CORPORATE FAILURE PREDICTION:

A STUDY OF PUBLIC LISTED COMPANIES

IN INDONESIA STOCK EXCHANGE (IDX)

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Abstact

The main purpose of this research is to develop a model that can predict financial distress amongst public listed companies in Jakarta Stock Exchange from year 2008 until 2013. Author uses 216 companies as sample where 168 for healthy companies and 48 for distress companies. The methodology that use on this paper is using logistic regression analysis.

The result proves there are four financial ratios namely: Quick Asset Turnover, Cash Flow to Assets, Total Liabilities Total Assets, and Debt Ratio that have been found to be significant and useful for corporate failure prediction in Jakarta Stock Exchange. The results show that logistic regression analysis is a more reliable technique for predict financially healthy companies than distress companies. But, overall classification results of 81 percent prove that the model can describe the financial condition of the companies.

Keywords: Economic forecasting, Financial Modeling, Business failures, failure prediction, Financial Distress Prediction

INTRODUCTION

Research Background

Recently, the economic condition around the world is going stronger; it is caused by the open market policy that occurs almost around the world. Open market policy allows countries that participate to the organization can sell (export) or buy (import) products or services without paying a tax. This policy gives big advantages to the companies that have strong economic condition to get higher profit and increase the number of export. But, not all companies get the advantages of that policy. New and small companies which cannot survive and compete with others companies especially from foreign will face difficulty that leads into bankruptcy.

Bankruptcy or Business failure is the important fact of life in the business environment. Business failure occurs when a firm is unable to meet its obligations. Over the past few years business failure have been rising and become more seriously. The effect of business failure gives lots negative impact to the shareholders, creditors, suppliers, owner(s), and employees who work in that company and also it gives indirect effects to the society such as increasing unemployment and criminality.

Actually, financial failures (financial distress) that lead into bankruptcy are generally evidenced long before the event. Early indicators of bankruptcy include decreasing amount of profit, increasing debt, declining number of sales, etc. Since failures cause many social and economic problems, their avoidance is highly beneficial. Due to big impact caused by failure, failure prediction has become an important topic in corporate finance literature over the past two decades. That's why now adays many researchers try to developed model of failure prediction to predict accurately and precisely.

Problem Statement

In conducting research about failure prediction, Author is immediately confronted with one problem:

Is the logistic regression analysis can predict corporate failure in Indonesia Stock Exchange (IDX) accurately?

Research Scope

This study will concern to develop a model that can predict financial distress amongst public listed companies in Indonesia Stock Exchange (IDX) using the logistic regression analysis. The data observation will only focus on the listed companies that have been listed in the Indonesia Capital Market Directory (ICMD) year 2009. This study only uses the data from period 2008-2013.

Research Objectives

The objective of this research is to develop a model that can predict financial distress amongst public listed companies in Indonesia Stock Exchange (IDX) using regression analysis.

THEORETICAL BACKGROUND

Corporate failure is situation when company faced crisis in terms of financial and do not take proper actions that can avoid bankruptcy. According to (Bryan, 2012), financial distress in firms that lead to bankruptcy is generally evident long before the event. Based on that study, Author believes that predicting bankruptcy is necessary to investigate.

Financial Distress

Financial distress is a situation where a firm's operating cash flows are not sufficient to satisfy current obligations (such as trade credits or interest expenses), and the firm is forced to take corrective action. According to Platt and Platt (2012), financial distress may lead a firm to default on a contract, and it may involve financial restructuring between the firm, its creditors, and its equity investors. Usually the firm is forced to take actions that it would not have taken if it had sufficient cash flow.

Bankruptcy

Financial distress may or may not lead into Bankruptcy. A firm is in financial distress when it is having trouble paying its debts as they come due. On the other hand, a firm is bankrupt when it has filed a petition for relief from its creditors under the bankruptcy codes, or when it has consented to a filing by its creditors (Chang, 2000).

In Indonesia, Indonesia Bankruptcy system regulated by Undang Undang Republic Indonesia No. 37 Tahun 2004 Tentang Kepailitan dan Penundaan Kewajiban Pembayaran Utang. (BPKP, 2004). According to the UU No. 37 Year 2004 Bankruptcy process is performed in the Commercial Court.

There are two sources of bankruptcy:

1. External Factors
   1.1 Market Condition
   Market condition is related with business cycle. Usually customers want something that in the trend situation, they do not want to buy something that out of trend.
   1.2 Intense Competition
   In this tight competition directly forced the companies to be more creative and innovative, especially for the small companies which don't have strong financial condition yet. Usually, this competition is focus on the price and quality competition, how to produce higher quality in lower price.

1.3 Other causes

Bankruptcy can result from a host of other underlying problems that inhibit profitability. Some other factors that can contribute to bankruptcy include poor business location, loss of key employees, lawsuits raised by competitors and personal issues like illness or divorce. Unforeseen disasters and criminal activities like floods, storms, theft, and fraud can also cause hardships that lead to bankruptcy.

2. Internal Factors

2.1 Poor Management

According to Dun & Bradstreet survey, 94 percent of business failure was caused by lack of management experience, unbalanced experience, or outright managerial incompetence. For the additional information, based on the book of RE-CODE YOUR CHANGE DNA by Rhenald Kasali (2007), the author motivates managers in the companies to change if they want to improve the condition of their companies to avoid bankruptcy.

2.2 Unwise Expansion

This situation happened when the company only focus to expand the company without consider other negative possibilities. Because of that policy, whole company can faced bankruptcy. Author does not say that expansion is bad; expansion is good and profitable if the company consider all possibilities wisely.

2.3 Too Much Debt

When company faced too much debt, it makes the amount of interest payment also huge and decrease the profit which company can get. If the company has higher debt than profit (negative profit) it makes company difficult to pay other obligations and lead it into bankruptcy.

In this study, author only focus on the internal sources of bankruptcy which is related to the financial statement.

How to detect bankruptcy?

One indicator to consider that company will faced bankruptcy is financial distress. Financial distress is the situation when the company faced difficulty in terms of financial which means the company difficult to meets its obligation. Company which faced financial distress does not faced bankruptcy yet but if the company does not take any proper strategies to handle its condition, it will lead into bankruptcy.

Company which has good financial condition has small probability to faced financial distress which lead into bankruptcy. In other word, the author concludes that the better the financial condition of the company the lower the probability to faced financial distress. We can see whether company has good or bad financial condition in its financial statement. Financial Statements represent a formal record of the financial activities of an entity.

These are written reports that quantify the financial strength, performance and liquidity of a company. Financial Statements reflect the financial effects of business transactions and events on the entity (Ammar Ali, 2010).

Financial Ratios

One of the measurements to detect financial distress is the calculation of financial ratio from the data in the financial statement of the company. Financial ratio simplifies the process of determining the health of a listed company and make reported financial information more meaningful and useful for investors. Financial ratio analysis must form the basis of all investment decisions, because without knowing the true financial position of a company you are purely speculating (Graham, 1928).

Relationship Between Financial Ratios to the Bankruptcy (Conceptual Framework)

(1)Liquidity Ratio has negative relationship to Bankruptcy

According to ASA (2010), the higher value of liquidity ratio indicates that the company ability to pay off its debt obligation is greater. Based on that theory, Author makes a conclusion that Liquidity ratio has negative relationship to bankruptcy because the higher the value of liquidity ratio, the lower the probability of the company faced bankruptcy.

(2)Leverage/ solvency ratio has positive relationship to Bankruptcy

According to ASA (2010), the higher the value of leverage ratio, the more debts than assets that company has. It means that the more value of leverage ratio of the company the higher risk that company has. Based on that theory, Author concludes that the leverage or solvency ratio has positive relationship to bankruptcy.

(3)Profitability ratio has negative relationship with Bankruptcy

According to the theory of ASA (2010), Profitability ratios measure a company's performance and provide indication of its ability to generate profits. The higher the value of profitability ratio, the higher the ability of the company to generate the profit. Based on that theory, Author concludes that profitability ratio has negative relationship to the bankruptcy because the higher the value of profitability ratio the lower the probability that company to faced bankruptcy.

(4)Valuation ratio has negative relationship with Bankruptcy

According to the ASA (2010), Valuation ratios are used as an indicator whether the current share price of the company is high or low in relation to its true value. Based on that definition, Author concludes that company which has high value of valuation ratio is become more profitable to invest. Usually, company with high share price than its competitors and industry average has a good performance. Author concludes that the higher the value

of valuation ratios the lower the probability of the company to faced bankruptcy.

Hypotheses

In conducting research about failure prediction, Author is immediately confronted with one hypothesis:

Logistic Regression Analysis can be used to predict financial distress amongst public listed companies in Indonesia Stock Exchange (IDX) accurately.

RESEARCH METHODOLOGY

Population and sample

Researcher will use all of the companies that listed in the Indonesia Stock Exchange (IDX) as population. Based on the data of companies that have been listed in the year 2009, there are 395 companies.

From the population, it will be sampled. The sample method that used in this research is using purposive sampling. Purposive sampling is the sampling method that used some criteria to select the samples (Amalia and Kristjiadi, 2003:13). The criteria that used in this research are:

1) Company has been listed in the Indonesia Stock Exchange in year 2007
2) The company has been published their financial statement in period of 2008-2013
3) The company has completed data of financial statement in the Indonesia Capital Market Directory (ICMD) and Jakarta Stock Exchange (IDX).
4) The criteria of the company that has financial distress are has negative gross profit (Hofer, 1980; and Whitaker, 1999) or faced decreasing gross profit up to 50 % (Sheikhi, 2011).
5) The company does not classify as delisting companies in the Jakarta Stock Exchange (IDX).
6) Companies that chosen as the samples classified as "0" (healthy companies) and "1" (distressed companies).

Based on those criteria, the author got 216 from 395 companies as sample and used to forecast financial distressed amongst listed companies in Jakarta Stock Exchange (IDX). Based on that sample, Author classifies the sample as healthy and distress company. Author gets 168 healthy companies and the rest (48 companies) as a distress companies.

Data and Data Gathering

This research is using secondary data as main data which means the data have been processed and published by partly entitled (Supranto, 1987). Secondary data that used in this research are getting from the data that have been processed and published by Jakarta Stock Exchange (IDX) on www.idx.com and Indonesia Capital Market Directory (ICMD). For additional knowledge and information, author also used data from text books, articles, and journals.

Methods used in data gathering are archival and online research. Archival method used to find data with content analysis from books or journals. While online research conducted to collect secondary data using the technique of collecting data with the data base. Both of the methods provide clear ideas for the author to conduct the research.

Sources of the data that used in this research are come from:

(1) Company financial statement from year 2008-2013

(2) Indonesia Capital Market Directory in period of 2008-2013

Data analysis in this research is using IBM SPSS Statistics 19 Software.

RESEARCH VARIABLES

1. **Independent Variables**

   Independent variables are variables that varied or manipulated by the researcher. An independent variable is the presumed cause, whereas the dependent variable is the presumed effect (Dependent and Independent Variables).

   There is no theoretical approach to select the variables to failure prediction. According to Laitinen and Laitinen (2000), the choice of financial ratios as variables in financial distress prediction is constructed from a series of trial and error processes as practiced by most of the researchers in previous studies. Based on that understanding and opinion, author concludes that there are no good or bad variables in predicting failures. Therefore in this study, author selects the variables based on the significance and recognition of financial ratios in earlier studies.

   In this study, author select the 11 financial ratios as seen in table below that have been used in the previous failure prediction studies by Shuk-Wern Ong (2011).

Activity Ratio	
Quick asset turnover	Sales/(cash + receivables)
Current asset turnover	Sales/current assets
Asset turnover	Sales/total assets
Days sales in receivable	Receivables/(sales/365)
Sales to fixed assets	Sales/fixed assets
Cash Flow Ratio	
Cash flow to assets	Earnings before interest, taxes, depreciation and amortization (EBITDA)/total assets
Cash flow to total debt	EBITDA/total liabilities
Liquidity Ratio	
Current Ratio	Current Assets/Current Liabilities
Leverage/Solvency Ratio	
Total liabilities to total assets (Debt Ratio)	Total liabilities/total assets
Debt to equity	Total liabilities/(total assets-total liabilities)
Profitability ratio	
Return on equity (ROE)	Net income/(total assets – total liabilities)

Source: (Shuk-Wern Ong)

2. **Dependent Variable**

The dependent variable is the response that is measured. The dependent variables in this study are using dichotomous variables. Dichotomous variables are nominal variables that only have two levels or categories. Therefore, in this study the two categories are $y = 0$ (is for healthy companies) and $y = 1$ (is for distressed companies).

3. **Control Variable**

Control variable is variable that controlled the dependent and independent variables to minimize the effect of external variables. The purpose of using control variable is to handle factors that may or may not disturb the result analysis (Pramunia, 2010). In this study, control variable that used by the author is the same industry.

Author includes listed firms from all industries, with the exception of banks, insurance companies and investment trusts, while retaining all other general financial companies in the finance sector which differentiates our study from others that commonly use

only industrial firms. Author also exclude secondary stocks of existing firms and foreign stocks and Investment or Financial Trusts as they are often voluntarily liquidated after a few years or terminated upon agreement (Christidis & Gregory, 2010).

Author used same industry to minimize bias. (Shuk-Wern Ong, A corporate failure prediction: a study of public listed companies in Malaysia, 2011)

METHOD OF ANALYSIS AND HYPOTHESIS TESTING

Descriptive statistics of independent variables

Descriptive statistics of independent variables is the method of analysis that using independent variables and used to estimate the logistic regression model in this paper. The purpose is to describe the data through mean and standard deviation. Mean shows the average of the sample, and standard deviation shows how much each measurement deviates from the mean on average (Andrew MacMillan, 2007). Financially healthy companies have higher mean of all financial ratios that used in this study except for current asset turn over. Higher mean of current asset turn over in distress companies give a signal that distress companies would probably have difficulties to meet their short-term credit obligations.

Logistic Regression Analysis Model

Method of analysis used to predict financial distress amongst public listed companies in Indonesia Stock Exchange (IDX) in this study is Logistic Regression Model which use financial ratio as an indicator. Logistic Regression models also known as LOGIT analysis are a combination of multiple regressions and discriminated analysis. Logistic Regression is the appropriate statistical technique when the dependent variable is categorical nominal or non metric variable and the independent variables are metric variables (Hair et al., 2006). Logistic regression also used to predict and explain binary (two-group) categorical variable rather than a metric-dependent measurement. In this study, the dependent variables are two-group categorical variable: distressed group and non-distressed group.

$$Logit_i = b_0 + b_1 X_1 + \cdots + b_n X_n$$

Where:

Logit i $\quad$ = Financial Distress (1 = Distress and 0 = healthy)

b0 $\quad$ = Constants

b1, b2, bn $\quad$ = coefficient of regression

X1, X2, Xn $\quad$ = independent variables

Source: (Shuk-Wern Ong)

Estimation results of logistic regression analysis

In this part, author wants to show the statistical test of individual predictors to know which independent variables are significant and not by looking the significant values of each variable. If the significant value is lower than 0.05 (alpha 5%), means that the variable can used as a significant predictor to predict corporate failure.

The second information that wants to show by the author is Wald χ^2 statistics. Wald χ^2 statistics are used to test the significance of individual coefficients in the model. Each Wald statistic is compared with a χ^2 distribution with 1 degree of freedom. Actually, Wald χ^2 statistics just support the result of significant value of each independent variables.

Author also gives the information about coefficient value of each independent variable. If the coefficient value is negative means that the higher the value the lower the probability of the company to faced failure. Otherwise if the coefficient value is positive means that the higher the value the higher the probability of the company to faced failure.

Hypothesis Testing

Hypothesis testing refers to the formal procedures used by statisticians to accept or reject statistical hypotheses (Startrek, 2015). The major purpose of hypothesis testing is to choose between two competing hypotheses about the value of a population parameter. In this study, author uses the significant value of the Hosmer table where if the significant value is higher than 0.05 (5%) means that we have to accept H0 and reject Ha. Otherwise, if the significant value of Hosmer is lower than 0.05 (5%) means we have to reject H0 and accept Ha. (Oomarudin, 2008).

Relationship between the model and financial ratios

To conduct a research, author also checks the result of Nagelkerke R^2. Nagelkerke R^2 shows how strong independent variables explain the dependent variable. In this study, Nagelkerke R-square is used to know how strong financial ratios explain the distress and healthy group. The higher the value of Nagelkerke R^2 the better the model.

Classification results of logistic regression analysis

Classification results of logistic regression analysis shows whether the samples in this study are represent the real condition or not. Which means the sample of distress companies in this study represents the distress companies in real life and the sample of healthy companies represent the healthy companies in real life. The higher the percentage the more accurate the model to predict financial distress because the higher the percentage indicates the lower error of the model. As we know a good model has a small error that make the model more accurate to predict financial distress.

DATA ANALYSIS

Descriptive statistics of independent variables

Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. (William M.K. Trochim, 2006). Descriptive analysis is important because if we presented the raw data, it would be difficult to describe what the data was showing, especially if the data was a lot.

INDEPENDENT VARIABLES	DISTRESS COMPANY		HEALTHY COMPANY	
	MEAN	SD	MEAN	SD
ACTIVITY RATIO				
1.QUICK ASSET TURNOVER	8.729	19.463	5.752	6.518
2. CURRENT ASSET TURNOVER	2.262	2.852	2.484	4.003
3. ASSET TUNOVER	1.000	1.177	1.200	1.438
4. DAYS SALES IN RECEIVABLE	75.042	158.442	58.795	78.798
5. SALES TO FIXED ASSETS	103.155	1338.330	16.809	78.798
CASH FLOW RATIO				
6. CASH FLOW TO ASSETS	-0.008	0.193	0.097	0.145
7. CASH FLOW TO TOTAL DEBT	-0.107	2.613	0.285	0.523
LIQUIDITY RATIO				
8. CURRENT RATIO	13.219	88.832	2.214	4.047
LEVERAGE/SOLVENCY RATIO				
9. DEBT RATIO	0.544	0.493	0.534	0.428
10. DEBT TO EQUITY	1.640	3.491	1.228	4.117
PROFITABILITY RATIO				
11. RETURN ON EQUITY (ROE)	-0.067	0.803	0.108	1.163

Table above reports the descriptive statistics of explanatory variables for group 0 (healthy) and group 1 (distress). It shows the general relationship and differences in the financial ratios of healthy and distress firms.

The mean of quick asset turnover for distress companies (8.729 times) is higher than the mean for healthy companies (5.752 times). These values of current asset turnover are fairly good for both healthy and distress companies. However, in terms of average, the mean of current assets turnover for healthy companies (2.484 times) is higher than the mean for distress companies (2.262 times). It indicates that healthy companies are more likely to repay their short term debts obligations using cash or near cash assets than distress companies. The mean of asset turnover for healthy companies (1.2 times) is higher than mean for distress companies (1 time). It indicates that healthy companies are using its assets more efficient than distress companies. The day's sales in receivables for distress and healthy companies are 75 and 59 days. This shows that both of healthy and distress

companies take a shorter period to collect money from their debtors. The mean of sales to fixed assets for distress and healthy companies are 203.255 and 16.809. It indicates that both of distress and healthy companies have been more effective in using the investment in fixed assets to generate revenues.

The mean of cash flow to assets for financially healthy and distress companies are 0.097 and -0.008, respectively. Apart from that, the cash flow to total debt for healthy companies is 0.285, while the ratio is -0.107 for distress companies. The negative sign for both cash flow ratios shows indicates that distress companies are facing a loss.

Current ratio shows the ability of the companies to meet their short-term credit obligation. The mean of current ratio for financially healthy and distress companies are 2.214 and 13.219 which means that the distress companies may not faced difficulties to meet their short-term credit obligation.

The mean of debt ratio for financially healthy and distress companies are 53 percent and 54 percent. The mean of debt to equity ratio for healthy and distress companies are 1.64 and 1.23. It indicates that distress companies have higher debt than healthy companies and it affects the condition of the company itself.

The mean of Return on Equity for financially healthy and distress companies are 0.108 and -0.067. It indicates that distress companies faced difficulties to use money from shareholders to generate profit. So, the higher return on equity the better because it is show that the company is using its investors' funds effectively. (Shaun, 2015)

Estimation results of logistic regression analysis

In this part, author wants to show the important information need to understand which variables that fit to the model and what variable that give positive and negative effect to the model.

Variables	Coefficient	Wald test	Sig.
Activity Ratio			
Quick asset turnover	0.029	9.980	0.002
Current asset turnover	-0.016	0.438	0.508
Asset turnover	0.050	0.315	0.574
Days sales in receivable	0.001	2.349	0.125
Sales to fixed assets	0.000	1.201	0.273
Cash flow ratio			
Cash flow to assets	-7,309	55.093	0.000
Cash flow to total debt	0.181	1.471	0.225
Solvency ratio			
Total liabilities to total assets	-0,636	4.937	0.026
Debt to equity	0.032	1.413	0.235
Liquidity ratio			
Current ratio	0.029	4.773	0.029
Profitability ratio			
Return on equity	-0.060	0.824	0.364
Constant	-0.997	26.139	0.000

As we can see on the coefficient column, current asset turnover, cash flow to assets, total liabilities to total assets and return on equity are negatively correlated with the probability of a firm going into financial distress. Means that the higher the values of these ratios the lower the probability of the company faced bankruptcy. And the rest (seven ratios) are positively correlated with the probability of a firm going into financial distress. Means that the higher the values of those ratios, the higher the probability of the company to faced bankruptcy.

Based on the coefficient result, author makes a new logistic regression equation that use in this research which is:

$$Logit = -0.997 + 0.029\,X1 - 0.016\,X2 + 0.050\,X3 + 0.001\,X4$$

$$+ 0.000\,X5 - 7.309\,X6 + 0.181\,X7 - 0.636\,X8$$

$$+ 0.032\,X9 + 0.029\,X10 - 0.060\,X11$$

Let's see the significant column in the table 4 above. Four (Quick asset turnover, cash flow to total asset, total liabilities to total assets, and current ratio) from eleven independent variables are classify as significant predictors for predicting financial distress amongst companies because they have significant value below o.o5 (alpha 5%). Means that these four variables can be useful for corporate failure prediction in Indonesia Stock Exchange (IDX).

Hypothesis Testing

Hypothesis testing refers to the formal procedures used by statisticians to accept or reject statistical hypotheses (Startrek, 2015). The major purpose of hypothesis testing is to choose between two competing hypotheses about the value of a population parameter.

Hosmer and Lemeshow Test

Chi-square	Sig.
49.441	0.000

Table above shows that the significant value is 0.000 and it is below than 0.05 (alpha 5%) which means there is significant effect or the model can be used to predict financial distress where we have to reject Null Hypothesis (H0) and accept Alternative Hypothesis (Ha). Means that the logistic regression analysis as a model in this study can be used to predict financial distress in the Indonesia Stock Exchange (IDX) accurately.

Relationship between the model and financial ratios

Nagelkerke R-square is one way to know how strong the independent variables explain the dependent variable. In this study, Nagelkerke R-square is used to know how strong financial ratios explain the distress and healthy group.

Nagelkerke R-Square

Nagelkerke R-Square
0.185

Nagelkerke R^2 (also known as coefficient of determination) of this model is 0.185 means that 18.5 percent of the variance in the dependent variable; distress and healthy groups can be explained by the financial ratios in this analysis. And the rest, 81.5 percent shows that there are other factors that can explain the dependent variable in this study.

Classification results of logistic regression analysis

In this part, author wants to show whether the prediction can show the real condition of the company or not. The higher percentage correct means the prediction can predict more accurately the model.

Classification results of logistic regression analysis

Observed		Company	Predicted	Percentage correct
		0	1	
Company	0	996	12	98.8
	1	234	54	18.8
Overall percentage				**81.0**

Table above shows the breakdown of companies and their percentages which are correctly classified as "0" (healthy companies) and "1" (distress companies) for the logistic regression analysis. Based on the result, author concludes that logistic regression analysis as a model in this study has been succeed better to predict healthy companies rather than distress companies with 98.8 percentage correct. On the other hand, logistic regression analysis can explain company which faced distress with 18.8 percent. But overall, we can say that logistic regression analysis is a good model because it is able to explain the condition of the company with 81 percent of overall percentages.

Based on high correct prediction (81 percent), author concludes that the logistic regression analysis as a model in this study can predict corporate failure prediction in Indonesia Stock Exchange (IDX) accurately. So, it can answer the problem statement in the chapter 1 (Is the logistic regression

analysis can predict corporate failure in Indonesia Stock Exchange (IDX) accurately?)

CONCLUSION, LIMITATION, AND SUGGESTION

Conlusion

This study reveals that not all financial ratios can be used as significant predictors to predict financial distress amongst companies. However, there four financial ratios that give significant results and can be used to predict financial distress are:

a. Quick Asset Turnover (QAT) gives positive effect which means the higher the value the higher the probability of the company to faced financial distress.
b. Cash Flow to assets (CFA) gives negative effect which means the higher the value the lower probability of the company to faced financial distress.
c. Total Liabilities Total Asset (TLTA) gives negative effect which means the higher the value the lower probability of the company to faced financial distress.
d. Current Ratio (CR) gives positive effect which means the higher the value the higher the probability of the company to faced financial distress.

The conclusion of this research is derived from the hypothesis testing to answer the problem statement:

The hypothesis of Ha which states that logistic regression analysis can be used to predict corporate failure in Indonesia Stock Exchange (IDX) accurately is supported.

The classification results show that logistic regression analysis is a more reliable technique for predict financially healthy companies than distress companies. But, overall classification results of 81 percent prove that the model can describe the financial condition of the companies.

Limitation

As limitations, author did not select the sample with closest asset size and also author only used one model which is Logistic Regression Model in this study. Both of these factors may affect the results.

Suggestion

For further research, author suggests that the researches can add closest asset size as a control variable in selecting the sample to minimize bias in the results. Author also suggests that the researchers can use more than one model to predict financial distress to get better result.

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