ownership by institutions or government.

Independent commissioners as a reflection of public ownership of the company that functions as a counter-power (controlling power) have little effect on management policy. . The results of this study are consistent with the research conducted by Wardhani (2006) which proves the existence of independent commissioners does not affect companies that experience financial distress. According to Wardhani (2006) the less significant value of independent commissioners may be due to the existence of an independent commissioner which is only a formality to fulfill regulations. So that the existence of an independent commissioner is not to carry out a good monitoring function and does not use its independence to oversee the policy of the board of directors. This finding is in line with the results of Lubis's (2016) study and the results of Fathonah's research (2016) which states that the size of independent commissioners is not significant to financial distress. The audit committee is measured

based on the number of members in the audit committee. The results of logistic regression analysis showed that the regression coefficient was -0.055954 with a significance of 0.1040, meaning that the audit committee variable had no significant effect on bankruptcy prediction, so that it could not be used to predict bankruptcy in mining sector companies listed on the Indonesia Stock Exchange. The results of this study are in line with Ellen and Juniarti (2013) who use the GCG score in their research which uses an audit committee whose results are consistently unable to predict a company experiencing financial distress. This may be because GCG in a company is only a formality that is not supported by efficient performance (Fathonah, 2016).

CONCLUSION

Based on the results of research conducted on a sample of mining sector companies that go public and are listed on the Indonesia Stock Exchange (BEI) for the period 2012 to 2016, the following conclusions can be drawn:

1. There is simultaneous influence of fundamental factors, Intellectual Capital, and Corporate Governance on bankruptcy predictions.
2. Partially fundamental factors consisting of liquidity measured through current assets divided by current liabilities (CA / CL), Solvency measured through long-term liabilities divided by total assets (LTD / TA), and Activities measured through company asset turnover (TATO) has a significant and positive effect on the prediction of corporate bankruptcy. While the profitability measured through EBITDA / S does not have a significant effect on the prediction of corporate bankruptcy.
3. Partially Intellectual Capital (IC) variables measured by Value Added Physical Capital (VACA), and Value Added Human Capital (VAHU) have a significant and positive influence on the prediction of corporate bankruptcy.

While the Structuralial Value Added (STVA) has a significant and negative effect on the prediction of corporate bankruptcy.

4. Partially corporate governance variables for the size of the board of directors have a significant and positive effect on bankruptcy predictions while managerial ownership has a significant negative effect. The size of the board of commissioners, institutional ownership, independent commissioners and the size of the audit committee have no significant effect on bankruptcy predictions in mining sector companies listed on the IDX.

SUGGESTION

Based on these conclusions and limitations, the researchers gave the following suggestions:

1. For mining sector companies, they should always manage with the maximum possible variety of variables, especially those that have been tested to significantly influence the prediction of bankruptcy of the company, because it can improve the company's performance and minimize the potential for bankruptcy in mining companies.

2. For investors, it is expected that the results of this study can be used as consideration in making investment policies, especially in the mining sector.

3. For further research, it is expected to be able to apply various other bankruptcy prediction models in accordance with the characteristics of the business sector under study.

4. Subsequent researchers who will conduct similar research are advised to use a wider sample that is not limited to the mining sector with other bankruptcy prediction models. Partially, corporate governance variables for the size of the board of directors have a significant and positive effect on bankruptcy predictions while managerial ownership has a significant negative effect. The size of the board of commissioners, institutional ownership, independent commissioners and the size of the audit committee have no significant effect on bankruptcy predictions in mining sector companies listed on the IDX.

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