

The Effect of Fundamental Variables and Macro Variables on the Probability of Companies to Suffer Financial Distress A Study on Textile Companies Registered in BEI

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Abstract

The objectives of this research are to know and to explain the effects of fundamental variables and macro variables on *financial distress* probability and understand variable contribution sequence. Based on eight variables used, the fundamental variables are *Working Capital To Total Asset (WC/TA)*, *Sales To Total Assets (S/TA)*, *Return On Equity (ROA)*, *Debt Ratio (DR)*, *Shareholder Equity To Total Asset (SETA)*, while macro variables are Exchange Rate Sensitivity, Inflation Sensitivity and Interest Sensitivity. The population is 15 *public* textile companies listed in Bursa Efek Indonesia (BEI) and did not have *delisting* during research period. The sampling technique used is census sampling technique. The data source is financial statement published by BEI in 2010-2012. The analysis model used is logistic regression and sensitivity analysis. The research type is explanatory research. Research finding shows that *Working Capital To Total Asset (WC/TA)*, *Total Debt To Total Asset (DR)*, *Shareholder Equity To Total asset (SETA)*, and Inflation Sensitivity give significant effect on *financial distress* of companies and the highest effect is given by *Debt Ratio (DR)* and Inflation Sensitivity.

Keywords : *Financial distress*, Logistic Analysis Regression, Sensitivity Analysis

1. Introduction

1.1 Background of Problem

Monetary crisis that happened in Indonesia a few years ago gives significant effect to all aspects of life, mostly economy. The condition causes really worrying economy. Crisis in mid of July 1997 and current crisis such as Europe debt crisis and low economy of U.S lead many companies have labile financial condition. For example, economic condition is poor because many companies get bankrupt, bank liquidity and unemployment. Moreover, today global world comes to free trade era, known as ACFTA (*ASEAN China Free Trade Agreement*), it gives opportunities to Chinese producers to sell their product in any countries without complicated process. It definitely gives effect to producers, mainly textile producers. Import and export growth in the future will be significant. In Indonesia, ACFTA effect is very serious for national producers, like what happens to textile products. Textile products from China and India must be seriously alerted by national textile producers because they are inexpensive and good that can influence national products. In long period, this condition will influence companies' existence. If they cannot survive, they will get *financial distress* and finally bankrupt.

Financial distress is financial condition that happens before bankruptcy and liquidity. *Financial distress* is broad concept consisting some situations when companies face financial difficulties (Wuryana, 2005:1). The general term to describe the situation is bankruptcy, failure, debt payment inability, and *default*. Debt payment inability shows negative performance and liquidity. *Default* happens when a company disobeys agreement with creditor and it takes law. Because of *financial distress*, the risk within fund coming from *financial distress* gives negative influence to companies, relation with consumer, supplier, employer and creditor. They will be doubt on companies existence, management focuses to short term cash flow better than long term companies' health, indirect cost within *financial distress* will be higher since it is used to pay lawyer and recovery programs (Wuryana, 2005). There are two factors, internal and external that cause companies' bankruptcy. Chronologically, internal factor is divided into two, economic and financial. Viewed from economic aspect, a company is failed if it has negative *return* or in another word, income and expenditure are not balance. From financial view, a company is failed if it cannot pay its debt when due date however asset total is higher than natural value of asset total until it is regarded bankrupt.

There are some *financial distress* research predicting bankruptcy conducted by some researchers. Mostly, financial ratios used were liquidity ratio, leverage ratio, profitability ratio, solvability ratio and activity ratio. Those ratios could indicate financial risk and measure financial performance of companies. *Financial distress* indication could be predicted using financial ratios such as liquidity ratio, leverage ratio, profitability ratio, solvability ratio and activity ratio as stated in research conducted by Tirapat and Nittayagasetwat (1999), Plat and Platt (2002), Luciana Spica Almilia (2004), Rayenda K Brahmana (2007), Phassawan (2009), Djumahir (2007), and Shuk-Wern Ong (2011). However, not all research finding shows all variables are significant in predicting financial stress. For example, Tirapat and Nittayagasetwat (1999), Rayenda K Brahmana

(2007), and Luciana Spica Almilia (2004) who used SETA variables (*book value of stockholders equity*) found different result. Tirapat (1999) concluded that SETA variables influenced *financial distress* significantly while Luciana Spica Almilia (2004) and Rayenda K Brahmana (2007) did not found that SETA variables influence *financial distress*. Tirapat and Nittayagasetwat (1999) and Shuk-Wern Ong (2011) used liquidity ratios, but only Tirapat and Nittayagasetwat who concluded that liquidity represented by *working capital to total asset* (WCTA) ratio is variable giving influence to *financial distress* of companies.

Companies' failure is not only caused by fundamental factors, but also external condition of companies. According to research by Muhammad Ilman N. S (2009) found that macro economic condition does not influence *financial distress* of companies while Luciana Spica Almilia (2004) concluded that macro economic condition and auditor reputation are factors influencing *delisted* condition of companies as well as Djumahir (2007) concluded that macro and micro variables can influence *financial distress*. However, Phassawan (2009) concluded that macro economic condition does not influence to condition of one year to *financial distress* of companies.

Different analysis method can also influence research finding however there is one or more similar research variables, for example Ling Zhang (2007) whose same objective with Plat and Platt (2002) that is to make a prediction model as *early warning system* that can be used to predict *financial distress*. Most ratios used were similar but research finding is different. Ling Zhang (2007) concluded that profitability ratio influences *financial distress* condition in China, while Plat and Platt (2002) summarized leverage ratio influences *financial distress* in US.

Based on previous research, there are some gaps as follow:

1. The difference in research object, research period, and variables can distinguish research finding. It is proved by some research by Tirapat and Nittayagasetwat (1999), Plat and Platt (2002), Luciana Spica Almilia (2004), Rayenda K Brahmana (2007), Phassawan (2009), Djumahir (2007), and Shuk-Wern Ong (2011)
2. There is inconsistency in research finding for similar variables and it is proved by some research by Tirapat and Nittayagasetwat (1999), Rayendra (2007), Plat and Platt (2002), Luciana Spica Almilia (2004), Djumahir (2007), Phassawan (2009), and Muhammad Ilman N. S (2009). They used same variables.

Based on the gap, this research objective is to combine fundamental variables and macro variables to analyze their influence on *financial distress* probability in Indonesia as early anticipation before it happens.

2. Literature Review

2.1 Financial Ratio Analysis

In evaluating condition and performance of companies' finance, financial ratios are mostly used. S. Munawir (2002:64) defined financial ratios describe *mathematical relationship* between certain number and another and using this ratio can explain description of condition and position of companies' finance to analyzer, mostly when the ratio is compared to financial ratio. Van Horne and Wachowicz (2012:133) stated that financial ratio analysis is index connecting two financial data by dividing one data and another. So, the use of financial ratio analysis can be used to determine liquidity rate, solvability, operational effectiveness and profit rate of company (S. Munawir, 2002:65).

2.2 Financial distress

According to Ross et al. (2005) *financial distress is a situation where a firm's operating cash flows are not satisfy current obligation and the firm is forced to take corrective action*. Based on Andreda and Kaplan (1998) Ross, et al, (1999) *financial distress* happens if companies cannot complete their legal obligation, particularly debt payment. Wruck (1990) in Parulian (2007) defined *financial distress* as profit decrease, Elloumi and Gueyie (2001) in Parulian (2007) categorized companies will have *financial distress* if their net profit decrease for two years gradually. Classens et al. (1999) in Wardhani (2006) defined companies having *financial distress* are those have *interest coverage ratio* less than one. Furthermore, Platt and platt (2002) defined *financial distress as a late stage of corporate decline that precedes more cataclysmic events such as bankruptcy or liquidation*

Some signs indicating *financial distress* condition based on Platt and platt (2002) is distribution postpone, product quality decrease, installment payment postpone to creditor. If that condition is noticed sooner, companies will not get liquidation and bankrupt. Short term *financial distress* (liquidation) is temporary and not too bad, but it will not be solvable and debt higher than asset if it is not overcome soon. There are some definitions of *financial distress* based on its type such as *economic failure, business failure, technical insolvency, insolvency in bankruptcy. and legal bankruptcy* (Brigham dan Gapenski, 1997).

2.3 Macro Economic Condition in Prediction on Financial Distress

The next model development of *financial distress* prediction is considering macro economic condition as predictor variable. The reason is there is systematic risk faced by companies, it means many risks influence

almost all big asset, either positive or negative, or in other words, risk that happens because of complete market change factor. Uncertainty of macro economic condition such as inflation, color bar and money offer change are examples of systematic risks, so macro economic condition directly influences *financial distress* probability.

Inflation Sensitivity

Inflation sensitivity is variable sensitivity variable of companies to inflation. Boediono (1992) defines inflation as cost tendency to increase generally and continuously. Cost increase of one or two goods cannot be categorized as inflation, except if the increase widespread or it causes other product cost increase. So inflation is change of cost rate generally and happens continuously.

Interest Sensitivity

Interest sensitivity is sensitivity variable of companies over interest. Interest is policy representing stance of monetary policy that is decided by Bank Indonesia and announced to public (<http://www.bi.go.id>)

Exchange Rate Sensitivity

Sensitivity of Exchange Rate is variable sensitivity of companies to exchange rate. According to Sadono Sukirno (2003) exchange rate is value showing national currency amount needed to get one unit of foreign currency.

3 Research Hypothesis

There are some research about *financial distress* prediction for bankruptcy probability using fundamental variable done by Kingsley Opoku et. al. (2009), Pranee Leksriskul (2005), Ariel R. Sandin et. al (2007), Arindam Bandyopadhyay (2006), Malcolm Smith et. al (2007), Morten Reistad Aasen (2011), Ling Zhang et. al (2007), Bahaaeddin Alareeni1 & Joël Branson2 et. al (2012), Ms. Umed Kumari1 et. al (2012), Sittichai Puagwatana (2005), Tirapat and Nittayagasetwat (1999), Platt and platt (2002), Luciana Spica (2003), Rayendra (2006), Phassawan (2009), and Djumahir (2007) proved that financial ratio can be used to predict *financial distress* of companies. Mostly, financial ratios used are *Working Capital To Total Asset* ratio, leverage ratio, profitability ratio, solvability ratio, and activity ratio. Those ratios indicate financial risk and measure financial performance of companies. While research using macro variables are done by Luciana (2004) and Djumahir (2007) who used macro variables such as interest, exchange rate, and inflation. This research proved that macro variables can be used to predict *financial distress* of companies.

Research by Tirapat and Nittayagasetwat (1999), Ariel R (2007), and Arindam (2006) showed that WCTA and SETA ratios were variables influence *financial distress* of companies significantly. It was proved by research finding showing WCTA and SETA ratios have significant percentage 1% which means the higher the WCTA and SETA ratios, the lower the *financial distress* probability.

Besides, viewed from macro economic, inflation shows the greatest sensitivity of other macro factors such as interest and exchange rate. It is proved by research finding showing only macro factors are significant, companies' sensitivity on inflation or index change of consumer cost. In other words, only systematic risk of companies getting inflation influences *financial distress* probability and shows the higher the companies face inflation, the higher the *financial distress* of the companies. The fact is proved by research finding by Tirapat & Nittayagasetwat (1999) and Djumahir (2007). Based on both research, this research hypothesis are:

- H₁ : There are fundamental variables such as *Working Capital To Total Asset* ratio, Activity Ratio, Profitability Ratio, Leverage Ratio, Stock Equity Ratio and macro variables such as Exchange Rate, Inflation, and Interest give effect on *financial distress* probability of companies.
- H_{2a} : Fundamental variables such as *Working Capital To Total Asset* (WCTA) ratio and *Equity To Total Asset* (SETA) ratio give significant effect on *financial distress* probability of companies.
- H_{2b} : Macro variable is Inflation Sensitivity that gives the greatest influence to *financial distress* probability of companies.

4. Research Method

4.1 Research Type

This research is an explanatory research that explains causal correlation among independent variables such as fundamental variables and macro variables toward dependent variable that is *financial distress*.

4.2 Population and Sample

The population of this research was all *go public* textile companies in BEI with criteria; they were listed in BEI before January 1st, 2010 and they did not get *delisting* continuously during research period (2010-2012). Based on the criteria, there were 15 textile companies. Sample was taken using saturated sample technique or census research.

4.3 Data Collection Method

Data was collected using documentation of financial statement of textile companies in BEI during 2010-2012. This data source was *Monthly Report Statistic* 2010 – 2012 (corner of BEI Brawijaya), financial statement of the

companies (<http://www.idx.co.id>), and Bank Indonesia.

4.4 Research Variable and Measurement

4.4.1 Dependent Variable

Dependent variable used in this research was *financial distress* which is defined as decrease stage of financial condition before bankruptcy or liquidation happen (Platt and Platt, 2002).

Financial distress variable is qualitative or category variable, so researcher needs right indicator in classifying which companies have *financial distress*. In this research, companies classification used initial criteria arrangement with assumption EBIT which was divided by *Time Interest Earned* from every financial statement is more than one for companies with non *financial distress* and less than one for companies with *financial distress* (Classens, 1999).

4.4.2 Independent Variables

Here are independent variables:

X1 = *Working Capital To Total Asset* (WCTA)

Working Capital To Total Asset (WCTA) variable describes companies' ability to complete their short term obligation and measure using working capital rate on total asset. Here is the formula:

$$\frac{(\text{Current Asset} - \text{current liability})}{(\text{Total Asset})} \quad (1)$$

(Tirapat and Nittagayasetwat, 1999)

X2 = *Asset Turn-over*

Asset Turn-over variable describes how far companies make sale based on total asset they have and it is measured using sale rate on total asset. Here is the formula:

$$\frac{(\text{Sale})}{(\text{Total asset})} \quad (2)$$

(Bahaaeddin Alareeni1 & Joël Branson, 2012)

X3 = *Return On Asset* (ROA)

ROA (*Return on Asset*) variable describes companies' ability making net profit based on certain asset and it is used to measure companies effectiveness in making profit by using their asset. Here is the formula:

$$\frac{(\text{Net profit})}{(\text{Total Asset})} \quad (3)$$

(Phassawan, 2009)

X4 = *Debt Ratio* (DR)

Debt Ratio describes how much companies use debt and show all asset proportion which is funded by debt. It is measured by counting total debt on total asset. Here is the formula:

$$\frac{(\text{Total debt})}{(\text{Total Asset})} \quad (4)$$

(Phassawan, 2009)

X5 = *Shareholder Equity To Total Asset* (SETA)

Shareholder Equity To Total Asset variable of stock equity describes management ability in using asset from existing stocks. It is measured by counting nilai buku from stocks equity divided by total asset. Here is the formula:

$$\frac{(\text{Book Value Of Stock Equity})}{(\text{Total Asset})} \quad (5)$$

(Tirapat and Nittagayasetwat, 1999)

X6 = *Inflation Sensitivity* is sensitivity variable of companies on inflation. The variable used is the first derivation of regression equation (β_1) below:

$$Y_{\text{stock return}} = \beta_0 + \beta_1 X_{\text{INF}} + \beta_2 X_{\text{SB}} + \beta_3 X_{\text{exchange rate}} + \varepsilon \quad (6)$$

X7 = *Exchange Rate sensitivity* is sensitivity variable of companies on exchange rate. It is the first derivation of regression equation which is companies sensitivity (β_3) with equation:

$$Y_{\text{stock return}} = \beta_0 + \beta_1 X_{\text{INF}} + \beta_2 X_{\text{SB}} + \beta_3 X_{\text{exchange rate}} + \varepsilon \quad (7)$$

X8 = *Interest Sensitivity* is sensitivity variable of companies on interest. The variable used is the first derivation of regression equation which is companies sensitivity (β_2) with equation:

$$Y_{\text{stock return}} = \beta_0 + \beta_1 X_{\text{INF}} + \beta_2 X_{\text{SB}} + \beta_3 X_{\text{exchange rate}} + \varepsilon \quad (8)$$

Explanation :

Y_{RS}	=	Stock Return on every company every month
β_0	=	Intercept
$\beta_1, \beta_2, \beta_3$	=	Companies sensitivity on inflation, interest, exchange rate
X_{INF}	=	Monthly Inflation
X_{SB}	=	Interest rate in the last month
X_{KURS}	=	Exchange rate of IDR on Dollar
ε	=	error

Beta (β) is counted from interest / BI rate during one year and processed with regression so generates Y value of stock return. (Tirapat and Nittayagasetwat, 1999, Luciana, 2004 and, Rr Iramani 2008.

4.5 Data Analysis Technique

Data analysis technique used in this research covered two stages; logistic regression and sensitivity analysis. Both were used to know *financial distress* probability of companies and to know financial ratios percentage and how sensitive a company on macro economic condition toward *financial distress*. Next analysis was hypothesis test for macro economic and this research used Direct Test (Tirapat dan Nittayagasetwat, 1999).

Beaver (1966) and Scott (1981) in Luciana (2004) explained correlation between *financial distress* probability and stock return of companies. Actual stock return describes companies' systematic risk which influences most asset, with higher or lower influence because systematic risk influences in basis (Ross, 2009). Scott (1981) in Luciana (2004) confirmed that bankruptcy probability depends on stock return of the companies. Therefore, the stock return describes good reflection about market expectation to *financial distress* probability of the companies. Before using direct test, researcher searched sensitivity of every company on macro indicators such as inflation, interest and exchange rate by using equation of double linier regression:

$$Y_{RS} = \beta_0 + \beta_1 X_{INF} + \beta_2 X_{SB} + \beta_3 X_{KURS} + \varepsilon$$

Explanation :

Y_{RS} = Stock Return of each company in every month

β_0 = Intercept

$\beta_1, \beta_2, \beta_3$ = Companies sensitivity on inflation, interest, exchange rate

X_{INF} = Monthly Inflation

X_{SB} = Interest rate in the last month

X_{KURS} = Exchange rate of IDR on Dollar

ε = error

this double regression analysis in each company was applied for every month. Regression results which were $\beta_1, \beta_2, \beta_3$ would become new variables in logistic analysis and then identified with new name:

$\beta_1 = S_Inflation, \beta_2 = S_SB, \beta_3 = S_Exchange\ rate$

and then, new variables were entered as companies' sensitivity proxy toward macro economic indicator in logistic regression.

5. Finding and Discussion

5.1 Logistic Regression Analysis

Logistic regression was used to know independent variables effect on dependend variable in condition that is dependent variable was 0 and 1 (binary). Basically, logistic regression analysis used binomial distribution because of data characteristics which were observed. Test result is explained below:

5.1.1. Regression Model Test

Regression model test was used to get result that can be used. It was conducted by using comparison of -2 log likelihood, Omnibus test, Hosmer and Lemeshow test.

Table 1. Comparison Result of -2 Log Likelihood

-2 Log Likelihood		Nagelkerke R ²
Constanta (Block 0)	Constanta + Independent Variables (Block 1)	
62,361	17,275	0,844

Source : Processed Data 2013

-2 log likelihood in the model using independent variables (17, 275) which is less than model without independent variables (62, 361) shows that independent variable addition in regression model is better than model without independent variables so the model is appropriate. Nagelkerke R² (0,844) shows independent variables which are in model in explaining response variety is 0, 844 or 84, 4% and the rest 15, 6% is explained by other independent variables.

Table 2. Omnibus Test Result

χ^2_{test}	Significance	$\chi^2_{table (8,5\%)}$	Info
45,086	0,000	15,507	significant

Source : Processed Data, 2013

The result of Chi-Square test is 45,086 with significance value 0,000. Because Chi-Square tes is higher than Chi-Square table (45,086>15,507) and significance value is lower than alpha 5% (0,000<0,050), so model

with independent variables is better and can be used in the model. Therefore, it gives significant effect simultaneously.

Table 3. Result of Hosmer and Lemeshow Test

χ^2_{test}	Significance	$\chi^2_{table (7.5\%)}$	Info
8,084	0,325	14,067	Not significant

Source : Processed Data, 2013

The result of Chi square test value was 8, 084 with significance value 0,325. Because *Chi square* test value was lower than *Chi square* table (8,084<14,067) and significance value was higher than alpha 5% (0,325>0,050), so the model used had similar prediction probability with observed probability or the model could predict observed data well and it was appropriate.

Table 4. Result of Hosmer and Lemeshow Test

Observation	Prediction		Percentage
	FD	NFD	
FD	20	2	90,9%
NFD	1	22	95,7%
Total Percentage = 93,3%			

Source: Processed Data, 2013

In table 5.18, from 22 observations of *Financial distress* (FD), there are 20 accurate predictions and 2 wrong predictions with accuracy percentage 90,9% while from 23 Non *Financial distress* observations, there are 22 accurate predictions and 1 wrong predictions with accuracy percentage 95,7% so overall accuracy prediction is 93,3%.

5.1.2. Hypothesis Test

After doing model worthiness test, next stage is hypothesis test using chi square. If *Wald* value is higher than chi square table value or significance value is lower than alpha 5%, so independent variables give significant influence to dependent variable.

Table 5. Hypothesis Test Result

Variable	Coefficient B	Exp (B)	Wald	Sig	Info
<i>Working Capital To Total Asset</i>	0.198	1.220	5.573	0.018	Significant
<i>Sales To Total Asset</i>	0.140	1.150	0.556	0.456	Not
<i>Roa</i>	0.533	1.705	0.034	0.853	Not
<i>Total Debt To Total Asset</i>	-0.792	0.453	6.159	0.013	Significant
<i>Shareholder Equity To Total Asset</i>	0.017	1.017	4.164	0.041	Significant
S Inflation	-0.168	0.845	5.461	0.019	Significant
S Interest	-0.002	1.171	0.622	0.688	Not
S Exchange Rate	0.158	5426	3.162	0.430	Not

Source : Processed Data, 2013

Based on the test result in Table 5, here is the explanation :

1. *Working Capital To Total Asset* (X1) Variable has *Wald* value (5,573) higher than *Chi Square* (3,841) and significance value (0,018) lower than *alpha* 5% (0,050), so *Working Capital To Total Asset* (X1) variable is statistically significant and gives significant effect on response variable. Thus, liquidity ratio which is WCTA gives significant effect on *financial distress*.
2. Variabel *Sales To Total Asset* (X2) has *Wald* value (0,556) lower than *Chi Square* (3,841) and significance value (0,456) higher than *alpha* 5% (0,050) so, *Sales To Total Asset* (X2) variable does not give significant effect on response variable. Thus, the rate of activity ratio which is STA does not give significant effect on *financial distress* of textile companies.
3. ROA (X3) has *Wald* value (0,034) lower than *Chi Square* (3,841) and significance value (0,853) higher than *alpha* 5% (0,050) so, ROA (X3) does not give significant influence on response variable. So, the rate of probability ratio which is ROA does not influence *financial distress* in textile companies.
4. *Total Debt To Total Asset* (X4) variable has *Wald* value (6,159) higher than *Chi Square* (3,841) and significance value (0,013) lower than *alpha* 5% (0,050), so *Total Debt To Total Asset* (X4) does not give significant effect on response variable. Thus, Leverage ratio which is rate of debt ratio (DR) does not influence *financial distress* of textile companies.
5. *Shareholder Equity To Total asset* (X5) variable has *Wald* value (4,164) higher than *Chi Square* (3,841) and significance value (0,041) lower than *alpha* 5% (0,050) so, *Shareholder Equity To Total asset* (X5) gives significant effect on response variable. Statistic result indicates than stock equity ratio which is

rate of SETA gives significant effect on *financial distress* of textile companies and conversely.

6. S_Inflation (X6) has Wald value (5,461) higher than Chi Square (3,841) and significance value (0,019) lower than alpha 5% (0,050), so Inflation sensitivity variable (X6) gives significant effect on response variable. Statistic result indicates that the higher the sensitivity of companies to inflation the higher the *financial distress* of textile companies and conversely.
7. S_Interest variable (X7) has Wald value (0,161) lower than Chi Square (3,841) and significance value (0,688) higher than alpha 5% (0,050) so, it does not give significant effect on response variable. Therefore, it does not influence *financial distress* of textile companies.
8. S_Exchange Rate variable (X8) has Wald value (0,622) lower than Chi Square (3,841) and significance value (0,430) higher than alpha 5% (0,050) so, it does not give significant value on response variable. Therefore, it does not influence *financial distress* of textile companies.

Thus, the logistic regression equation is:

$$\ln p/(1+p) = 8,599 - 0,198 X1 - 0,140 X2 + 0,533 X3 + 0,792 X4 - 0,017 X5 + 0,168 X6 + 0,002 X7 - 0,158 X8$$

5.1.4 Fundamental Variable Contribution

Based on the Table 5 variables influencing *financial distress* probability of companies are:

1. *Total Debt To Total Asset*
2. *Shareholder Equity To Total asset* (SETA)
3. Inflation sensitivity
4. *Working Capital To Total Asset* (WCTA)

The sequence above is based on Wald value from variables having earlier negative coefficient from every variable, so there is more *financial distress* correlation. If Wald value is higher, companies will have *financial distress*. Then, sequence of variable contribution can be seen from positive variable coefficient which is the most not significant or having the lowest Wald value until the most significant variable or having the highest Wald.

5.2 Discussion

5.2.1 The Effect of Fundamental Variables such as *Working Capital To Total Asset* ratio, Activity Ratio, Profitability Ratio, Leverage Ratio, Stock Equity Ratio and Macro Variables such as Exchange Rate, Inflation, and Interest on *Financial distress* Probability of Textile Companies.

This research found that fundamental variables such as *Working Capital To Total Asset*, *Sales To Total Asset*, ROA, *Total Debt To Total Asset*, *Shareholder Equity To Total Asset* and macro economic variables such as Inflation Sensitivity, Exchange rate sensitivity and interest sensitivity influence *financial distress* probability of textile companies.

5.2.1.1 The Effect of Working Capital To Total Asset on *Financial distress* Probability of Textile Companies.

Data analysis result shows that *Working Capital To Total Asset* of textile companies gives negative significance to *financial distress* probability. It indicates that the higher the working capital, the lower the *financial distress* probabilities of companies because it represents safety rate of short term creditors and fund for investment. The height of working capital in companies having *financial distress* indicates that companies' operational performance is goes do they can manage cash flow well. so, the higher the working capital which is current asset surplus over current debt, the higher companies's ability in completing their duties that decreases *financial distress* possibility. On the other hand, the lower WCTA ratio, the lower the companies' ability in completing their duties that increases *financial distress* possibility.

5.2.1.2 The Effect of Sales To Total Asset on *Financial distress* Probability of Textile Companies.

Sales To Total Asset shows negative effect non significant. The negative effect indicates that the higher the *Sales To Total Asset*, the lower the *financial distress* probabilities of companies. However, *Sales To Total Asset* gives non significant effect on *financial distress* probability of companies. Thus, although there is increase or decrease in this ratio, will not influence *financial distress* of companies. It happens because the sale at that time gets on stagnance point where products were produced continuously while market demand decreased and no demand from national market because consumers prefer textile product from China and India.

5.2.1.3 The Effect of ROA Ratio (*Return on Asset*) on *Financial distress* Probability of Textile Companies

ROA ratio (*Return on Asset*) is one of the profitability ratios which is used to measure companies' ability in making profit based on certain asset rate. Indrawati (2008) explained ROA is used to measure companies' effectiveness in making profit by using their asset. ROA ratio shows negative effect non significant. The negative effect indicates that the higher ROA ratio, the lower the *financial distress* probabilities of companies. However, ROA gives non significant effect on *financial distress* probability of companies. Thus, although there is increase

or decrease in this ratio, will not influence *financial distress* of companies.

5.2.1.4 The Effect of *Debt Ratio* (DR) on *Financial distress* Probability of Companies.

Debt Ratio (DR) is one of the leverage ratios. It shows how much companies asset funded by debt. Commonly, the creditor has significant intention on companies' ability in paying debt because the more the companies' debt, the higher companies' inability in paying their duties to creditor. This ratio focuses on important role of debt funding for companies by showing asset percentage which is supported by debt funding (Horne dan Wachowicz, Jr, 2005). *Debt Ratio* (DR) gives positive significance effect to *financial distress* possibility. The higher the leverage value the higher the *financial distress* possibility. It happens because the higher the debt ratio, the higher the financial risks that leads to *financial distress* of companies. The risk increase indicates *default* because companies fund their asset from debt too much. So, the higher the debt ratio, the higher the *financial distress* possibility.

5.2.1.5 The Effect of Shareholder Equity To Total Asset Ratio on *Financial distress* Probability of Companies.

Shareholder Equity To Total Asset ratio is one of stock equity ratios. It is important for creditors because they need to measure companies' ability in paying fixed assets with equity. SETA ratio is one of the creditors' risk measurements. They view equity as protector or basis of debt use. If owners provide a few total payment, most companies' risk are guaranteed by creditors (Weston dan Copeland, 2005). SETA ratio gives negative, non significant effect. The negative effect indicates that the higher ROA ratio, the lower the *financial distress* probabilities of companies. The height of SETA ratio can describe safety rate which is quite high for companies because the higher the ratio, the lower the loan capital used to fund companies asset. So, *financial distress* possibility decreases. On the other hand, if equity proportion of stockholders only a few from asset total, stockholders will have low investment in companies and loan will be higher. As loan increases, SETA ratio will decrease and duties total will increase. Thus, *financial distress* will increase as well.

5.2.1.6 The Effect of Inflation Sensitivity Ratio on *Financial distress* Probability of Companies.

Inflation sensitivity is a sensitivity variable of companies on inflation. Inflation is rate of price change generally that happens continuously. Rate of average price is measured by arranging price index which is commodity price average which is different based on how important the commodity is, it is called *consumer Price Indeks* (CPI) (Lipse, et al, 1995). Inflation Sensitivity gives positive significance to *financial distress* possibility. It indicates that the higher the inflation, the higher the *financial distress* of companies. In other words if inflation decreases, it will give positive sign to investors to invest their money in capital market so stock return will increase and *financial distress* will decrease. The height of inflation will influence companies' effort to improve sale because the height of inflation influences product price and purchasing power. The problem will decrease sale turnover.

5.2.1.7 The Effect of Exchange Rate Sensitivity on *Financial distress* Probability of Companies.

Exchange Rate Sensitivity gives non significant effect. The negative effect indicates that the higher the exchange rate of IDR to foreign currency, the higher the *financial distress* probabilities of companies. However, Exchange Rate Sensitivity in this research gives non significant effect on *financial distress* probability of companies. It indicates that the rate of exchange rate variable does not give effect on *financial distress*. Since textile industries and textile products have industry integrated structure (*up stream, mid stream, dan down stream*) and close relation among industries, they are considered as independent industries and they do not depend on import material, all materials such as tree fiber, clothes dye and etc are from Indonesia and even exported. So, exchange rate does not give effect on *financial distress*.

5.2.1.8 The Effect of Interest Sensitivity on *Financial distress* Probability.

Interest Sensitivity gives significant effect. The positive effect indicates that the higher the interest sensitivity, the lower the *financial distress* probability. However, Interest Sensitivity gives non significance effect on *financial distress* probability of companies. It indicates that the rate of Interest Sensitivity variable does not give effect on *financial distress*. Since interest influences debt, the height of the interest influences EBIT produced by companies. However in this research period 2010-2012, the interest is low so it does not really influence or does not give significant effect on *financial distress*.

5.2.2 *Working Capital To Total Asset* (WCTA) Ratio and *Equity To Total Asset* (SETA) Ratio Have Big Contribution on *Financial distress* Probability of Companies.

Analysis result shows that other than *Working Capital To Total Asset* (WCTA) ratio dan *Equity To Total Asset* (SETA) ratio that give big contribution on *financial distress* of companies, Debt Ratio also has contribution on *financial distress*, even the biggest contribution. It is proved by descriptive analysis result that shows average of companies having *financial distress* have higher debt than those who do not. It shows the risk faced by the companies having *financial distress* probability because the higher the leverage value of companies, the higher the burden and debt. Therefore, *financial distress* probability is higher too. This finding is similar to Phassawan (2009) concluding that Debt Ratio gives significant effect on *financial distress* condition of companies because Phassawan (2009) explained that if the debt ratio is higher it will endanger companies because the debt will give difficulties to companies in getting additional fund and creditors do not really want to give additional fund to them, and management will face bankruptcy if companies increase debt ratio by loaning additional fund. It

indicates that ratio correlation of *total liabilities to total assets* (ROA) on *financial distress* is positive.

5.2.3 Inflation Sensitivity Gives The Highest Contribution on *Financial distress* Possibility

Based on the analysis result, inflation sensitivity gives the greatest contribution in predicting *financial distress* condition of companies. This finding is appropriate with research conducted by Tirapat and Nittayagasetwat (1999) concluded that the more sensitive companies to macro economic condition which is inflation, the higher the *financial distress* possibility. It is different from research by Phassawan (2009) and Djumahir (2007) explained that macro economic sensitivity did not give effect on *financial distress* probability because inflation rate could still be controlled and stable in research period 2010-2012

6. Conclusion

Some variables giving significant influences on *financial distress* condition of companies in this research were fundamental variables such as *Working Capital To Total Asset* (WCTA), Leverage ratio including *Total Debt To Total Asset* (Debt Ratio), stock equity ratios such as *Shareholder Equity To Total Asset* (SETA) and inflation sensitivity gives significant effect on *financial distress* of companies. Furthermore, based on research finding, contribution sequence of each variable from the most significant to the lowest significant effect on *financial distress* of companies, they were Leverage ratio including *Total Debt To Total Asset* (Debt Ratio), stock equity ratios such as *Shareholder Equity To Total Asset* (SETA), inflation sensitivity and *Working Capital To Total Asset* (WCTA).

Although this research showed some finding, it also had limitation out of researcher's scope which needed to be researched further. The samples of this research were textile companies registered in Bursa Efek Indonesia and this research finding cannot be generalized with other industries having different characteristics such as service companies, food and drink companies, automotive companies, and etc. The research finding can be different from research with different year and different industries.

For further researchers, they are supposed to lengthen research period to see *trend* of research samples and consider the number of samples used including data collection method so the samples really represent population proportionately. They also need to concern with research variable contributions, other predictors and other methods out of this research. For companies, particularly textile companies need to concern with variables influencing *financial distress* condition to avoid or anticipate *financial distress* that can lead to bankruptcy because its signs can be predicted 1 or 2 years earlier so prevention and solution can be searched.

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