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Profitability Moderates the Effect of Firm Size, Leverage, and Liquidity on Financial Distress

Abstract. A condition in which a company cannot generate sufficient profits, making it unable to meet or pay its financial obligations, is called financial distress. This is typically due to high fixed costs, a high degree of illiquid assets, or revenues sensitive to economic downturns. Financial distress needs to be studied further as it can provide considerations regarding the company's financial conditions and performance before investing to reduce opportunities for investment losses. The financial distress value can also be a benchmark of whether the company management can manage all company assets, effectively and efficiently control costs, and check opportunities for business development. This research aims to determine the effect of company size, leverage and liquidity on financial distress with profitability as a moderating variable. This research used a purposive sampling technique on food and beverage subsector manufacturing companies with a total population of 41 companies into 17 samples with a research period from 2018-2021. The research results show that leverage has a negative and significant effect on financial distress; instead, company size and liquidity have a positive and significant effect on financial distress. Profitability can moderate the influence of company size and liquidity on financial distress but cannot moderate the influence of leverage on financial distress. So, manufacturing companies in the food and beverage sub-sector need to consider company size, leverage, and liquidity as a reference to avoid financial distress. They need to conduct market analysis to understand growth potential and demand before increasing the company's size. Investors need to choose companies with an appropriate size, stable market share, and reasonable leverage ratio for their investments to be successful.

Keywords: firm size, leverage, liquidity, profitability, financial distress, company's financial conditions.

Suggested Citation

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Прибутковість пом'якшує вплив розміру фірми, кредитного плеча та ліквідності на фінансові труднощі

Анотація. Стан, за якого компанія не може отримати достатній прибуток, що робить її неспроможною виконувати або оплачувати свої фінансові зобов'язання, називається фінансовою скрутою. Зазвичай це відбувається через високі постійні витрати, високий рівень неліквідних активів або доходи, чутливі до економічних спадів. Фінансові труднощі потребують подальшого вивчення, оскільки вони можуть надати міркування щодо фінансового стану компанії перед тим, як інвестувати, щоб зменшити ймовірні інвестиційні ризики. Наявність фінансової скрути також може бути орієнтиром того, чи може керівництво компанії управляти всіма активами компанії, ефективно та результативно контролювати витрати та перевіряти можливості для розвитку бізнесу. Це дослідження спрямоване на визначення впливу розміру компанії, левериджу та ліквідності на фінансові труднощі з прибутковістю як модеруючою змінною. У цьому дослідженні використовувався метод цілеспрямованої вибірки компанії підсектору виробництва харчових продуктів і напоїв із загальною сукупністю 41 компанії в 17 вибірках з періодом дослідження з 2018 по 2021 роки. Результати дослідження показують, що леверидж має негативний і значний вплив на фінансові труднощі; натомість розмір і ліквідність компанії мають позитивний і значний вплив на фінансові труднощі. Прибутковість може зменшити вплив розміру компанії та ліквідності на фінансові труднощі, але не може пом'якшити вплив левериджу на фінансові труднощі. Отже, виробничим компаніям у підсекторі харчових продуктів і напоїв необхідно враховувати розмір компанії, леверидж та ліквідність як орієнтир, щоб уникнути фінансових труднощів. Їм потрібно провести аналіз ринку, щоб зрозуміти потенціал зростання та попит перед збільшенням розміру компанії. Щоб інвестиції були успішними, інвесторам необхідно вибирати компанії відповідного розміру, із стабільною часткою ринку та прийнятним коефіцієнтом левериджу.

Ключові слова: розмір фірми, леверидж, ліквідність, прибутковість, фінансові труднощі, фінансовий стан компанії.

INTRODUCTION

The activity of any company can be described by a set of transactions recorded in the accounting system. The result of data processing in the accounting system for a certain period (usually month, quarter, or year) is the formation and presentation of financial statements.

Financial statements show the company's situation, which can be used to see the company's financial performance based on the presented information (Fenny et al., 2022). The inability to capture and read signals of poor financial performance will result in losses in invested capital (Studi et al., 2018). These signals can be captured by considering the company's financial distress value.

Financial distress is when a company faces worsening financial conditions due to a lack of funds to fulfil its obligations, which makes it unable to reach its economic goals, namely profit (Larasati & Wahyudin, 2019). The indicator of financial distress includes a condition when a company experiences increased debt, decreased sales, and followed by a decrease in profits. In such conditions, company management needs to immediately improve company performance to reduce the percentage of bankruptcies (Giarto & Fachrurrozie, 2020). Financial distress occurs when a company does not have sufficient ability to compete with competitors, causing a decline in

financial performance. The initial stage of financial distress is characterized by the company's decreasing ability to fulfil obligations (Hutauruk et al., 2021).

Financial distress needs to be studied further as it can provide considerations in terms of the company's financial conditions and performance before investing in order to reduce opportunities for investment losses. The level of financial distress can also provide a signal to potential investors about whether their target company is appropriate or not. The financial distress value can also be a benchmark of whether the company management can manage all company assets, effectively and efficiently control costs, and check opportunities for business development.

This study focuses on the food and beverage sector because, in 2020, the Purchasing Manager's Index (PMI) in Indonesian manufacturing companies decreased by 27.5% due to the decrease in industrial utilities up to 50%, which resulted in a decrease in the PMI index (Cahyani, 2020). The food and beverage sector is a sub-sector of manufacturing companies in the consumer goods sector. Indeed, the economic uncertainty during the COVID-19 pandemic has impacted the sustainability of food and beverage companies (Prakoso, 2020). Financial distress is also influenced by factors such as

company size, leverage, liquidity, and profitability, which need further study.

Company size describes the level of assets owned by a company. The larger the company size, the easier it is for the company to get large loans with lower interest rates. The large size of the company can convince investors to invest their capital. Company size correlates financial distress with capital structure. Companies with large capital facing financial distress due to high debt levels are more likely to recover from financial distress quickly (Abdioğlu, 2019). Abdioğlu (2020), Widhiastuti & Rahayu (2022), and Syuhada et al. (2020) revealed that company size influences financial distress. On the other hand, Putri & Erinos (2020) and Muzharoatiningsih & Hartono (2022) found that company size does not affect financial distress.

Kasmir (2019) explains that leverage can be used to measure the extent to which company assets are financed with debt. This means that the company uses a larger amount of debt to finance its business activities than using its capital. Widhiastuti & Rahayu (2022) and Giarto & Fachrurrozie (2020) found that leverage significantly influences financial distress. This contradicts other studies by Muzharoatiningsih & Hartono (2022) and Nurrohim et al. (2022) that leverage does not affect financial distress.

The liquidity ratio indicates the company's ability to meet short-term funding needs with the current assets. When many short-term liabilities are due, the company faces a dangerous situation that must be immediately handled to avoid financial distress (Putri & Erinos, 2020). Kasmir (2019) argues that the liquidity ratio or working capital ratio can be used to measure a company's liquidity level by comparing the 2 components on the balance sheet, namely total current assets and total short-term debt. Fitri R. & Syamwil (2020) explain that the liquidity ratio has a significant effect on financial distress. On the other hand, Restianti & Agustina Linda (2018) and Larasati & Wahyudin (2019) found that liquidity has no significant effect on financial distress.

The influencing factors of financial distress, such as company size, leverage, and liquidity, show inconsistent results. The inconsistencies in the results of previous studies encourage the researchers to use profitability as a moderating variable in this study.

THEORETICAL BACKGROUND

Signalling Theory

Signalling theory explains the actions that need to be done by a company to provide clues to investors about the company's prospects. Signalling theory helps companies, owners, and stakeholders to reduce asymmetric information by producing quality and integrated financial statements (Restianti & Agustina Linda, 2018). Ghazali (2020) defines signalling theory as understanding how a signal is valuable and useful while other signals are useless. Signalling theory examines how signals relate to the qualities reflected in them and what elements of the signal or surrounding community make the signal remain convincing and attractive.

Agency Theory

Agency theory describes a framework that links the impact of management's decision-making on the company's condition as reflected in the financial statement. The financial statement can be used to assess the company's conditions (Restianti & Agustina Linda, 2018). Larasati & Wahyudin (2019) argue that agency theory explains that all individuals have their interests and act following their interests. This causes a conflict of interest because of asymmetric information between the agent and the principal. Chrisman (2004) in Ghazali (2020) argue that agency problems can be moral hazards or adverse selection. Moral hazard is a condition in which the agent lacks effort related to work. Moral hazard is considered a form of opportunistic attitude such as free riding, shirking, and perk-consumption. Adverse selection is when the agent has lower ability and competent skills in the work environment.

Financial Distress

Financial distress describes a condition where a company experiences financial difficulties. Without immediate and appropriate handling, companies experiencing financial distress can result in bankruptcy (Saputri, 2019). Fachrudin (2020) defines financial distress as a condition where a company's cash flow is insufficient to pay its financial obligations. This situation can cause the company to fail to fulfil its contracts and require debt restructuring. Financial distress is when a company cannot manage and maintain stable financial performance resulting from net losses in the current year. These losses cause decreased capital and assets, which results in dividend payments in arrears (Desiana & Diem, 2021). In this study, financial distress used the Springate model because it is considered the most accurate bankruptcy analysis (Desiana & Diem, 2021), with an accuracy rate of 92.5% (Fachrudin, 2020). This is in line with Qaidah Agsa & Ikhwan Maulana Haeruddin (2022) that the Springate model has a higher level of accuracy than the Zmijewski model. Besides, Prasetyani & Sofyan (2020) found that the Springate model is more accurate than the Altman Z-Score model.

Company Size

Company size is a scale that categorizes companies as large or small based on total sales assets, stock market value, and average sales level. Large-size companies can find it easier to obtain external funding sources (Syuhada et al., 2020). Desiana & Diem (2021) define company size as a scale that shows the company's financial capability based on the company's total assets. The higher the total assets, the larger the company size, and vice versa. Dirman (2020) argues that company size is a scale that describes the total assets owned by a company. In this study, company size uses the calculation scale of total assets' natural logarithm (Ln). Natural logarithms are applied to company size to reduce the nominal value of large total assets so data on total assets can be normally distributed (Muzharoatiningsih & Hartono, 2022).

Leverage

Leverage ratio can measure how much a company's assets are financed with debt. This means that the company has a larger amount of debt for its operational activities than its capital (Kasmir, 2019). Desiana & Diem (2021) explain that the leverage ratio is a ratio that measures the comparison of funds available by the owner and funds borrowed from third parties. Leverage shows the company's ability to meet financial obligations, both long and short-term. This ratio describes the company's ability to use assets or funds with fixed costs to increase returns for the owner. In this study, the indicator used to measure the level of leverage is the debt-to-asset ratio (DAR). The debt-to-asset ratio can be used to measure how much a company's assets are financed by debt (Kasmir, 2019). The debt-to-asset ratio can be calculated by comparing total debt with total assets. It can be said that the amount of a company's debt can influence asset management (Kasmir, 2019).

Liquidity

Liquidity ratios describe a company's ability to meet short-term obligations due soon. The higher the liquidity value, the greater the company can settle its debts (Oktasari, 2020). Saputri (2019) argues that the liquidity ratio shows the company's ability to pay its current debts. The liquidity ratio can be defined as a form of management responsibility towards company owners and investors. If the liquidity ratio value is high, the company can pay off its debts. In this study, the quick ratio is the indicator used to calculate the liquidity ratio. The quick ratio shows the company's ability to pay current debts with current assets without considering the inventory value (Kasmir, 2019).

Profitability

Profitability ratios can assess a company's ability to make a profit and measure the level of management effectiveness. This can be seen from the profits obtained from sales and investment (Kasmir, 2019). Wilujeng & Yulianto (2020) explain that the profitability ratio describes the final results of some decisions and policies, such as profit margin on sales, return on total assets, and others. The profitability ratio indicates a company's ability to generate profits based on product marketing to earn profits (Sugiharto et al., 2021). This study used Return on Total Assets (ROA) as the indicator to calculate the profitability ratio. Return on total assets (ROA) is a ratio that shows the return on the number of assets used in a company and can also be used as a benchmark for the effective management of a company's investment funds.

The Effect of Company Size on Financial Distress

Abdioğlu (2019) argues that company size links financial distress with capital structure. Even though the company is in a state of financial distress due to high debt levels, it is more likely to recover from this situation more quickly if it has large capital. Company size is a determining factor in the occurrence of financial distress. Large companies show the solid financial foundation that

the company has to survive economic uncertainty. On the other hand, it is doubtful that smaller companies will survive in uncertain economic conditions that lead to financial distress. This is in line with Oktasari (2020), Orbaningsih et al. (2022), and Desiana & Diem (2021) that company size influences financial distress.

H1: Company size has a significant positive effect on financial distress.

The Effect of Leverage on Financial Distress

Giarto & Fachrurrozie (2020) explain that leverage shows the extent to which a company's operational activities are financed by debt. Referring to the pecking order theory, the higher the leverage value, the greater the risk that the company will not be able to pay its obligations. It indicates poor company performance, which can lead to unhealthy and decreased company values. Companies with a high level of leverage are at risk of experiencing financial distress because the company will focus on using assets to pay off liabilities, which can lead to bankruptcy. This is in line with Wilujeng & Yulianto (2020), Syuhada et al. (2020), Fitri R & Syamwil (2020), Fitri R & Syamwil (2020), Saputri (2019) and Larasati & Wahyudin (2019) that leverage affects financial distress.

H2: Leverage has a significant negative effect on financial distress.

The Effect of Leverage on Financial Distress

Larasati & Wahyudin (2019) state that companies with a large nominal amount of short-term debt will have a decreased level of liquidity. Therefore, investigations of whether errors occurred in managing the company or whether decisions are biased towards the personal interests of certain parties, resulting in financial distress, are needed. The higher the level of liquidity, the better the company's financial condition, and the lower the level of liquidity, the poorer the company's financial condition, which can lead to financial distress. This is in line with Oktasari (2020), Mashudi et al. (2021), Syuhada et al. (2020), and Restianti & Agustina Linda (2018) that liquidity affects financial distress.

H3: Liquidity has a significant positive effect on financial distress.

The Effect of Company Size on Financial Distress with Profitability as a Moderating Variable

The larger the company size, the larger the profits generated by a company. Company size indicates the size of the assets owned by a company, making it easier for the company to carry out its operational activities to earn profits. A large company size with good asset management to obtain profits can minimize the possibility of financial distress.

H4: Profitability can moderate the effect of company size on financial distress.

The Effect of Leverage on Financial Distress with Profitability as a Moderating Variable

A large utilization of debt for the company's operational activities can cause problems in the future

regarding the repayment of the principal and the interest. Profit is the key goal of a company. Good use of assets will increase profits, which will improve the company's financial condition. The level of the company's ability to earn profits will affect the level of the company's ability to pay its financial obligations so that the company has a smaller possibility of experiencing financial distress. This is in line with Wilujeng & Yulianto (2020), who state that profitability can moderate the effect of leverage on financial distress.

H5: Profitability can moderate the effect of leverage on financial distress.

The Effect of Liquidity on Financial Distress with Profitability as a Moderating Variable

Liquidity indicates the availability of funds the company owns to meet all debts due soon. Every profit earned by the company will increase the level of the company's assets, meaning that it will increase the level of liquidity so the company can pay all long-term and short-term debts. Therefore, the level of financial distress and bankruptcy can be smaller.

H6: Profitability can moderate the effect of liquidity on financial distress.

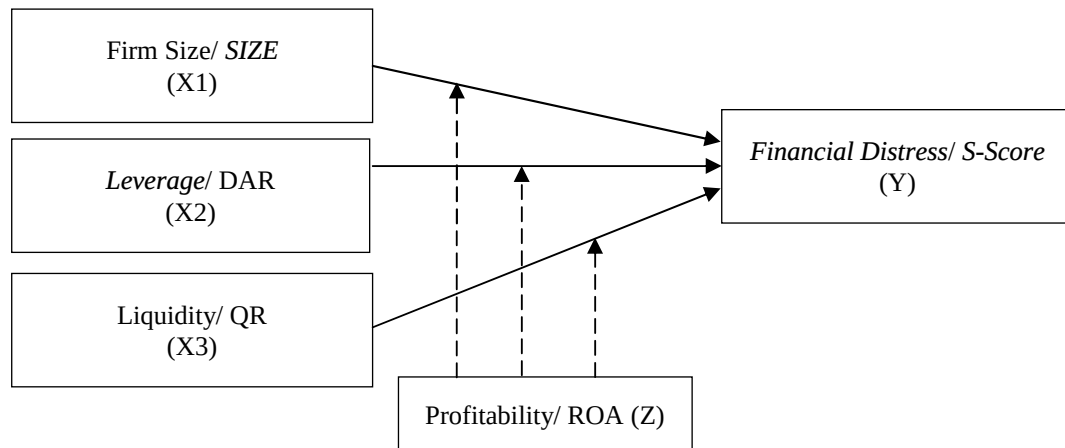


Figure 1. Research Conceptual Framework

RESEARCH METHODOLOGY

Research Site

This study is associative as it only aims to identify the relationship between two or more variables of financial distress. This study involved food and beverage sub-sector companies that have gone public and are listed on the Indonesia Stock Exchange for the 2018-2021 period.

Population and Sample

Sugiyono (2021) defines population as an area with certain qualities and characteristics of objects or subjects

to be studied. In this study, the population was the food and beverage sub-sector companies listed on the Indonesia Stock Exchange, totalling 41 companies.

Samples are a part of the number and characteristics possessed by a population. If the population is too large, the researcher cannot study the entire population due to limited funds, energy, and time. Thus, the researcher can only use samples from that population (Sugiyono, 2021). The sample in this study involved food and beverage sub-sector companies listed on the Indonesia Stock Exchange with certain criteria.

Table 1. Sample Criteria

No.	Description	Number
1.	Food & beverage sub-sector companies listed on the IDX	42
2.	Food & beverage sub-sector companies that are not regularly registered on the IDX for the 2018-2021 period	(17)
3.	Food & beverage sub-sector companies that have negative profits for the 2018-2021 period	(8)
Number of sample		17
Total sample (17 companies x 4 years)		68

Source: data processed by researchers (2023).

Variable Operationalization

Table 2. Variable Operationalization

No.	Variable	Operational Definition	Formula	Scale
1	Company Size (Size)	Size can classify companies as large or small based on the amount of total assets related to the company's ability to face financial problems.	Size = Ln (total assets)	Ratio
2	Leverage (DAR)	Leverage is a ratio that shows how far the assets/funds owned by the company can fulfill the financial obligations.	$(DAR) = \frac{\text{Total debt}}{\text{Total assets}}$	Ratio
3	Liquidity (QR)	Liquidity is a ratio that shows a company's ability to handle its short-term financial obligations.	$(QR) = \frac{\text{Current assets} - \text{Inventories}}{\text{Current liabilities}}$	Ratio
4	Profitability (ROA)	Profitability is a ratio that can provide an assessment of a company's performance in generating profits by managing assets and liabilities which is also the final result of decisions in a certain period.	$(ROA) = \frac{\text{Net profits}}{\text{Total assets}}$	Ratio
5	Financial Distress (S-Score)	Financial distress refers to the company's poor financial condition due to a net loss for the current year resulting in capital deficiency causing the company unable to pay obligations, arrear in dividend payment, and lead to bankruptcy.	$S\text{-Score} = 1.03A + 3.07B + 0.66C + 0.4D$ Notes: A = working capital/total assets B = earning before interest and taxes/total assets C = net income before taxes/total assets D = sales/total assets	Ratio

Data Analysis

PLS model evaluation was based on prediction orientation which is non-parametric in nature. This evaluation covered assessing the outer model and inner model (Ghozali, 2021).

Evaluation of the structural model (Inner Model) aims to predict the relationship between latent variables using the bootstrapping method. Inner model testing can be evaluated using R-Square for dependent constructs, Stone-Geisser Q-square test for predictive relevance, and t-test and significance of structural path parameter coefficients. The R² was carried out to measure the level of variation in changes in the independent variable towards the dependent variable. Q-square calculated the observation value produced by the model. A value of Q² > 0 indicates the model has predictive relevance, while Q² < 0 indicates the model lacks predictive relevance (Ghozali, 2021). This study only used the structural model (inner model) because it used secondary

data so evaluation of the measurement model (outer model) is not required.

Bootstrapping is a non-parametric procedure to solve abnormal data problems, particularly with small samples. Bootstrapping allows testing of the statistical significance of various PLS-SEM results. In bootstrapping, sub-samples are created by randomly drawing observations (with replacement) from the original data set. To ensure the stability of the results, the number of sub-samples must be large. A small number of bootstrap sub-samples (e.g., 500) can be used for an initial check. However, the preparation of final results requires a large number of bootstrap sub-samples (for example, 5,000) (Juliandi, 2018).

A hypothesis test was carried out by considering the t-statistic and probability values. The t-statistic value of > 1.96 with α 5% indicates that the hypothesis is accepted, while a value of < 1.96 indicates that the hypothesis is rejected. H_a is accepted if the p-value < 0.05 (Ghozali, 2021).

This study used the PLS approach with the following equation model:

$$S\text{-Score} = \beta_1 \text{Size} + \beta_2 \text{DAR} + \beta_3 \text{QR} + \beta_4 \text{ROA} + \beta_5 \text{Size} * \text{ROA} + \beta_6 \text{DAR} * \text{ROA} + \beta_7 \text{QR} * \text{ROA} + \varepsilon$$

Notes:	S-Score	= Financial distress
	$\beta_1 \text{Size}$	= Company size
	$\beta_2 \text{DAR}$	= Leverage
	$\beta_3 \text{QR}$	= Liquidity
	$\beta_4 \text{ROA}$	= Profitability
	$\beta_5 \text{Size} * \text{ROA}$	= Interaction between profitability and company size
	$\beta_6 \text{DAR} * \text{ROA}$	= Interaction between profitability and leverage
	$\beta_7 \text{QR} * \text{ROA}$	= Interaction between profitability and liquidity
	ε	= Error term
	$\beta_1 - \beta_7$	= Regression Coefficient

RESULTS AND DISCUSSION**Descriptive Statistical Analysis**

Descriptive analysis provides an overview of data based on the mean, median, standard deviation, variance, maximum value, minimum value, sum, range, kurtosis, and skewness (distribution skewness). This study used independent variables of company size (size), leverage

(debt to asset ratio), and liquidity (quick ratio), a moderating variable, namely profitability (return on assets), and a dependent variable, namely financial distress (Springate model). The results of the descriptive analysis test using SmartPLS data can be seen below:

Table 3. Descriptive Statistical Analysis

	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
S-Score	1.679	1.532	0.411	8.598	1.151	18.090	3.293
SIZE	23.415	27.355	13.620	30.623	5.883	-1.503	-0.479
DAR	0.427	0.413	0.108	3.846	0.447	51.100	6.675
QR	2.218	1.234	0.543	11.429	2.388	5.652	2.394
ROA	0.112	0.095	0.002	1.035	0.138	29.468	4.785

Source: data processed by researchers (2023).

The results of data processing using Smart PLS are presented in Table 6. The details explanation for the mean value, minimum value, maximum value, and standard deviation of the company size, leverage, liquidity, profitability, and financial distress variables can be seen below:

The S-Score variable involving a sample size of 68 obtained a minimum value of 0.411 at PT. Budi Starch & Sweetener Tbk and a maximum value of 8,598 at PT. Sariguna Primatirta Tbk with a mean value of 1.679 and a standard deviation value of 1.151.

The SIZE variable involving a sample size of 68 obtained a minimum value of 13,620 at PT. Akasha Wira Internasional and a maximum value of 30,623 at PT. Mayora Indah Tbk with a mean value of 23.415 and a standard deviation value of 5.883.

The DAR variable involving a sample size of 68 obtained a minimum value of 0.108 at PT. Campina Ice Cream Industry Tbk and a maximum value of 3,846 at PT. Sariguna Primatirta Tbk with a mean value of 0.427 and standard deviation value of 0.447.

The QR variable involving a sample size of 68 obtained a minimum value of 0.543 at PT. Budi Starch & Sweetener Tbk and a maximum value of 11,429 at PT. Sariguna Primatirta Tbk with a mean value of 2.218 and a standard deviation of 2.388.

The ROA variable involving a sample size of 68 obtained a minimum value of 0.002 at PT. Sekar Bumi Tbk and a maximum value of 1.035 at PT. Sariguna Primatirta Tbk with a mean value of 0.112 and a standard deviation of 0.138.

Model Analysis

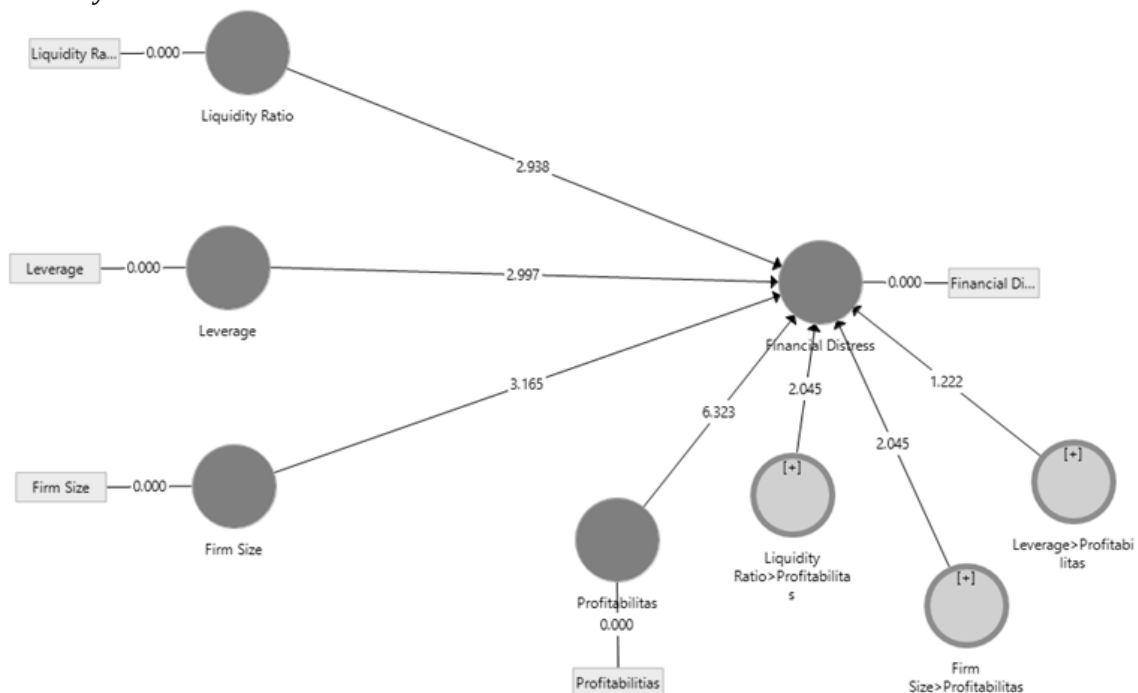


Figure 2. Algorithm PLS Model

Structural Model Analysis (Inner Model)

Structural model analysis (inner model) was based on the values of R² and F².

The R-Square (R²) value shows the level of determination of the exogenous variable relative to the endogenous variable. A large R² value indicates a good level of determination.

Based on Table 4 below, the Adjusted R-Square value reaches 0.960. This can be interpreted that variables X and Z, namely SIZE, Debt to Asset Ratio, Quick Ratio, and Return on Assets provide 96% effects to Financial Distress (S-Score), while the other 4% is influenced by other factors outside this study.

Table 4. Coefficient of Determination

	R-Square	R-Square Adjusted
S-Score	0.964	0.960

Source: data processed by researchers (2023).

F-Square (F²) is a measure to see the relative impact of an exogenous variable or independent variable and moderation on the endogenous variable or dependent variable.

Table 5. Result of F² for effect size

	S-Score
S-Score	
SIZE	0.387
SIZE>ROA	0.071
DAR	0.328
DAR>ROA	0.190
QR	0.752
QR>ROA	0.256
ROA	3.669

Source: data processed by researchers (2023).

Table 5 shows that variables that have large effect size with the F-Square criteria of > 0.35 cover:

The effect of SIZE on the S-Score obtained an F-Square value of 0.387.

The effect of Quick Ratio on S-Score obtained an F-Square value of 0.752.

The effect of Return on Asset Ratio on S-Score obtained an F-Square value of 3.669.

Variables that have moderate effect size with the F-Square criteria of 0.15-0.35 cover:

The effect of Debt to Asset Ratio on S-Score obtained an F-Square value of 0.328.

The effect of Return on Asset Ratio in moderating Debt to Asset Ratio on S-Score obtained an F-Square value of 0.190.

The effect of the Return on Asset Ratio in moderating the Quick Ratio on the S-Score obtained an F-Square value of 0.256.

Variables that have a small effect size with F-Square criteria of 0.02 to 0.15 cover:

The effect of Return on Asset Ratio in moderating SIZE on S-Score obtained an F-Square value of 0.071.

Indeed, there is no negligible effect as there is no F-Square value below 0.02.

Path Coefficients

The hypothesis testing used path coefficients for the effect of variables X and Z on variable Y. This analysis was carried out by comparing t-tables and t-statistics that bootstrapping produces in SmartPLS. If the t-statistic value > t-table (1.96) with a significance level of 5% or $\alpha = 5\%$, p-value 0.05, then the hypothesis is accepted (Sugiyono, 2021).

Table 6. Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
SIZE → S-Score	0.135	0.145	0.042	3.214	0.001
SIZE>ROA → S-Score	0.108	0.105	0.054	1.998	0.046
DAR → S-Score	-0.477	-0.404	0.164	2.915	0.004
DAR>ROA → S-Score	0.080	0.084	0.068	1.173	0.242
QR → S-Score	0.249	0.275	0.077	3.244	0.001
QR>ROA → S-Score	0.244	0.245	0.111	2.209	0.028
ROA → S-Score	0.974	0.930	0.147	6.644	0.000

Source: data processed by researchers (2023).

Based on the results of the Path Coefficients analysis in Table 6, a structural equation model can be created below:

$$S\text{-Score} = 0.135 \text{ SIZE} - 0.477 \text{ DAR} + 0.249 \text{ QR}$$

Based on Table 6, it can be said that:

1. The results of the hypothesis test on the effect of company size (SIZE) on financial distress (S-Score) obtain a parameter coefficient value of 0.135 with a t-statistical significance of 3.214 which is higher than 1.96 and a P-Values value of 0.001 which is lower than 0.05. This indicates that company size has a significant positive effect on financial distress, so H1 is accepted.

2. The results of the hypothesis test on the effect of

leverage (debt to asset ratio) on financial distress (S-Score) obtain a parameter coefficient value of -0.477 with a t-statistical significance of 2.915 which is higher than 1.96 and a P-Values value of 0.004 which is lower than 0.05. This means that leverage has a significant negative effect on financial distress, so H2 is accepted.

3. The results of the hypothesis test on the effect of liquidity (quick ratio) on financial distress (S-Score) obtain a parameter coefficient value of 0.249 with a t-statistical significance of 3.244 which is higher than 1.96 and a P-Values value of 0.001 which is lower than 0.05. This means that liquidity has a significant positive effect on financial distress, so H3 is accepted.

4. Hypothesis test results on the effect of profitability (return on assets) in moderating company size (SIZE) on financial distress (S-Score) obtain a parameter coefficient value of 0.108 with a t-statistical significance of 1.998 which is higher than 1.96 and a P-Values value of 0.046 which is lower than 0.05. This means that profitability can moderate the influence of company size on financial distress, so H4 is accepted.

5. Hypothesis test results on the effect of profitability (return on assets) in moderating leverage (debt to asset ratio) on financial distress (S-Score) obtain a parameter coefficient value of 0.080 with a t-statistical significance of 1.173 which is lower than 1.96 and a P-value of 0.242 which is higher than 0.05. This means that profitability cannot moderate the effect of leverage on financial distress, so H5 is rejected.

6. Hypothesis test results on the effect of profitability (return on assets) in moderating liquidity (quick ratio) on financial distress (S-Score) obtain a parameter coefficient value of 0.224 with a t-statistical significance of 2.209 which is higher than 1.96 and a P-Value value of 0.028 which is lower than 0.05. This means that profitability can moderate the effect of liquidity on financial distress, so H6 is accepted.

Discussion

The Effect of Company Size on Financial Distress

The results of the analysis show that company size has a positive and significant effect on financial distress. This indicates that the larger the company size, the more stable the company's financial condition resulting in higher share prices in the capital market. The results of this study are in line with the signaling theory that company size can be a positive signal to investors and become a benchmark for investing capital as a large company scale makes people know and trust the company more. Based on agency theory, large company sizes in food and beverage companies can provide resources to managers, in this case as agents, to carry out research and product development in accordance with fluctuations in consumer demand, taste trends, and applicable regulations regarding food safety. Besides, product diversification which is generally owned by large companies can help reduce the risk of depending on one product. In this case, the owner's task as principal is to form an active and strict internal monitoring committee to minimize the risk of financial distress. It is in line with Desiana & Diem (2021) Oktasari (2020) and Yokeu Bernardin & Indriani (2020) that company size has a significant positive effect on financial distress. On the other hand, it contradicts a previous study by Dirman (2020) that company size has a significant negative effect on financial distress, it is because in his study, Dirman (2020) used the Altman Z-Score model ratio that the calculation ratio is different from the S-Score model ratio.

The Effect of Leverage on Financial Distress

The results of the study show that leverage has a negative and significant effect on financial distress. A decrease in the level of leverage indicates that lower company assets are financed by debt so management can focus the flow of funds on company development. The results are in line with signaling theory in which a low level of leverage indicates a positive signal for investors to make investment decisions. A low level of leverage can provide a sense of security to investors because the funds invested are not used to pay debts but for the development of the company which can generate greater profits which leads to good returns for the investor. Referring to agency theory, leverage can trigger conflicts between the principal (owner) and the manager (agent). If managers desire to increase company growth, they will be very likely to use more debt as a source of funds. Indeed, it is risky because it can increase the possibility of financial distress and threaten the interests of the principal. Therefore, the principal needs to monitor and evaluate the agent's decision to use debt to acquire assets to ensure that the decision is correct. These results are in line with Aditya Kusuma Wardhana (2021), Sugiharto et al. (2021), Syuhada et al. (2020), Wilujeng & Yulianto (2020), Wilujeng & Yulianto (2020), Yokeu Bernardin & Indriani (2020) Saputri (2019) that leverage has a negative and significant effect on financial distress.

The Effect of Liquidity on Financial Distress

The results of the study show that liquidity has a positive and significant effect on financial distress. Companies with a high level of liquidity tend to have no difficulty in paying off all their short-term debt. This is in line with signaling theory that a high level of liquidity can attract more investors to invest because a high level of liquidity indicates the large value of assets owned by the company which can be used for surviving the threat of financial distress. This is in line with agency theory that a high level of liquidity indicates good management processing of funds and assets. Good management processes are inseparable from cost savings and increasing efficiency within the company. In food and beverage companies, fluctuations in demand can affect the company's cash flow. Referring to agency theory, management (agents) need to decide the amount of inventory needed to overcome this. This is in line with Mashudi et al. (2021), Mashudi et al. (2021), Syuhada et al. (2020), and Yokeu Bernardin & Indriani (2020) that liquidity has a significant positive effect on financial distress.

Profitability Moderates the Effect of Company Size on Financial Distress

The results of this study show that profitability can moderate the effect of company size on financial distress. Company size indicates the strength of the company's assets. Strong assets can maintain the financial stability of a company to prevent the risk of financial distress. Strong assets can be obtained from good profits. As a moderating variable, profitability can influence financial distress. Based on signaling theory, profitability can be a

signal for investors indicating the company's ability to create profits. Large-size companies are believed to have good profitability. In food and beverage companies, the key to generating high profit is a good brand image and observation of market conditions. High profitability contributes to the reputation of food and beverage companies which can encourage asset growth increasing company size. Larger companies are considered more stable and have easier and better access to financing that can boost the growth of the company's assets. Referring to agency theory, the principal can implement a more careful asset processing policy by utilizing the value of the size of the company to produce good profitability. Management as an agent can be assessed based on good asset processing to reduce the potential risk of failure and excessive use of assets to mitigate the risk of financial distress. In food and beverage companies with physical assets in the form of production equipment and warehouses, good processing is needed to face market changes. Limited supply from suppliers is important to maintain stable profitability to face financial distress.

Profitability Moderates the Effect of Leverage on Financial Distress

The results of the study show that profitability cannot moderate the effect of leverage on financial distress. The profits obtained by the company are not only used for the company's operational activities but also paying off debts. This indicates that profitability is not fully capable of reducing or increasing a company's debt level. Generally, food and beverage companies have moderate margin levels due to intense competition between competitors and the need to maintain stable and affordable selling prices for consumers. With a moderate level of profitability, the profits achieved are not large enough to overcome the high level of leverage. Food and beverage companies need high working capital, particularly in accounts receivable. They need to maintain an adequate supply of fresh funds, a stable cycle of receipts from consumers, and sufficient terms of credit from vendors. This dependency caused by cash flow can also limit profitability's ability to resolve leverage levels. These findings are in line with Aditya Kusuma Wardhana (2021), Sugiharto et al. (2021), and Yokeu Bernardin & Indriani (2020) that profitability cannot moderate the effect of leverage on financial distress.

Profitability Moderates the Effect of Liquidity on Financial Distress

The results of the study show that profitability can moderate the effect of liquidity on financial distress. Liquidity indicates a company's ability to pay its short-term obligations. The company's current assets outside of inventory have a value higher than the company's current debt. Paying off the current debt will be difficult due to the lower current assets owned by the company. The addition of the company's current assets can also be obtained from profits each profit earned will be converted into current assets which will increase the level of liquidity. The increasing profits followed by an increase in liquidity levels can be a combination shield for

companies to face the risk of financial distress. This finding is in line with signaling theory that high profitability can provide a signal that company management has good quality in managing the company's operations, finances, and liquidity. The quality of food and beverage company management in generating stable profits and managing liquidity can be assessed from the efficiency of production, distribution, and production supply chain management. Based on agency theory, high profitability will increase the trust of the principal (owner) in the agent (management) as the agent can manage liquidity challenges in food and beverage companies such as fluctuations in demand, changes in consumer trends, and supply risks which can reduce profit margins. A high level of profitability indicates effective management in managing liquidity levels, such as good supervision of operational and financial risks to avoid the risk of financial distress. This is in line with Aditya Kusuma Wardhana (2021) and Sugiharto et al. (2021) that profitability can moderate the influence of liquidity on financial distress.

CONCLUSION

The results of the study of financial indicators of food and beverage sub-sector companies listed on the IDX for the 2018-2021 period show the following:

1. Company size (SIZE) has a significant positive effect on financial distress (S-Score).
2. Leverage (debt to asset ratio) significantly negatively affects financial distress (S-Score).
3. Liquidity (quick ratio) positively affects financial distress (S-Score).
4. Profitability (return on assets) can moderate the effect of company size (SIZE) and liquidity (quick ratio) on financial distress (S-Score). Instead, profitability (return on assets) can't moderate the effect of leverage (debt to asset ratio) on financial distress (S-Score).

Thus, manufacturing companies in the food and beverage sub-sector need to consider company size, leverage, and liquidity as a reference to avoid financial distress. They need to carry out market analysis to understand growth potential and demand before increasing the size of the company. Besides, they need to avoid large debt financing company operational activities so that company assets are not burdened. Moreover, they need to consider profitability because it can strengthen the influence of changes in the value of company size and liquidity.

Investors must consider company size, leverage, and liquidity as guidelines for determining which companies are safe from bankruptcy. They need to choose companies with an appropriate size, stable market share, and reasonable leverage ratio for their investments to be successful. They also have to consider companies with a wide customer base and diverse sources of income to survive market fluctuations. Moreover, they can study the level of profitability because it can moderate the effect of company size and liquidity.

Future studies are expected to expand to other company sectors and increase the research period to provide better data variations.

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