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Predicting the Financial Distress of Public Companies Listed at the Indonesian Stock Exchange

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Abstract:

The aim of this research is to analyze the influence of various macroeconomic variables and financial performance collectively or partially against the probability of the financial distress of public companies listed at the Indonesian Stock Exchange three, two and year before it actually happens. This research employs the method of survey of 355 public companies listed at Indonesian Stock Exchange that experienced financial distress and financial health during the period 2004-2014. The sample collecting technique used was the purposive sampling method. The research data were analyzed using the logistic regression. The result of research shows that variables of the most to the least partially significant influence on the probability of financial distress one year before it happening are respectively rupiah exchange rate, rupiah exchange rate, cash ratio, return on investment, and growth earning per shares, two years before it happening are respectively rupiah exchange rate, current ratio, inventory turnover, gross profit margin, price earning ratio, growth sales and growth earning per shares, and three years before it happening are respectively asset turn over, gross profit margin.

Keywords: *Macroeconomic variables, financial performance, financial distress*

1. Introduction

1.1. Background

Stock market as part of a national economic system there providing two major functions for public that each have different interest namely function as economic and financial worth. In economic functions, then stock markets can unite those who need long-term funds, namely the emitter and the investor requiring a reliable and prospective investment facilities. The finance function of the stock market offers the possibility and opportunity to obtain a profit as owners of the funds according to the characteristics of the chosen investment.

In connecting with the function of stock market mentioned above, the primary attractive to the party having exceed funds (investors) to invest in the capital market is to obtain greater profits than investing on other side, to the company side or emitter is to obtain additional fund needs at a lower relatively cost compared to other funding sources. It indicated that the higher profits that may be earned by investors by investment in Indonesia Stock Exchange, the higher attractiveness of investment in the securities traded on the Indonesia Stock Exchange and vice versa.

It is ideally the investors imagined as high as possible profits in the investments put into the Indonesia Stock Exchange, but there are still important things to keep into consideration the risk may rise from the investments. One of risks that will be faced by the investors is shown by the financial distress the company's failure to pay its liabilities due to time characterized by a negative operating profit for three consecutive years or more (Hill, Perry, and Andes, 1996).

Since the economic crisis hitting Indonesia ten years ago, the Indonesian Capital Market conditions still show a bad situation, shown by the tendency of increasing the percentage of companies de-listing in the Indonesia Stock Exchange. The percentage of companies delisted from 1997 to 2005, reaching an average of 29.8 percent annually (Bapepam Annual Report, 2006). One of the factors cause the delisting companies that have been listed on the Indonesia Stock Exchange is on financial difficulties experienced by the companies that have been listed in Indonesia Stock Exchange since 1997 to 2006, perhaps un-separateable from the effect of Indonesia's macroeconomic conditions not conducive to the business hand. There are numbers of macroeconomic indicators commonly used, predicted contributed to affect the company condition, showing a fluctuated rate such as gross domestic product, inflation, interest rates and the rupiah exchange rate.

A number of empirical studies in developed countries have used macro-economic variables to predict the company's financial distress. Their results showed that the effect of macroeconomic variables significant cause to bankruptcy the company (Hill, Perry, and Andes, 1996; Tirapat and Nittayagasewatt, 1999; Hol, 2006). This is still supplemented by the research survey by Dun and Bradstreet in Brigham and Gapenski (1997) showing that the company experienced a bankruptcy caused by the financial factor of 47.3 percent, and 37.1 percent of economic factors, and other factors of 15.6 percent.

In addition to macroeconomic variables, the financial performance variable is also an important factor that led to financial distress and bankruptcy of company. It means, the company's financial performance shall be a valuable reflection effective or not the management of the company. Helfret (1996) suggested that an increased company's financial performance depending on the proper management of the three principal areas with decision that is common to all companies, they are: (1) the selection and implementation of investment based on economic analysis and management, (2) management of the company's operations profitably employing the resources available that required effectively, (3) conduct a careful financing, by a *trade-off* between the expected benefits and risks arising from the use of external credit.

One of method to assess and determine the development of the company's financial performance is by analyzing the company's financial statements, so the items existed in the financial statements should be the representation of a resource or assets of any entity, claims to resources, and the influence of the transactions and other events as well as occurrences that lead to changes in resources or claims against the resources. Tandelilin (2001) revealed that the financial statements are an accounting information indicating how much the wealth of company, in how level rate income derived by the company whatever economic transactions that has been done by the company that could affect the richness and return on the company. A general method used in analyzing financial statements is to use financial ratios. The financial ratio analysis includes the study of the relationship between the financial statements at a given time and a tendency between the correlations in a certain period. The result of the financial ratios assessment derived from a set of financial statements can determine the economic strength of a company. The statement implies that the financial ratios that can describe the inter-elements correlations in the financial statements. Each of these financial ratios have meaning each in significance of analyzing the conditions and the financial position of the company.

A number of empirical studies in some developed countries using financial information to predict financial distress has been done by previous researchers (Giacimano and Mieke, 1993; Neophytou, Charitou and Charamlambous, 2000; Plate and Plate, 2002; Galvao, Bacerra and Abou-improvised, 2004; Manussi, Soopramainen and Worthington, 2007). According to a number of empirical studies mentioned above indicated that the effect of the financial performance is significant in predicting the company's financial difficulties. A symptoms of financial difficulties of the company could be detected three years prior before it happened.

Based on the above description indicated that the company's financial difficulties can be anticipated, due to financial difficulties cannot occur suddenly. Therefore, a similar study to produce a model in detecting early symptoms of financial difficulties the company is required to be done in Indonesia. The existence of such model is expectable to help emitter, Bapepam, investors, creditors and stakeholders concerned in the performance of emitters, so that if found any symptoms of financial distress and bankruptcy of the company can be anticipated immediately in order to avoid the possibility of worsening financial condition of the emitter.

The investors and management of company highly expected that the company can go operating (*going concern*) satisfactory and profitable. However, as mentioned in the previously, that a number of companies that have been listed in Indonesia Stock Exchange shall be facing some obstacles and problems in running the operations. Among the problems faced by companies that have been listed in Indonesia Stock Exchange is the financial difficulties as shown in failure of the company to pay its liabilities due to time, is characterized by a negative operating profit achievement in respectively three years or more.

In briefly, the financial distress and bankruptcy of companies affected by macroeconomic variables and financial performance. The failure of the management of the company to predict and adjust the company macroeconomic variables ultimately hinder the company in achieving its goals. Decisions and inappropriate policies in the past and the failure of management to do something as required on timely cause unsatisfactory financial performance. It is shown by the sale is not optimally done, managing the debts inadequate, the high cost structure, the level of investment in fixed assets and inventories that exceeding the limit, shortage working capital, and the imbalance in the structure of capital, as in turn inhibits the company in profit maximum.

1.2. The Formulation of Problem

According to the above mentioned, the main problems to be viewed point in this study is as follows: " What is the influence of macroeconomic variables such the rate of inflation, interest rates and corporate financial performance comprising liquidity ratios, activity ratios, leverage ratios, profitability ratio, and the ratio of dominant market in predicting the probability of financial distress in the company that has been listed in Indonesia Stock Exchange?"

2. Framework of Idea and Hypothesis

2.1. Framework of Point View

The management of companies, investors and creditors expected that the company can go operating (*going concern*) well so that it can be profitable as expected, thus able to meet its liabilities in a timely manner and provide a satisfactory *return* to investors. In fact, there are a few companies in running operations cannot run going as expected. In certain situations, the company may be dealt with various difficulties such as: financial distress in light seen, but if it cannot be resolved promptly and appropriately, then the financial difficulties will develop into more serious trouble down to bankruptcy.

Financial distress is a widely concept consisting of several situations which by a company facing financial difficulties. Such difficulty seemly commenced with liquidity problems viewed as a rather lightly financial difficulty, up to the bankruptcy course as the most severe financial difficulties.

According to Brigham and Gapenski (1997) that the form of *financial distress* that may be experienced by the company can be one of the following five types: (1) *Economic Failure* is a condition which by the sale of the company is not able to cover all costs including capital costs. Companies that fail economically still be able to continue its business operations as long as the creditor is willing to

supply funds, and the shareholders are willing to accept a low return; (2) *Business failure* is a company that stopped its operations and impose losses on creditors. Business failures can be done with no real evidence that the company has completely failed; (3) *Technical insolvency* is a condition by which the company is unable to meet the liabilities immediately due to time. This condition may be temporary, but it can also be continued if it is found that business failure is an economic failure; (4) *Insolvency in bankruptcy* is a condition in which the book value of total liabilities exceed the market value of the assets. Such conditions would lead to the liquidation of the business; (5) *Legal bankruptcy* is an adjudication by law that a company is declared bankrupt. Gitman (2003) noticed that there are two forms of *financial distress* that may be faced by the company, namely: (1) *Technical insolvency*, occurs when a company is unable to meet its liabilities that due to, these conditions can be healed still and therefore only temporary; (2) *Insolvency in bankruptcy* may occur when the value of total debt has exceeded the value of the total assets of the company, or the company has negative equity value. Whereas Galvao, Bacerra and Abou-Seada (2004) pointed out that financial distress is a situation where the company have no ability to meet the repayment in scheduled liabilities to creditors on time. Whereas Hill, Perry, and Andes (1996) pointed out more firmly that the financial distress may occur if the company experienced a negative return in consecutive three years or more. Plat and Plat (2002) stated that financial distress is a decreased in stages financial down-turn experienced by companies that occurred prior to bankruptcy or liquidation. This condition is generally characterized by a delay of delivery, product quality decreases, and delay payment of bills from the bank.

Based on the above point, it can be concluded that financial distress is a situation where a company suffers a loss as indicated in a negative operating profit of at least three years or insufficient cash flow to meet its liabilities due to time.

2.2. Effect of Macroeconomic Variables on Corporate Financial Difficulties

Macro-economic analysis is one of the important aspects that need to analyze by the investors in order to determine the investment decisions. Macro-economic analysis need to be done because of tendency of correlations between what happens on the macro economic environment with conditions in the capital markets. This theory is supported by Tandelilin (2001) stated that the prospectus company is highly depending on the course of the economy as a whole, so in assessing a company's investors must also consider the macro-economic variables that affect the company's ability to generate profits. Bodie, Kane and Marcus (2006) revealed that in analyzing the fundamentals of a company, should consider the business environment in which it operates due to the prospect of a company associated with macroeconomic conditions. Hence the importance of the influence of the macroeconomic environment on the performance of the company, the first step is to predict the financial performance of the companies that has been registered, in the case to determine the status of the overall economy.

The macroeconomic variables that has been empirically proved influencing to rising investment in some countries such as the gross domestic product, unemployment rate, inflation, interest rates, budget deficits, and sentiment (Bodie, Kane and Marcus, 2006). Harianto and Sudomo (1998) revealed that the macro-economic variables that affect the profitability of the company are the gross domestic product, inflation, interest rate, exchange rate, budget deficit, private investment, and the balance of trade and payments. While Tandelilin (2001) stated that the macroeconomic variables that affecting to the performance of the capital market are the gross domestic product, growth rate of inflation, interest rates, and exchange rates.

From the above point indicated that the ability of management, investors, and creditors in knowing and predicting macroeconomic conditions in the future will be very useful in making profitable investment decisions. Therefore, an investor must pay attention to macro-economic indicators that can assist in knowing and predicting macro-economic conditions, so the investors, the management may anticipate the possibility of the occurrence of financial distress and bankruptcy of the company.

2.3. Effect of Financial Performance Against Corporate Financial Distress

Information is an important thing in the development of the capital market. A completed information, relevant, accurate and timely is highly required by investors in the capital market as an analytical tool in making an investment decision. Foster (1986) stated that the type of company information published to public, namely: profits, management targets for the coming period, dividend announcements, marketing, production and sales, the company's financial statements, and so forth.

Financial information is a data and facts, observations or perceptions processed in such way so to meet the users' needs. Financial information is one of the potential sources to determine the securities investment in the stock markets. A Properly information if the information can be used as a tool to assist in making decisions. So, the financial information must have the characteristics that the information is relevant and reliable.

A reliable information is objective, its validity testable and presented correctly. A relevant information for decision-making must be: (1) Helpable to the user to increase the possibility of precisely forecasting about the past occurrence or be happening; (2) to assist the user in confirming or correcting previous expectations; and (3) It can provide the right time for taking decision before the information losing its capacity to influence decisions.

The financial information used as tool in communicate to other related with the company are originally from financial statements as the final outcome of accounting process. The information of financial statement has a comparative advantage compared to other competitive sources of information because: (1) it can directly be attributed to *the variable of interest*; (2) it is a more reliable source of information that has been audited by independent auditors; (3) it is a lower cost rate sources of information compared to other information source; (4) it is sources information precisely in time (Foster, 1986).

Hanafi (2004) revealed that there are three basic financial statements resulted from the activities of a company they are: (1) The balance sheet providing an overview of the financial condition of a company at a particular time (*snapshot*) covering the company's assets and claims on those assets (including debt and own equity); (2) Income Statement, providing information about the profit or

loss in a given period. The income statement presents some basic elements they are: (a) operating income, (b) operating expenses; and (c) profit or loss; (3) Cash Flow Statements, which provide information about incoming and outgoing cash flow of the company for a certain period. The cash flow statement is required as in some situations; the income statement is not sufficient to describe the company's financial condition.

The objective of financial statements made is to provide information relating to the financial position, performance and changes in financial position that will benefit a large number of users in making economic decisions. Users of financial information wants to assess what has been done over the management of the resources entrusted to him, so people as interested in the company can make a decision.

2.4. Financial Statement Analysis and Financial Ratios

Financial statement analysis is a study on the items that are interconnected in the financial statements, both structural relationships or its trends. Analysis of the financial statement items is often done by the user to determine the development of the financial performance of a company or industry and the prospectus of the company in the future.

In broadly, there are several techniques and tools of financial statement analysis, they are: (1) *Cross-sectional techniques*, that comparing the performance of the company with other companies in the same industry, consisting of: (a) *common-size statements* that comparing the proportion of each accounts available in the financial statements of a company with the data of financial statement other companies with similar or industry averages; (b) *financial ratio analysis* that comparing a company's financial ratios with financial ratios of other companies in similar or industry ratio. (2) *Time series techniques*, is the evaluation of the company's financial position trend over time, consists of: (a) *trend statements* are used to compare the data of the financial statements for a two periods or more that it can be seen the rise and decline of certain information in the report finance; (b) *common-size statements* are used to compare the percentage of a component in the financial statements for a two periods or more in order to know the changes in the composition structure available in the financial statements; (d) *Financial ratio analysis* are used to compare the financial ratios for a two periods or more that it can be seen the policies associated with financial and make projections about the financial ratios in the future.

According to Wild, Subramayam, and Halsey (2005) that in some financial statement analysis tools mentioned above that ratio analysis is as one of the widely used analytical tool. Therefore, the financial ratio analysis can reveal the important correlations and as the basis for comparison in finding conditions the trends that cannot be detected by other financial analysis tools.

Wild, Subramayam, and Halsey (2005) classified the financial ratios into five categories, they are: (1) the liquidity ratio, namely the ratios used to measure a company's ability to meet its short-term liabilities; (2) the ratio of asset management, namely the ratios that measure how effectively the company manages its assets; (3) the ratio of debt management, namely the ratios that measure the ability of the company meet its long-term liabilities; (4) the profitability ratio, the ratios that measure the ability of the company making a profit on the level of sales, assets, and certain share capital; (5) the ratio of the market value, namely the ratios that measure ratios assessing the company's stock market price, relative to its book value.

2.5. Hypothesis

Based on the points and framework idea described above, it is to propose the hypothesis is as follows:

1. There is the influence of macroeconomic variables consisting of variable gross domestic product growth, the exchange rate, inflation rate, interest rate, and the company's financial performance of liquidity ratios, activity ratios, leverage ratios, profitability ratios, the ratio of the market and the ratio growth are jointly significant in predicting the probability of financial difficulties since 3, 2 and 1 year prior taking place to the companies that have been listed in Indonesia Stock Exchange.
2. There is the influence of macroeconomic variables which consist of gross domestic product growth, the exchange rate, inflation, interest rates, and financial performance of liquidity ratios, leverage ratios, profitability ratios, market ratio and the ratio of the partial significant growth in predicting the probability of financial distress since 3, 2, 1 year before it happens to companies that have been listed in Indonesia Stock Exchange.

3. The Methods of Research

3.1. The Types of Research

The objective of this study is to identify the influence of a number macroeconomic variables such as: real growth in gross domestic product, changes in the exchange rate over the US dollar, inflation rate, interest rates and financial performance of companies comprising of the liquidity ratios, activity ratios, leverage ratios, profitability ratios, market ratio and the ratio of growth in jointly and partially to predict the probability of financial distress at the company has already listed on the Indonesia Stock Exchange, therefore, the type of study is a description-causal research.

3.2. Operational Variables

This study is to analyze a number macroeconomic variables and financial performance of public companies as independent variables for the period of 1, 2 and 3 years before the public companies experiencing financial distress while the condition of public companies is classified to two categories of a healthy category and the financial distress that would be predicted as the dependent variable.

1. Dependent Variable

The dependent variables used in this study are the condition of the company with category conditions as the following:

- 0 = healthy company is a company that got not any negative earnings three consecutive years or more.
- 1 = a distress financial companies that are companies getting a negative net profit for three consecutive years or more.

2. Independent Variable

The independent variables used in this study are a number of macroeconomic variables and financial performance to scale the ratio namely:

a. Macroeconomic variables used in this study consists of:

1. Exchange Rate (X_2), is the average change in the exchange rate against the US dollar during one year for which the unit size is a percentage.
2. The Interest Rate (X_4), is 1-month SBI rate during one year for which the unit size is a percentage.

b. Financial performance variables used in this study consists of:

1. The liquidity ratio, measuring the ability of public company to meet its short-term liabilities comprising of:
 - *Cash Ratio* (X_7), is the ratio of cash to current liabilities which the unit of measure is the multiple.
2. The activity ratio, that measuring how effectively a public company uses its resources consisting of:
 - *Inventory Turnover* (X_8), is the ratio between the basic price of sales to the inventory rate of its unit size is the multiple.
 - *Total Assets Turnover* (X_{10}), is the ratio of sales to total assets of the unit size is the multiple.
3. The leverage ratio, that measuring the extent to which public company financed by debt which consists of:
 - *Debt Ratio* (X_{11}), is the ratio of total debt to total assets of the unit of measure is the percentage.
4. Profitability ratios, measuring the effectiveness of management indicated by the profit generated on the sale of public companies and investments consist of:
 - *Gross Profit Margin* (X_{12}), is the ratio between (sales –basic price of sales) with the sale of the unit size is a percentage.
 - *Return on Investment* (X_{14}), is the ratio of net income to total investment unit of measure is the percentage.
5. Market Ratio, measuring the ability of management to create a public company's market value exceeding the cost of investment expenditure consists of:
 - *Price Earning Ratio* (X_{15}), is the ratio between the market price per share to the earnings per share is the percentage of the unit size.
 - *Dividend yield* is (X_{16}), is the ratio of dividend per share to the market price per share that unit of measure is the percentage.
6. Growth ratio, measuring the ability of a public company to maintain its economic position in the economic and industrial growth consisting of:
 - *Growth per Share* (X_{18}), the percentage change of the result per share period t to period t-1 of the unit size is a percentage.

3.3. The Population and Sample Research

The population in this study are all public companies excepted to the companies included into the banking sector refers with the classification (JASICA) that has been listed on the Indonesia Stock Exchange until the 2010 amount of 355 companies. By the population sample with *purposive sampling* technique, based on several stages and specific criteria. The length period of object to study at least 10 years in operation since 2004 up to 2014, whereas the model building phase in prediction separated between sample analysis and validation samples. Hair et al (2006) stated that there is no definite reference in dividing the sample into the sample group analysis and validation of the sample group, but the researchers suggested a 60-40 or 75-25 division, in this study using a 60-40 division. For the criteria in selecting the sample and analysis of the validation samples are as follows: (1) financial performance data is available for three years before the company experienced financial distress and healthy; (2) The Company in elected should have the end of the fiscal year in December. The number of observations made by *pooling the data* that is an incorporation of observation *cross section* and *time series*.

Based on the criteria mentioned above, it was obtained 255 companies as a sample consisting of 137 companies in the sample analysis such as 42 companies experienced financial distress, and 95 healthy companies and 91 companies in details, for the validation sample with 19 companies that experiencing financial distress, and 72 healthy company, according to the 60-40 division in details.

3.4. Types and Sources of Data

The data used in this research is secondary data, the data that has been collected by the agency collecting the data and published to the public. Secondary data in this study is the company's financial statements that have been listed on the Indonesia Stock Exchange since 2004 up to 2014 and reports of macroeconomic conditions since 2004 up to 2014. The financial statements of the company obtained from the Indonesia Stock Exchange, that is then analyzed with financial ratios to obtain the financial performance of the companies and its macroeconomic conditions obtained from the annual report of Bank Indonesia.

3.5. Model of Analysis

The analysis model is a *logistic regression*. In the data processing, used a *Software Program Statistical Package for Social Science (SPSS) version 15.0*.

The prediction model is built based on *regression logistic* models with the following equation:

$$p_i = E(Y_i = 1 | X_i) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 \dots (1)$$

$$p_i = E(Y_i = 1 | X_i) = \frac{1}{1 + e^{-(\alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7)}} \quad (2)$$

Atau

$$p_i = \frac{1}{1 + e^{-z_i}} ; \text{ di mana:}$$

$$Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 \dots\dots(3)$$

$$1 - p_i = \frac{1}{1 + e^{-z_i}} = \frac{e^{-z_i}}{1 + e^{-z_i}} \dots\dots\dots(4)$$

$$\frac{p_i}{1 - p_i} = \frac{\frac{1}{1 + e^{-z_i}}}{\frac{e^{-z_i}}{1 + e^{-z_i}}} = \frac{1}{e^{-z_i}} = e^z = e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7)} \quad (5)$$

Bila odd ini dilogkan maka:

$$L_i = \ln\left(\frac{1}{1 - p_i}\right) = Z_i = \frac{1}{1 + e^{-(\alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7)}} \quad (6)$$

Logistic regression model validation test using holdout method, and its parameter estimates based on pooled data period of 2001 to 2010.

4. The Results and Discussion

Based on the analytical model used, following processing done by the *Software Statistical for Social Science (SPSS) version 15.0*, for 1, 2, and 3 years prior to experiencing financial distress are shown in Table 1.

Variable	One year before it happening			One year before it happening			One year before it happening		
	Coeff.	Prob.	Exp(B)	Coeff.	Prob.	Exp(B)	Coeff.	Prob.	Exp(B)
C									
NTR	0.0800	0.0123	1,0833	-0.1445	0.0069	0.8655	0.0106	0.3702	1,0106
BNG	-0,2443	0,3216	0,7832	-0,4353	0,9217	0,6471	0,1242	0,1744	1,1322
CRT	0,6335	0,0394	1,8842	-0,4708	0,1808	0,6245	-0,0696	0,7524	0,9328
ITR	-0,0780	0,8339	0,9249	0,0089	0,0209	1,0090	0,1241	0,4735	1,1322
ATO	-0,9831	0,1402	0,3741	-1,3110	0,0063	0,2695	-1,0783	0,0095	0,3402
DBR	2,5690	0,049	13,053	0,2552	0,8267	1,2907	0,2387	0,7605	1,2696
GPM	-0,0049	0,8310	0,9951	-0,0384	0,3124	0,9623	-0,0589	0,0076	0,9428
ROI	-0,1443	0,0216	0,8656	-0,1708	0,0013	0,8430	-0,0755	0,0641	0,9273
PER	-0,1194	0,0181	0,8875	-0,0426	0,0485	0,9583	0,0001	0,9835	1,0001
PRL	0,0019	0,1084	1,0019	-0,0023	0,0368	0,9977	-0,0002	0,6172	0,9998
	McFadden R-squared		0,6168	McFadden R-squared		0,7364	McFadden R-squared		0,3221
	LR statistic		104,158	LR statistic		124,351	LR statistic		54,387
	Prob(LR statistic)		0,0000	Prob(LR statistic)		0,0000	Prob(LR statistic)		0,0000
	Obs with Dep=0		95	Obs with Dep=0		95	Obs with Dep=0		95
	Obs with Dep=1		42	Obs with Dep=1		42	Obs with Dep=1		42

Table 1: Variables in the Equation

Referred to Table 1 above, indicated that since 3, 2 and 1 year prior to the got influence of the real growth in gross domestic product, the changes in the exchange rate against the US dollar, inflation, interest rates, liquidity ratios, activity ratios, leverage ratios, profitability the ratio, the market ratio and the growth ratio are jointly significant to the probability of a public company's financial distress that have been listed in Indonesia Stock Exchange for one year before taking place on $\alpha = 10$ percent.

Based on Table 1 above, shows that if compared to healthy companies, for one year before public companies experiencing financial distress partially: the changes in rupiah exchange rate against the US dollar has a negative and significant effect on the probability of a public company's financial distress at $\alpha = 10$ percent, with an increase in the exchange rate of 1 percent over the US dollar, will reduce the probability of companies experiencing financial distress 1.0833 times higher; the change of *current ratio* has a positive effect on the probability of financial distress and significant public company at $\alpha = 10$ percent; the change of *Inventory turnover* have a negative effect on the probability of financial distress of public company and significant at $\alpha = 10$ percent; the changes in *total asset turnover* have a negative effect on the probability of financial distress of the public company and significant at $\alpha = 10$ percent; the changes in *debt ratio* have a positive effect on the probability of financial distress of public company and significant at $\alpha = 10$ percent

with increased in earnings per share 1 time shall reduce the probability of companies experiencing the financial distress 13,0352 times higher; the changes in *return on investment* have a negative effect on the probability of financial distress of public company and significant at $\alpha = 10$ percent, with an increase in *return on investment* of 1 percent would reduce the probability of companies experiencing financial distress of 0.8656 times higher; the change of *price earning ratio* have a negative impact on the probability of financial distress of public companies and significant at $\alpha = 10$ percent with increasing *return on investment* 1 percent would reduce the probability of companies experiencing financial distress of 0.8875 times higher: the changes in sales growth have a positive effect on the probability of a public company's financial distress and not significant at $\alpha = 10$ percent; the growth in earnings per share has a positive effect on the probability of financial distress and significant public company at $\alpha = 10$ percent with increase in earnings per share 1 time would reduce the probability of companies experiencing financial distress of 1.0019 times higher.

Based on Table 1 above, demonstrated that if compared with healthy companies, for a two years before public companies experiencing financial distress partially; the changes in the exchange rate over the US dollar had a negative effect on the probability of financial distress of public company and significant at $\alpha = 10$ percent, with an increase in the exchange rate of rupiah 1 percent over the US dollar, will reduce the probability of public companies experiencing financial distress 0.8655 times higher; the change in *current ratio* have a positive effect on the probability of public company's financial distress and significant at $\alpha = 10$ percent, with an increase in *current ratio* of 1 time will increase the probability of public companies experiencing the financial distress 1.1323 times higher; the change in *inventory turnover* have a positive effect on the probability of financial distress of public company and significant at $\alpha = 10$ percent, with an increase in *inventory turnover* 1 time will increase the probability of public companies experiencing the financial distress, 1.0089 times higher; the changes in the *total asset turnover* have a negative effect on the probability of financial distress of public company and significant at $\alpha = 10$ percent, with an increase in *total assets turnover* 1 time will reduce the probability of public companies experiencing the financial distress of 0.2695 times higher; the changes in *debt ratio* have a negative effect on the probability of financial distress of public company and significant at $\alpha = 10$ percent; the change in *return on investment* have a negative effect on the probability of financial distress of public company and significant at $\alpha = 10$ percent, with an increase in *return on investment* of 1 percent would reduce the probability of public companies experiencing the financial difficulties 0.8429 times higher; the changes in *price earnings ratio* have a negative effect on the probability of a public company's financial distress and significant at $\alpha = 10$ percent, with an increase in *price earnings ratio* of 1 percent would reduce the probability of public companies experiencing the financial difficulties 0.9583 times higher; the changes in earnings per share growth has a positive effect on the probability of financial distress and significant in public company at $\alpha = 10$ percent with the increase in *price earnings ratio* of 1 percent would reduce the probability of public companies experiencing the financial difficulties 0.9975 times higher.

Based on Table 1 above, demonstrated that if compared to the healthy companies, for three years before the public companies experiencing the financial distress partially: the changes of real growth in gross domestic product have a negative effect on the probability of financial distress of public company and significant at $\alpha = 10$ percent, with real growth of gross domestic product in 1 percent will reduce the probability of public companies experiencing the financial difficulties 0.045 times higher; the changes in inflation has a positive effect on the probability of financial distress and significant in public company at $\alpha = 10$ percent, with a 1 percent increase in inflation would raise the probability of a public company in experiencing the financial difficulties 1,999 times higher; the changes in interest rates have a positive effect on the probability of financial distress and significant in public company at $\alpha = 10$ percent; the changes in *total asset turnover* have a negative effect on the probability of financial distress and significant in public company at $\alpha = 10$ percent, with an increase in *total assets turnover* of 1 time would reduce the probability of public companies in experiencing financial difficulties 0:34 times higher; *gross profit margin* has a negative effect on the probability of financial distress and significant in public company at $\alpha = 10$ percent, with an increase in *gross profit margin* of 1 percent would reduce the probability of public companies in experiencing financial difficulties 0.943 times higher; the changes in *net profit margin* has a positive effect on the probability of financial distress and significant in public company at $\alpha = 10$ percent of the increase in *net profit margin* of 1 percent would reduce the probability of public companies in experiencing financial difficulties 1.004 times higher; the changes in *return on investment* has a negative effect on the probability of financial distress and significant in public company at $\alpha = 10$ percent, with an increase in *return on investment* of 1 percent would reduce the probability of public companies in experiencing financial difficulties 0.927 times higher; the changes in sales growth has a negative effect on the probability of financial distress and significant in public company at $\alpha = 10$ percent, the changes in earnings per share growth has a positive effect on the probability of financial distress of public companies and not significant at $\alpha = 10$ percent.

The magnitude of the varieties for one, two and three years before the public company experienced financial difficulties can be described by a number of macroeconomic variables consisting of gross domestic product growth, the change in exchange rate over the US dollar, inflation rate, and interest rates and the financial performance of public enterprises comprising of the liquidity ratios, activity ratios, leverage ratios, probability ratio, the ratio of the market, and the ratio of growth are 61.67 percent, 73.63 percent, and 32.21 per cent respectively, while the remaining consecutive of 38.23 percent, 26.37 percent, and 67.79 percent is detailed by other variables outside the model.

The results of classification predictions for 1, 2 and 3 years before the company experienced the financial difficulties are shown in Table 2.

Observed	Predicted		Percentage Correct
	Health	Financial Distress	
1 Year before experiencing financial distress			
Health	91	4	95.79
Financial Distress	4	38	90.48
Overall Percentage			94.16
2 years before experiencing Financial Distress			
Health	91	4	95.79
Financial Distress	6	36	85.71
Overall Percentage			92.70
3 Years before experiencing Financial Distress			
Health	88	7	94.44
Financial Distress	19	23	47.37
Overall Percentage			84.62
The Cut Value is 50			

Table 2: Classification Table

Based on Table 2 above showed that total predicted accuracy rate for 1.2 and 3 years before experiencing the financial distress are respectively 94.5025%, 83.8626% and 78.08219%, it indicated that the closer its time for the companies experiencing the financial distress, the accurately rate in predicted going higher. Furthermore, as the power of prediction, in fact the three predicted models at its validation model has the accuracy rate for 1, 2 and 3 years before experiencing the financial difficulties respectively 59.5%, 59.5% and 53.2% are shown in Table 3 as follow:

Observed	Predicted		Percentage Correct
	Health	Financial Distress	
1 Year before experiencing financial distress			
Health	70	4	92.22
Financial Distress	2	15	78.95
Overall Percentage			93.41
2 years before experiencing Financial Distress			
Health	69	2	95.83
Financial Distress	3	17	89.47
Overall Percentage			94.51
3 Years before experiencing Financial Distress			
Health	68	10	94.44
Financial Distress	4	9	47.37
Overall Percentage			84.62
The Cut Value is 50			

Table 3: Classification Table

Due to the rate of accuracy in the model is more than 50%, so the above model can be used to predict the company's financial distress (Santoso, 2002).

5. Conclusions and Suggestions

5.1. Conclusions

Based on the analysis and discussion showed that the macroeconomic variables and financial performance as used to predict the financial distress indicated that for 1 year before experiencing the financial distress such the exchange rate, the cash ratio, debt ratio, return on investment, the price earnings ratio and growth in earnings per shares are significantly influencing to predict the financial distress. For 2 years before experiencing the financial distress the variables of exchange rate, current ratio, inventory turnover, asset turnover, return on investment, the price earnings ratio, earnings per share growth are significantly to predict the financial distress. For 3 years before experiencing the financial distress the variables of gross domestic product, inflation rate, asset turnover, gross profit margin, net profit margin, return on investment are significantly to predict the financial distress. The accurate rate of model for 1, 2 and 3 years before the companies experienced the financial distress are respectively 94.16 percent, 92.70 percent, and 84.62 percent.

5.2. Suggestions

To the companies that have been listed in Indonesia Stock Exchange for 1 year before experiencing the financial distress should pay more attention to the ratio of the exchange rate, cash ratio, debt ratio, return on investment, the price earnings ratio and growth in earnings per share. For the 2 years before experiencing the financial distress should pay more attention to the exchange rate, current

ratio, inventory turnover, asset turnover, return on investment, the price earnings ratio, growth in earnings per share. For 3 years before experiencing the financial distress it should pay more attention to the gross domestic product, inflation, asset turnover, gross profit margin, net profit margin, return on investment. In considering to the above-mentioned variables, the management of company can make some decisions and policies so that companies get not over financial distress in heaven.

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