The Role of Financial Ratios on the Financial Distress Prediction

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Abstract

Predictions of financial distress has a central role for the company's going concern aspects. This research aims to empirically prove the role of profitability, leverage and liquidity in financial distress. The research population comprised all companies incorporated in the agricultural sector as well as basic industry and chemical sectors. The research sample obtained as many as 380 observations through the purposive sampling method. This study uses logistic regression analysis. This study provides evidence of significant role between profitability and liquidity on financial distress condition in the agricultural sector as well as the basic industry and chemical sectors. In the basic industry and chemical sectors, leverage has a significant role on financial distress condition.

Keywords: financial distress, profitability, leverage, liquidity

1.   INTRODUCTION

The uncertainty of economic conditions that have an impact on the survival of the company requires companies to make policies and manage their financial aspects well. This is necessary to minimize the company's potential to experience financial distress. Financial distress has become a crucial issue in the last few decades (Balasubramanian et al., 2019). Dance & Made (2019) and Veganzones & Severin (2020) defines financial distress as a form of failure where the company run into financial difficulties.

One of the forms of the company's financial difficulties is represented by the delisting phenomenon. According to the Decree of the Board of Directors of the Jakarta Stock Exchange Number: Kep-308 / BEJ / 07-2004, delisting is the elimination of securities from the list of securities listed on the stock exchange so that these securities cannot be traded. Safitri & Fitantina (2016) explained that one

of the causes of the delisted company was financial difficulties. Thus, this condition must be scrutinized by identifying early signs of financial distress.

Table 1. Delisting Companies for the 2015-2019 Period

No.	Company
1.	Davomas Abadi Tbk.
2.	Unitex Tbk.
3.	PT Citra Maharlika Nusantara Corpora Tbk.
4.	Berau Coal Energy Tbk.
5.	Inovisi Infracom Tbk.
6.	Ciputra Property Tbk.
7.	Lamicitra Nusantara Tbk
8.	Ciputra Surya Tbk.
9.	Sorini Agro Asia Corporindo Tbk.
10.	PT Permata Prima Sakti Tbk.
11.	PT Dwi Aneka Jaya Kemasindo Tbk
12.	Truba Alam Manunggal Engineering Tbk.
13.	Jaya Pari Steel Tbk.
14.	Taisho Pharmaceutical Indonesia Tbk
15.	Sekawan Intipratama Tbk
16.	Bara Jaya Internasional Tbk
17.	Grahamas Citrawisata
18.	PT Simagold Inti Perkasa Tbk

Source: Indonesian Stock Exchange

Based on data from delisting companies in table 1, the basic industry and chemical sectors are the most delisting cases in the 2015 to 2019 period, namely 4 companies: Sorini Agro Asia Corporindo Tbk, PT Dwi Aneka Jaya Kemasindo Tbk, Jaya Pari Steel Tbk, and Sekawan Intipratama Tbk. The basic industry and chemical sectors are sectors with a large enough contribution to the economy because these industries produce end products that are useful for supporting development in various fields both in domestic and international trade.

In contrast to the basic industry and chemical sectors, in the agricultural industry there were no cases of delisting during 2015-2019. The agricultural sector is a sector engaged in managing biological resources to produce food, industrial raw materials, and energy sources. Reporting from liputan6.com, sector agriculture became the largest GDP contributor to the national economy in the second quarter of 2020. In the second quarter of 2020 (q to q), the agricultural sector GDP grew by 16.24%, and the contribution to the economy grew by 2.19% (YoY). The relatively large contribution of agricultural industry is due to the improving productivity of this

industry. Thus, a study of financial distress conditions in the agricultural sector as well as the basic industry and chemical sectors is interesting.

The study of financial distress forecast is very crucial to estimate the possibility of a company going bankrupt (Charalambakis & Garrett, 2019; Hantono, 2019; Nirmalasari, 2018). Companies need an effective predictive model to make the right financial decisions (Liang et al., 2016).

There are various factors that are thought to be the cause of financial distress. Shahwan (2015) revealed that the financial difficulties faced by the company could be caused by poor corporate governance. According to the agency theory paradigm, the actions of management or agents are not always in the interests of their owners (Jensen Meckling, 1976), so that the existence of a conflict of interest between the owner's company and the company's management will cause agency costs that can increase the menaces of bankruptcy for the company (Altman & Hotchkiss, 2006).

Karugu et al. (2018) explained that the greater the use of the proportion of debt can increase the risk of a company's financial difficulties. This opinion is strengthened through pecking order theory, debt ratio that is too high will increase the financial risk faced by the company, especially when the company is unable to meet its obligations at maturity. Rahayu et al. (2019) revealed a high of debt proportion when the company's profitability is relatively low, then the chance of the firm facing the financial difficulties risk will increase. From a trade-off theory perspective, an optimal proportion of debt can minimize the possibility of bankruptcy in a company (Neves et al. 2020). Costs arising from the use of company debt are interest costs, which acts as a factor that can cut taxes paid by companies.

The economic consequence of company failure is the potential harm to the company, creditors, shareholders, government, and employees (Jayasekera, 2018; Sunarji & Sufyani, 2017; Geng et al., 2015). Predictions regarding financial distress in a company are useful for stakeholders in taking strategic steps to overcome financial difficulties, helping employees and customers to identify companies with low bankruptcy risk, and helping investors and banks to allocate capital efficiently (Giannopoulos & Sigbjørnsen, 2019). According to Khoja et al. (2019), the reduction of financial distress can provide the earliest possible warning signal to creditors, investors, regulators, and other policymakers.

The study of financial distress prediction was first pioneered by Beaver (1966), aiming to analyze whether financial ratios can predict financial distress and how long bankruptcy has occurred since the degradation of the company's financial ratios. Altman (1968), by using multivariate discriminant analysis, developed a model of bankruptcy prediction through financial ratios in 66 companies. Another model that can be utilized on the financial distress prediction is the Z-mijewski model. Empirical study Z-mijweski (1984) aims to test empirically two biased estimates that can explain the financial distress prediction for 75 bankrupt companies and 73 healthy companies from 1972 to 1978. Zmijewski's model

suggests that financial ratios significant to predicting financial distress are profitability, leverage, and liquidity.

The urgency of predicting financial distress through financial ratios has not been matched by the results of consistent empirical studies. This opinion can be proven through empirical studies conducted by Dance & Made (2019); Assaji & Machmuddah (2019); Kisman & Krisandi (2019); Dewi & Wahyuliana (2019): Sucipto & Muazaroh (2017) shows that company's profitability has a significant role in explaining financial distress. Another opinion expressed by Yadiati (2017) states that profitability has no effect on the company's financial distress.

Mselmi et al. (2017) revealed that the level of corporate leverage has negative role one year before financial distress occurs. Ogachi et al. (2020) strSengthened this opinion, which states that leverage has negative role to explain financial distress. Another opinion expressed by Yazdanfar & Öhman (2020); Moch. et al. (2019) and Kisman Krisandi (2019) state that leverage has a positive effect on financial distress.

Oz Simga-Mugan (2018), Supriyanto & Darmawan (2018; and Mousavi et al. (2015) revealed that the role of liquidity in financial distress is positive and significant. Different opinions expressed by Moch. et al. (2019); Pham Vo Ninh et al. (2018); and Dance & Made (2019), which states that the role of liquidity in financial distress is negative and significant. Based on these empirical studies, it still shows inconsistent results. So that further studies are needed to examine the role of financial ratios on financial distress condition.

This research aims to empirically prove the role of profitability, leverage and liquidity in financial distress. This study provides a comparison of the role of profitability, leverage and liquidity on financial distress in two business sectors. This research contributes to developing knowledge of financial management, especially regarding aspects of financial distress.

2.   LITERATURE REVIEW

2.1. Financial Distress

Financial distress is defined as a form of corporate failure (Veganzones & Severin, 2020). Company failure causes shareholders and creditors to bear relatively high costs (García et al., 2019). Financial difficulties occur because the company experiences problems regarding asset liquidity, the number of fixed costs borne by the company, and a decrease in business operational performance, which causes the company's financial obligations not to be fulfilled (Pham Vo Ninh et al., 2018). In addition, the debt proportion in a relatively large composition will increase the possibility that the company will run into the financial distress condition (Karugu et al., 2018).

2.2. Profitability

Profitability is explained as the company's capability to create profit. According to Ross et al. (2017), profitability is an indicator that represents the level of efficiency of asset management to encourage profit creation for the company.

2.3. Leverage

Leverage is the level of dependence on debt in the composition of the capital structure (Ross et al., 2017). The higher level of leverage indicates that the debt propotion used by the firm has a larger composition.

2.4. Liquidity

Liquidity is explained as the company's ability to meet short-term liabilities in terms of how efficient the firm is in managing its current assets (Ross et al., 2017). Companies can use liquidity as an indicator to determine short-term credit risk.

2.5. Agency Theory

This theory explains the segregation of ownership from corporate control. Jensen Meckling (1976) disclosed that management, as a contracted party by the company's owner, can perform actions that are not in accordance with the interests of the company owner. Agency theory gives birth to the agency cost concept, which is the cost borne by the company's owner to ensure that management acts in the interests of the owner. Altman Hotchkiss (2006) revealed that agency costs borne by the owner of the firm are increasingly becoming a threat to the company because it increases the likelihood of experiencing financial distress.

2.6. Trade-off Theory

This theory explains how the company determines the optimal composition of debt used by considering the tax benefits the company will receive (Neves et al., 2020). The trade-off theory has considered agency costs and the cost of financial distress (Orlova et al., 2020; Zhang Liu, 2017). The higher proportion of debt provides greater tax savings benefits for the company. The interest expense borne by the company on the level of debt used is useful for reducing the level of tax paid by the company. Companies that tend to bear high tax rates have relatively higher debt ratios compared to firms that have lower tax rates.

2.7. Pecking Order Theory

This theory explains company preferences in determining the source of company funding (Myer 1984; Myers Majluf 1984). Baker et al. (2011) revealed that the company would prioritize the use of internal funding. The use of external funding (such as debt and issuing equity) is chosen when internal funds cannot meet the investment needs of the company.

2.8. Profitability and Financial Distress

The pecking order theory provides an explanation that the higher of profitability represents the company having an internal source of funds that can be used to meet investment financing. A higher of profitability will encourage companies to prioritize using internal funds (Giovanni et al. 2020) so that the lower the chance of the company facing the financial difficulties risk. Conversely, a low level of profitability indicates that the company's asset management is not efficient. Companies will experience difficulties in obtaining internal funding for investment financing. This condition encourages companies to use external funding. The consequence of using high external funds is that the possibility of companies experiencing financial distress will increase.

Empirical studies result of Dance & Made (2019), Assaji & Machmuddah (2019), Dewi & Wahyuliana (2019), and Sucipto & Muazaroh (2017) state that company's profitability has a significant role to explain financial distress. This condition shows that the firm's ability to generate profits is getting bigger, so that the possibility of experiencing financial distress is lower. The first alternative hypothesis proposed in this research is:

H_1:   Profitability has a significant role to explain financial distress

2.9. Leverage and Financial Distress

Trade-off theory reveals that debt with an optimal proportion will provide benefits in the form of tax savings for the company (Neves et al., 2020). The interest expense arising from the portion of debt used is a tax deduction factor that must be paid by the company. Trade-off theory has considered the agency cost and the cost of financial distress in capital structure decisions (Baker & Martin, 2011). Companies that tend to have a larger proportion of debt tend to bear considerable agency cost of debt and financial distress cost; the financial distress risk will increase. The proportion of corporate debt will be optimal if the tax savings benefits obtained by the company reach the maximum amount by considering the financial distress cost over the use of debt. With the benefits of tax savings obtained, companies will receive relatively greater benefits than the firms that do not use debt.

Judging from the pecking order theory, company will prioritize using internal funds first compared to external sources of funding, one of which is debt (Baker et al., 2011). Companies that tend to have a larger portion of debt utilization have a large financial risk, especially when they cannot pay its obligations when they fall due. This condition will increase the chance of the firms experiencing financial difficulties (Karugu et al., 2018). According to Rahayu et al. (2019), a high debt proportion when the company's profitability is relatively low, the more likely the company is facing financial difficulties.

Results of empirical studies Yazdanfar & Öhman (2020), Kisman & Krisandi (2019), and Moch et al. (2019) states that the company's level of dependence on the use of debt has a significant role to financial distress. The higher portion of debt used in the company's capital structure, the higher the company's possibility of experiencing financial distress. The second alternative hypothesis proposed in this research is:

H_2:   Leverage has a significant role to explain financial distress

2.10. Liquidity and Financial Distress

Pecking order theory explaines that companies have a hierarchy in determining funding sources to finance investment activities. Sikveland Zhang (2020) revealed that a larger level of liquidity would reduce the risk of bankruptcy. Companies that tend to have a larger level of liquidity will use internal funding in a larger proportion than external funding. Internal funding from paid-in owners' capital or retained earnings has a lower financial risk than funding from debt or shares. Retained profit is the net profit earned by the company but is not distributed to shareholders. Retained earnings used for reinvestment are expected to create an increase in profits for the company (Brealey et al., 2017).

The firm that have a larger level of liquidity indicates the higher its capability to fulfill its short-term obligations, so the chance of the financial distress is low. Moch. et al. (2019) and Dance & Made (2019) disclosed that the liquidity negatively and significantly relates to financial distress. The higher level of company liquidity indicates, the more efficient the management of current assets owned by the company (Ross et al., 2017), so that the chance of the firm experiencing financial distress is getting lower. The third alternative hypothesis proposed in this research is:

H_3:   Liquidity has a significant role to explain financial distress

Based on the alternative hypotheses proposed in this study, the research framework can be described as figure 1.
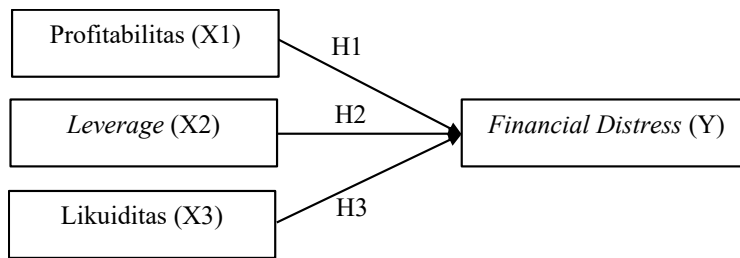
Figure 1. The Conceptual Research Framework

3. METHODOLOGY

This research is a causal study which investigates the causality relationship between the independent variable and the dependent variable (Sekaran and Bougie, 2016). This research aims to empirically prove the role of profitability, leverage and liquidity in financial distress.

The study population included all companies in the agricultural sector as well as basic industry and chemical sectors. The research sample was taken through purposive sampling method. This method is used to obtain research samples according to predetermined criteria. The sampling criteria, among others: a) companies listed on the Indonesian stock exchange in the agricultural industry as well as the basic industry and chemical sectors for the 2015-2019 period, respectively. b) companies publish annual reports or audited financial reports for the period 2015-2019, respectively. c) companies have complete financial distress score data for the period 2015-2019. d) companies have complete profitability data for the period 2015-2019. e) companies have complete leverage data for the period 2015-2019. f) companies have complete liquidity data for the period 2015-2019. Based on these criteria, a research sample of 76 companies or 380 observations was obtained.

Financial distress in this study is measured using the X-score value in the Z-Mijewski prediction model. The company is included in the non-distress category if the X-Score is less than the cut-off point (0). Conversely, the company is included in the financial distress category if the X-Score is greater than the cut-off point (0).

$$X - score = -4.3 - 4.5X_1 + 5.7X_2 - 0.004X_3$$

With: X1= Return on Asset; X2= Debt Ratio; and X3= Current Ratio

Profitability compares net profit and the company's total assets or better known as return on assets (Dance Made, 2019).

$$Return\ on\ asset = \frac{net\ profit}{total\ asset}$$

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In this study, leverage is explained by comparing the total liquidity and the company's total equity or better known as the debt to equity ratio (Sukamulja, 2019).

$$Debt\ to\ equity\ ratio = \frac{liability}{equity}$$

In this study, liquidity measured by comparing the company's working capital and total assets or better known as net working capital to total assets (Khoja et al., 2019; Giannopoulos Sigbjørnsen, 2019; Mousavi et al., 2015).

$$WCTA = \frac{net\ working\ capital}{total\ asset}$$

This study uses secondary data obtained through documentary studies of audited financial reports and annual reports to obtain information relevant to the research topic.

This research uses descriptive statistical analysis and inferential statistics. Descriptive statistics to organize, summarize and present data in an informative manner (Lind et al., 2019). The descriptive statistical components used in this research are the mean (mean) and standard deviation. Inferential statistics in this study were carried out by logistic regression analysis using SPSS version 22.

4. RESULT AND DISCUSSION

4.1. Descriptive Statistics Results

Table 2 presents the descriptive statistics results of agricultural sector as well as basic industry and chemical sectors.

Table 2. Descriptive Statistics Results

Variable	Agricultural Sector			Basic Industry and Chemical Sector		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Profitability	80	-0.44	10.72	300	1.97	7.43
Leverage	80	66.50	572.24	300	513.04	4,668.54
Liquidity	80	1.39	29.46	300	14.00	23.62
X-score	80	-1.33	1.78	300	-1.24	2.49

Source : data processed (2021)

In the agricultural sector, descriptive statistics result of 80 companies show that the average values of the profitability, leverage and liquidity variables were -0.44 percent, 66.50 percent, and 1.39 percent, respectively. The average x-score for the 2015-2019 period was -1.33. This average x value explains that agricultural

sector companies generally do not experience financial difficulties. The standard deviation value shows the amount of data fluctuation. The standard deviation values of the profitability, leverage, liquidity, and x-score variables were 10.72, 572.24, 29.46, and 1.78, respectively.

In the basic industry and chemical sectors, the result of descriptive statistics from 300 samples show that the average value of profitability, leverage, and liquidity variables are 1.97 percent, 513.03 percent, and 14.00 percent, respectively. The average x-score in the 2015-2019 period was -1.24. This x-score average value explains that companies in the basic industry and chemical sectors generally do not run into financial distress. The standard deviation value shows the amount of data fluctuation. The standard deviation values of the profitability, leverage, liquidity, and x-score variables were respectively 7.43, 4668.54, 23.62, and 2.49.

4.2. Estimation Fit Model

Table 3 shows a decrease in the -2Log Likelihood value at step 1 of 13,543 compared to the -2Log Likelihood value at step 0 of 67,633, in the agricultural sector. In the basic industry and chemical sectors, shows that the -2Log Likelihood value at step 0 is 257,069 has decreased to 147,781 at the -2Log Likelihood value in step 1. A significant decrease in the -2Log Likelihood value indicates that the regression model in this research was feasible and in accordance with the research data.

Table 3. Estimation Results of the Eligibility of the Regression Model

Information	-2 Log Likelihood	
	Agricultural Sector	Basic Industry and Chemical Sectors
Step 0	67,633	257,069
Step 1	13,543	147,781

Source : data processed (2021)

4.3. Coefficient of Determination

Table 4 shows that the Nagelkerke R Square value of agricultural sector is 0.861 or 86.1 percent, the value show that the variability of financial distress can be explained through the profitability, leverage, and liquidity variables of 86.1 percent. Meanwhile, 13.9 percent of the variability in financial distress was explained by other variables that are not included in the regression model.

In the basic industry and chemical sectors, the estimation of the coefficient determination result shows the Nagelkerke R Square value is 0.53 or 53.0 percent. This value indicates that the variability of financial distress can be explained by the variable profitability, leverage, and liquidity of 53.0 percent. Meanwhile, 47.0 percent

of the variability in financial distress was explained by other variables that are not included in the regression model.

Table 4. Result of Estimation Coefficient of Determination

Step 1	Nagelkerke R Square	
	Agricultural Sector	Basic Industry and Chemical Sectors
	0.861	0.530

Source : Data processed (2021)

4.4. Prediction Accuracy

In the Agricultural sector, the prediction accuracy result in table 5 show that only 10 companies are in financial distress from 12 companies predicted to run into financial distress, and 66 companies do not run into financial distress from the 68 predicted companies. Thus, based on logistic regression analysis, financial distress prediction through the Zmijewski model has a prediction accuracy level of 95.0 percent.

Table 5. Estimation Results of Prediction Accuracy

Classification Matrix					
			Predicted		
	Observed		Financial Distress		Percentage Correct
			Distress	Non-Distress	
Step 1	Financial Distress	Distress	10	2	83.3
		Non-Distress	2	66	97.1
	Overall Percentage				95.0

Source : data processed (2021)

Table 6. Estimation Results of Prediction Accuracy

			Classification Matrix		
				Predicted	
		Observed	Financial Distress		Percentage Correct
			Distress	Non-Distress	
Step 1	Financial Distress	Distress	25	21	54.3
		Non-Distress	3	251	98.8
	Overall Percentage				92.0

Source : Data processed (2021)

Table 6, regarding the estimation results of the prediction accuracy in the basic industry and chemical sectors show that of the 46 companies, there are only 25 companies in financial distress. In non-financial distress conditions, out of 254 companies, only 251 companies did not run into financial distress. Thus, based on logistic regression analysis, financial distress prediction through the Zmijewski model has a prediction accuracy rate of 92.0 percent in the basic industry and chemical sectors.

4.5. Significance Test

The significance test results in table 7 show the role of the independent variable to the dependent variable partially.

Table 7. Results of Significance Test of Regression Model

Variable	Agricultural Sector		Basic Industry and Chemical Sectors	
	Regression Coefficient	Significance	Regression Coefficient	Significance
Profitability	0.508	0.033	0.148	0.000
Leverage	-0.002	0.107	-0.004	0.000
Liquidity	0.144	0.048	0.047	0.000

Source : Data processed (2021)

Results of Logistic Regression Analysis in the Agricultural Sector
1. The result of significance test show that the significance value of profitability is 0.033, which is lower than the assumed significance level (0.033 <0.05). Thus, the first hypothesis is accepted. The interpretation of the first hypothesis acceptance is that it is proven that profitability has a significant role on the financial distress.
2. The result of significance test show that the leverage significance value of

0.107 is greater than the assumed significance level (0.107> 0.05). Thus, the second hypothesis is rejected. The interpretation of the second hypothesis is that it is not proven that leverage has a significant role on the financial distress.

3. The result of significance test show that the significance value of the liquidity variable is 0.048 lower than the assumed significance level (0.048 <0.05). Thus, the third hypothesis is accepted. The interpretation of the third hypothesis acceptance is that it is proven that liquidity has a significant role on the financial distress.

Results of Logistic Regression Analysis in the Basic Industry and Chemical Sectors
1. The significance test results show that the significance value of the profitability variable is 0.000 lower than the assumed significance level (0.000 <0.05). Thus, the first hypothesis is accepted. The interpretation of the first hypothesis acceptance is that it is proven that profitability has a significant role on financial distress condition.

2. The significance test results show that the significance value of the leverage variable is 0.000 lower than the assumed significance level (0.000 <0.05). Thus, the second hypothesis is accepted. The interpretation of the second hypothesis acceptance is that it is proven that leverage has a significant role on the financial distress condition.

3. The significance test results show that the significance value of the liquidity variable is 0.000 lower than the assumed significance level (0.000 <0.05). Thus, the third hypothesis is accepted. The interpretation of the third hypothesis acceptance is that it is proven that liquidity has a significant role on the financial distress condition.

4.6. The role of the Profitability on Financial Distress

The significance test estimate result, indicate that profitability has a significant role in explaining the variability of financial distress condition in the agricultural sector and the basic industry and chemical sectors. This condition indicates that this study has sufficient evidence to explain the role of profitability in predicting financial distress. A significant relationship indicates that the level of company profitability can influence financial distress.

The positive direction of influence shows that the higher the profitability value, the healthier the company is (Kisman & Krisandi, 2019). The profitability coefficient in the Z-Mijewski formula is negative. When the value of profitability is positive, and this value is getting bigger, then the X-Score obtained through the equation becomes smaller and negative. The lower the X-score, the healthier the company is, so that the company will fall into the non-distress category. Thus, an increase in profitability indicates that the company's condition is healthier and the greater

possibility that the company will not run into financial distress. This study result are supported by Masitoh & Setiadi (2017) and Giovanni et al. (2020b), which states that the direction of the positive influence shows that the higher the profitability of the company will reduce the possibility of the company experiencing financial distress. Giovanni et al. (2020b) explained that the greater of profitability value, the higher the Altman Z-score, meaning that the possibility of the company experiencing financial distress is getting lower.

This study provides evidence regarding the pecking order theory, a greater level of profitability indicating that the company has an internal source of funds that can be used to meet investment financing. Companies have a preference for using internal funds first compared to using external funds. A greater level of profitability will encourage companies to prioritize using internal funds (Giovanni et al., 2020) so that the financial difficulties risk that the company will face can be minimized. This research is in line with the research results Assaji & Machmuddah (2019), Dewi & Wahyuliana (2019), Sucipto & Muazaroh (2017), and Dance & Made (2019), which revealed that the role between profitability on financial distress is significant.

4.7.   The role of Leverage on Financial Distress

This study concludes that there is a negative and insignificant role of leverage on financial distress condition in the companies of agricultural sector. The insignificant results indicate that this study has not presented sufficient evidence to explain the role of leverage in financial distress prediction. The insignificant relationship indicates that leverage cannot explain the variability of financial distress.

In the basic industry and chemical sectors, this study concludes that the role of leverage on financial distress is negative and significant. Significant results indicate that this study has sufficient evidence to explain the role of leverage in financial distress prediction. A significant relationship indicates that leverage can be used to predict financial distress.

The direction of the negative influence on the agricultural sector and the basic industry and chemicals sectors is supported by research Atika et al. (2020), which explains that the magnitude of the leverage value will affect the size of the financial distress score. In this study, the negative influence shows that the greater level of leverage, the less likely the firm will run into financial distress. The leverage coefficient in the Z-Mijewski formula is positive. When the leverage value is negative and the greater the X-score obtained through the equation will be lower and negative. The lower the X-score indicates that the company is healthier, so the company is included in the non-distress category. Thus, an increase in leverage will minimize the possibility of financial distress. The negative role of leverage on financial distress is supported by Giovanni et al. (2020b), which revealed that the

greater the leverage value would minimize the possibility of the company experiencing financial distress.

This study provides evidence regarding the trade-off theory, which states that the use of debt with an optimal proportion will provide benefits in the form of tax savings for the company (Neves et al., 2020). The greater the tax savings obtained by the company, the higher the company's profits, so that high leverage will minimize the occurrence of financial distress. The negative and significance role of leverage on financial distress condition in the basic industry and chemical sectors is supported by companies' characteristics in this sector, where the average use of debt in this sector is relatively large, namely 513.04 percent. Thus, debt in an optimal composition can minimize the potential for a company to run into financial distress.

The study results indicate a significant role of leverage on financial distress condition in the basic industry and chemical sectors to support the research results Yazdanfar & Öhman (2020), Kisman & Krisandi (2019), and Moch. et al. (2019) states that the role of leverage on financial distress is significant.

4.8. The role of Liquidity on Financial Distress

This study proves that liquidity has a significant role on the financial distress condition in the agricultural sector as well as in the basic industry and chemical sectors. Significant results indicate that this study has sufficient evidence to explain the role of liquidity in predicting financial distress. A significant relationship indicates that the level of company liquidity can influence financial distress.

In this study, the direction of the positive influence states that the greater level of liquidity, the healthier the firm is. The liquidity coefficient in the Z-Mijewski formula is negative. When the liquidity value is positive and greater, the X-score obtained through the equation will be lower and negative. The lower the X-score indicates that the company's condition is healthier so that the company will be included in the non-distress category. Thus, an increase in liquidity will increase the likelihood that a company will avoid financial distress. This result are supported by research Pulungan et al. (2017), which reveals that the direction of the positive relationship shows that the higher level of the liquidity, the less likely the firm will run into financial distress. Pulungan et al. (2017) revealed that the greater the liquidity value, the higher the Altman Z-Score value-added, so the chance of the company experiencing financial distress is getting lower.

This study provides evidence regarding the pecking order theory, a high level of liquidity will reduce the risk of bankruptcy. Companies with a high level of liquidity tend to use internal funding in a larger proportion than external funding. Internal funding that comes from the owner's equity or retained earnings has a lower financial risk than funding that comes from debt or shares. This study result support

the study by Pham Vo Ninh et al. (2018), Oz Simga-Mugan (2018), Supriyanto & Darmawan (2018), and Mousavi et al. (2015), which states that the role of liquidity on financial distress is significant.

5.   CONCLUSION

This research aims to empirically prove the role of profitability and liquidity in financial distress condition in the agricultural sector as well as the basic industry and chemical sectors. This can be proven by estimating the significant and positive role of the profitability and liquidity variables on financial distress condition. This study also provides empirical evidence about the role of leverage on financial distress condition in the basic industry and chemical sectors. This condition can be proven by estimating a significant negative role of leverage on financial distress. Thus, the aims in this study have been achieved.

The study provides policy recommendations that companies pay more attention to the level of profitability and liquidity because it is proven that the greater the level of profitability and liquidity will reduce the chance of financial distress. In the basic industry and chemical sectors, companies are expected to pay attention to the level of debt utilization. However, the greater the level of leverage can minimize the chance of the company experiencing financial distress, but other effects on the use of debt need to be considered.

This research is limited to a study of the role of profitability, leverage and liquidity in financial distress. Future research is expected to prove the role of behavioral finance, such as managerial experience and overconfidence, to explain the variability of financial distress.

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