Effect of Capital Structure, Leverage and Inflation on the Potential for Financial Distress

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Article Info	Abstract
	This study was conducted with the aim of examining the effect of capital structure, leverage and inflation on the potential for financial difficulties in the automotive and component sub-sector companies. The sample in this study is the automotive and component sub-sector companies listed on the Indonesia Stock Exchange (IDX) for the 2017-2021 period, the sample selection using the purposive sampling method. The data analysis method used is logistic regression analysis, data processing using eviews 12. The results show that (1) capital structure proxied by long term debt to equity ratio (lder) has a significant effect on financial difficulties, (2) financial leverage is not significant. affect financial difficulties, (3) operational leverage does not significantly affect financial difficulties and (4) inflation does not significantly affect the potential for financial difficulties.

INTRODUCTION

A company is an entity created to create wealth for its owners. In a public company, the owners are shareholders. Agency theory states that the owner appoints an agent to manage the company so that it is able to produce optimal performance and generate prosperity for shareholders. Agents are directors and staff who are authorized by the owner to run the company. Competitive conditions, macroeconomic factors and internal corporate governance are some of the factors that determine the success of agents in managing the company. Uncertain macroeconomic conditions cause companies to increase their risk to be able to compete, increased risk can cause companies to experience difficulties. Companies experiencing financial distress can be seen through the company's earnings per share (Kurniasanti & Musdholifah, 2018). Earning per share (EPS) is a comparison between profit after tax and the number of shares outstanding, if the EPS ratio is negative, it means that the company suffers a loss, the loss is an

indication that the company is experiencing financial distress. If financial distress conditions occur continuously, it can potentially lead to the company going bankrupt.

Macroeconomic conditions such as the COVID-19 pandemic that occurred some time ago had an impact on companies in Indonesia, especially automotive and component companies. Based on data in published financial reports, it shows that several automotive and component companies are experiencing symptoms of financial distress as seen from the negative earnings per share.
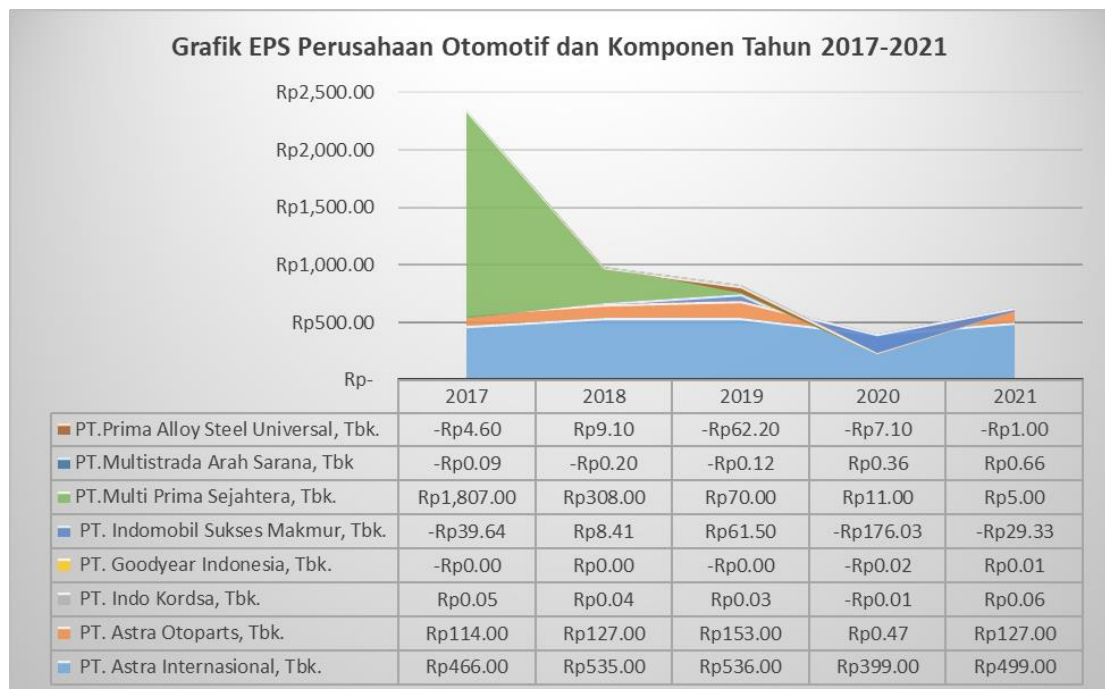

Grafik EPS Perusahaan Otomotif dan Komponen Tahun 2017-2021

	2017	2018	2019	2020	2021
PT.Prima Alloy Steel Universal, Tbk.	-Rp4.60	Rp9.10	-Rp62.20	-Rp7.10	-Rp1.00
PT.Multistrada Arah Sarana, Tbk	-Rp0.09	-Rp0.20	-Rp0.12	Rp0.36	Rp0.66
PT.Multi Prima Sejahtera, Tbk.	Rp1,807.00	Rp308.00	Rp70.00	Rp11.00	Rp5.00
PT. Indomobil Sukses Makmur, Tbk.	-Rp39.64	Rp8.41	Rp61.50	-Rp176.03	-Rp29.33
PT. Goodyear Indonesia, Tbk.	-Rp0.00	Rp0.00	-Rp0.00	-Rp0.02	Rp0.01
PT. Indo Kordsa, Tbk.	Rp0.05	Rp0.04	Rp0.03	-Rp0.01	Rp0.06
PT. Astra Otoparts, Tbk.	Rp114.00	Rp127.00	Rp153.00	Rp0.47	Rp127.00
PT. Astra Internasional, Tbk.	Rp466.00	Rp535.00	Rp536.00	Rp399.00	Rp499.00

Figure 1. Graph of EPS of Automotive and Component Companies

In Figure 1, it can be seen that the earnings per share (EPS) of automotive and component companies tends to decline during 2017-2021. Especially in 2020 almost all companies experienced a decline in EPS. Some companies have a negative EPS value, which means the company suffers a loss.

One of the factors thought to have an effect on the potential for bankruptcy is the capital structure decision. Capital structure is the ratio of long-term debt to equity owned by the company. If the company's funding is obtained from debt, it will increase the company's risk, because debt has consequences for the cost of capital, namely interest that must be paid at maturity, if the company fails to pay its obligations immediately, the company has the potential to go bankrupt. Previous research on the relationship between capital structure and the potential

for bankruptcy found inconsistent results. (Fadhilah & Nurdin, 2020) concluded that the capital structure has a significant negative effect on financial distress. (Rahma & Dillak, 2021) instead found that capital structure had a positive effect on financial distress. Other research from (Akmalia, 2020) stated that there is no influence between the equity structure on the potential for financial distress.

Another factor thought to influence the potential for bankruptcy is leverage. Leverage by (Hanafi, 2004) literally leverage, leverage is used to increase the expected profit. The use of debt in the company is expected to leverage profits, but increasing debt is also an increase in risk, namely liquidity risk. The company's inability to pay short-term obligations is an indication that the company is experiencing financial difficulties. Debt has a mandatory consequence, namely the interest expense that must be paid at maturity under any conditions, the success of the investment or the failure of the investment does not reduce the interest expense that must be paid. Leverage is divided into two, namely financial leverage and operating leverage. The relationship between leverage and the potential for bankruptcy has been investigated by several studies but found inconsistent results. (Nurriadianis & Adi, 2021) and (Moleong, 2017) states that the leverage variable has a significant influence on the possibility of the company experiencing financial distress. Meanwhile, other studies have found different results, (Fadhilah & Nurdin, 2020) and (Kurniasanti & Musdholifah, 2018) concluded that leverage does not significantly affect financial distress.

Macroeconomic factors are also thought to influence the potential for corporate bankruptcy, including inflation. The higher the inflation rate of a country indicates economic instability in that country, if the national economic condition is disturbed it will affect macro factors such as the company's financial condition, and the potential for bankruptcy. The results of previous studies regarding the relationship between inflation and the potential for bankruptcy found different results, including: (Ningsih, Husnan, & Suryani, 2021) found that inflation had no significant negative effect on financial distress, while the research (Kurniasanti & Musdholifah, 2018) shows that there is no influence of inflation on financial distress.

Based on the existing phenomena and the results of previous studies showing that there is still a research gap, it is necessary to conduct further

research on the effect of capital structure, leverage and inflation on financial difficulties in automotive and component sub-sector companies listed on the Indonesia Stock Exchange (IDX) for the 2017-2021 period.

METHODS

Research Approach

This research is a type of causal associative research that aims to find a relationship between one variable and another, in this case to analyze how the influence of the independent variable on the dependent variable.

Population and Sample

The population in this study is the automotive and component sub-sector companies listed on the Indonesia Stock Exchange for the 2017-2021 period. Sampling using purposive sampling method, namely taking samples based on certain criteria. The criteria used are as follows :

a. Companies engaged in the automotive and components sub-sector and have conducted Initial Public Offerings during 2017 to 2021.

b. Financial statements and annual reports are presented consistently during 2017 to 2021.

c. The financial statements have been audited for the period 2017-2021.

d. The required research data is available completely and clearly in the financial statements or annual reports for 2017 to 2021.

Research Variables

Dependent Variables

The independent variable in this study is financial distress. Financial distress is defined as the stage where the company experiences a decline in financial condition that occurred before bankruptcy or liquidation (Platt & Platt, 2002). In this study, financial distress is proxied by earnings per share (EPS) as research conducted by (Maulida, Moehaditoyo, & Nugroho, 2018). If the company has negative earnings per share, it is given a score of 1 and if the company has positive earnings for share, it is given a score of 0. Companies experiencing financial distress are given a score of 1 and a score of 0 if the company does not

experience financial distress. The formula for calculating EPS according to (Garrison & Brewer, 2013) is by dividing the earnings after tax (EAT) available to common stockholders by the number of common shares outstanding during one year:

$$Earning\ Per\ Share\ (EPS) = \frac{Net\ Income\ of\ the\ company}{Outstanding\ Share}$$

Independent Variables

1) Capital Structure

According to (Sutrisno, 2013) capital structure is a balance between foreign capital and own capital. The capital structure is a combination of long-term sources of funds used by the company (Ismail, Tommy, & Untu, 2016). From this definition, the capital structure calculation uses the long-term debt to equity ratio (LDER) :

$$LDER = \frac{Long-Term\ Debt}{Shareholders'Equity}$$

2) Financial Leverage

Financial leverage is the use of funds that cause the company to bear a fixed burden of interest (Sutrisno, 2013). The company's goal is to use debt in the capital structure to increase profits above the interest expense that must be borne. Financial Leverage is proxied by the degree of financial leverage (DFL). According to (Mudawanah, 2019) the DFL calculation formula is as follows :

$$Degree\ Of\ Financial\ Leverage\ (DFL) = \frac{\%\ Change\ in\ EPS}{\%\ Change\ in\ EBIT}$$

3) Operating Leverage

Operating leverage is the use of assets that causes the company to bear fixed costs in the form of depreciation (Sutrisno, 2013). Companies use operating leverage to accelerate and enlarge profits using their fixed assets. In this study, operating leverage is proxied by degree operating leverage (DOL). The formula for calculating degree operating leverage is as follows (Sutrisno, 2013) :

$$Degree\ Operating\ Leverage\ (DOL) = \frac{\%\ Change\ in\ EBIT}{\%\ Change\ in\ Sales}$$

4) Inflation

Inflation is a condition of increasing the price of goods and the weakening of the value of the currency, if inflation is not controlled it will have a bad impact on the national economy of a country. Inflation can be interpreted as an increase in the prices of goods and services in general and continuously within a certain period of time (Bank Indonesia, 2022).

$$Inflation = \frac{IHKn - IHKn - 1}{IHKn - 1}$$

IHKn : consumer price index

Data Analysis Methods

The method used is logistic regression analysis with a significance level of 0.05. Data processing using eviews 12. Statistical method steps carried out are descriptive statistics, model feasibility testing, model accuracy testing, multicollinearity testing, logistic regression analysis, hypothesis testing and drawing conclusions.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1. Descriptive Statistics

Date: 09/25/22   Time: 20:47
Sample: 2017 2021

	FD	LDER	DFL	DOL	INFLASI
Mean	0.272727	0.386487	2.391452	118.9327	0.026020
Median	0.000000	0.116099	0.843896	1.595576	0.027200
Maximum	1.000000	1.873342	49.31792	6025.945	0.036100
Minimum	0.000000	0.015269	-4.105937	-165.3510	0.016800
Std. Dev.	0.449467	0.494318	7.492203	815.6334	0.007409
Skewness	1.020621	1.552597	5.035236	7.098890	-0.001500
Kurtosis	2.041667	4.390995	30.26223	51.89083	1.459828
Jarque-Bera	11.65328	26.53085	1935.642	5939.748	5.436148
Probability	0.002948	0.000002	0.000000	0.000000	0.066002
Sum	15.00000	21.25678	131.5298	6541.300	1.431100
Sum Sq. Dev.	10.90909	13.19491	3031.188	35923920	0.002964
Observations	55	55	55	55	55

Source: Processed Data Results Eviews 12

Based on the results of the descriptive statistical test in table 1, it can be seen that the number of research data is 55 observations originating from 11 samples of automotive and component sub-sector companies listed on the Indonesia Stock Exchange (IDX) over a five-year period starting from 2017 to 2021. Explanation each research variable based on table 1 is as follows :

1) Financial Distress (FD)

   The financial distress variable as proxied by earnings per share (EPS) has an average value (mean) of 0.272727 with a standard deviation of 0.449467. Standard deviation > mean then there is a fairly large fluctuation in the financial distress variable. The highest value of financial distress is 1 and the lowest value is 0. The value is 1 if the company is experiencing financial distress and 0 if the company is not experiencing financial distress.

2) Capital Structure/Longterm debt to equity ratio (LDER)

   The LDER variable has an average value of 0.386487 which means that the average capital structure of automotive and component companies is mostly funded from internal funding (equity) compared to external funding (long-term debt). The standard deviation is 0.494318. Since the standard deviation > mean, there are quite large fluctuations in the LDER. The highest value of LDER is 1.873342 and the lowest value is 0.015269.

3) Degree Financial Leverage (DFL)

   The DFL variable has an average value of 2.391452 and a standard deviation of 7.492203. There are quite large fluctuations in the DFL variable because the standard deviation value > mean. The highest DFL value is 49.31792 and the lowest DFL value is -4.105937.

4) Degree Operating Leverare (DOL)

   DOL has a mean value of 118.9327 and a standard deviation of 815.6334. Because the mean > standard deviation, there is no big fluctuation in the DOL variable. The highest value of DOL is 6025.945 and the lowest value of DOL is -165.3510.

5) Inflation

   The average (mean) inflation during 2017 to 2021 is 0.026020 or 2.6%, the standard deviation of inflation is 0.007409 or 0.7%. Because the mean > standard deviation, there is no significant fluctuation in the inflation variable.

The highest value of inflation is 0.036100 or 3.61% and the lowest value of inflation is 0.016800 or 1.68%.

Hosmer and Lemeshows Goodness of Fit Test

Table 2. Hosmer and Lemeshows Goodness of Fit Test

H-L Statistic	8.8066	Prob. Chi-Sq(8)	0.3589
Andrews Statistic	21.2188	Prob. Chi-Sq(10)	0.0196

Source: Processed Data Results Eviews 12

Based on the test results in table 2 shows that the value of the H-L statistic is 8.8066 with a significance probability of 0.3589 > 0.05, the model can be concluded to be able to predict the observed value.

Model Accuracy Test

Table 3. Expectation-Prediction Test

Expectation-Prediction Evaluation for Binary Specification
Equation: UNTITLED
Date: 09/25/22   Time: 21:05
Success cutoff: C = 0.5

	Estimated Equation			Constant Probability		
	Dep=0	Dep=1	Total	Dep=0	Dep=1	Total
P(Dep=1)<=C	38	11	49	40	15	55
P(Dep=1)>C	2	4	6	0	0	0
Total	40	15	55	40	15	55
Correct	38	4	42	40	0	40
% Correct	95.00	26.67	76.36	100.00	0.00	72.73
% Incorrect	5.00	73.33	23.64	0.00	100.00	27.27
Total Gain*	-5.00	26.67	3.64			
Percent Gain**	NA	26.67	13.33			

Source: Processed Data Results Eviews 12

In table 3 it can be seen that in the Estimated Equation column the total results from the percentage value of the correct prediction accuracy are obtained at 76.36%, which means that the percentage of model accuracy is acceptable.

Multicollinearity Test

Table 4. Multicollinearity Test

	LDER	DFL	DOL	INFLASI
LDER	1.000000	-4.67E-06	-0.113093	-0.099963
DFL	-4.67E-06	1.000000	-0.043039	-0.074149
DOL	-0.113093	-0.043039	1.000000	-0.166485
INFLASI	-0.099963	-0.074149	-0.166485	1.000000

Source: Processed Data Results Eviews 12

The multicollinearity test from the Output Correlation Matrix can be seen in table 4 that the correlation value between independent variables is less than 0.9,

it can be concluded that there is no multicollinearity problem because the relationship between variables is very weak or less than 0.9.

Logistics Regression Analysis

Table 5. Logistics Regression

Dependent Variable: FD
Method: ML - Binary Logit (Newton-Raphson / Marquardt steps)
Date: 09/25/22   Time: 20:52
Sample: 2017 2021
Included observations: 55
Convergence achieved after 5 iterations
Coefficient covariance computed using observed Hessian

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-2.900457	1.450270	-1.999943	0.0455
LDER	1.744757	0.664370	2.626180	0.0086
DFL	0.003720	0.048918	0.076037	0.9394
DOL	0.001026	0.001200	0.855360	0.3924
INFLASI	38.77866	47.78817	0.811470	0.4171

Source: Processed Data Results Eviews 12

Logistics Regression Equation :

$$Ln\frac{FD}{1-FD} = -2.900457 + 1.744757LDER + 0.003720DFL + 0.001026DOL + Inflation\ 38.77866 + e$$

Information :

FD : Financial Distress, a value of 1 if the company experiences potential financial distress, and a value of 0 if the company does not experience potential financial distress.

LDER : Longterm debt to equity ratio (capital structure)

DFL : Degree Financial Leverage

DOL : Degree Operating Leverage

Inflation : Inflation

e : Standard Error

Hypothesis Test Results

Table 6. Z Test Results Statistics

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-2.900457	1.450270	-1.999943	0.0455
LDER	1.744757	0.664370	2.626180	0.0086
DFL	0.003720	0.048918	0.076037	0.9394
DOL	0.001026	0.001200	0.855360	0.3924
INFLASI	38.77866	47.78817	0.811470	0.4171

Source: Processed Data Results Eviews 12

1) Effect of Capital Structure on Financial Distress

The results of hypothesis testing in table 6 show that the probability value of the LDER variable is 0.0086, the probability value is <0.05. So there is a significant effect of capital structure on financial distress. The LDER regression coefficient is 1.744757. The positive regression coefficient indicates a unidirectional relationship between capital structure and the potential for financial distress, meaning that any increase in the LDER ratio will increase the potential for financial distress of the company, whereas a decrease in the LDER ratio will reduce the potential for financial distress. An increase in the LDER ratio is an increase in debt in the company's capital structure, an increase in debt means an increase in company risk. The higher the risk, the company will potentially experience financial distress. The results of this study are in line with (Rahma & Dillak, 2021) who found that financial distress is positively influenced by capital structure. The results of this study are different from research (Fadhilah & Nurdin, 2020) which actually found a negative effect of capital structure on financial distress.

2) The Effect of Financial Leverage on Financial Distress

The probability value of the DFL variable is 0.9394, which is greater than the 5% significance, so there is no significant effect between the financial leverage variable and financial distress. The DFL regression coefficient is 0.003720, although not significant, a positive coefficient indicates a unidirectional relationship between financial leverage and potential financial distress. The results of this study are in line with research (Fadhilah & Nurdin, 2020) which found that financial leverage had no significant effect on financial distress. Another study conducted by (Nurriadianis & Adi, 2021) and (Moleong, 2017) found that Leverage had a significant effect on the possibility of companies experiencing financial distress.

3) The Effect of Operational Leverage on Financial Distres

Table 6 shows the DOL probability value of 0.3924, the probability value is > 0.05. So operating leverage does not significantly affect financial distress. Operating leverage has a direct relationship with financial distress because the regression coefficient is positive, namely 0.001026. The results of this study are different from studies (Nurriadianis & Adi, 2021) and (Moleong, 2017) which conclude that leverage significantly affects financial distress. The

results of this study are supported by research (Fadhilah & Nurdin, 2020) which also found that leverage has no significant effect on financial distress.

4) The Effect of Inflation on Financial Distress

Inflation does not significantly affect financial distress, it can be seen from the probability value of the inflation variable of 0.4171, the probability value is greater than the 5% significant level (0.4171 > 0.05). An increase or decrease in inflation will not affect the company's potential for financial distress, but inflation has a direct relationship with financial distress, this can be seen from the positive value of the inflation regression coefficient of 38.77866. Inflation has no significant effect on financial distress due to the relatively stable inflation rate during the study period (2017-2021). The average inflation is only 2.6%, so the increase in the price of goods such as raw materials or other capital goods is not too significant, so that inflation is not a factor that affects the company's financial distress. The results of this study are supported by (Nurriadianis & Adi, 2021) and (Kurniasanti & Musdholifah, 2018) who also found that there was no effect of inflation on financial distress.

CONCLUSION

Conclusions

Based on the results of the analysis, it can be concluded that the capital structure proxied by the long term debt to equity ratio (LDER) has a positive and significant effect on financial distress, financial leverage and operating leverage do not significantly affect financial distress but have a unidirectional relationship, inflation also has a significant relationship. unidirectional but not significantly affect financial distress.

Suggestions

Based on the results of this study, the authors provide the following suggestions :

1. For Companies

The results of the study indicate that the capital structure has a significant positive effect on financial distress, which means that additional debt will have an impact on the potential risk of financial distress. Companies need to

consider internal funding in order to minimize the risk of financial distress.

2. For Prospective Investors

Investors need to pay attention to the company's capital structure before investing, because the capital structure has a significant effect on the potential for financial distress. So it is necessary to consider between increased risk and increased company profitability.

3. For further researchers

a. The risk of financial distress is not only for companies in the automotive and component sectors, but also for other sectors that should be suspected of having financial distress risk. So that further researchers are expected to be able to conduct research in other industrial sectors.

b. Further researchers can examine other independent variables that are thought to affect financial distress such as investment decisions, profitability, corporate governance and others.

REFERENCES

Ahmad Khotim, D. d. (2014). Analisis Pembentukan Portofolio Optimal dengan menggunakan Model Indeks Tunggal dan Stochastic Dominance. *Jurnal Administrasi Bisnis*.

Akmalia, A. (2020). Pengaruh Struktur Modal, Struktur Aset dan Profitabilitas Terhadap Potensi Terjadinya Financial Distress Perusahaan (Studi Pada Perusahaan Manufaktur Sektor Aneka Industri Yang Terdaftar di Bursa Efek Indonesia Periode 2014-2017). *Business Management Analysis Journal (BMAJ), 3*(1), 1-21.

Bank Indonesia. (2022, Oktober 25). Retrieved from https://www.bi.go.id/id/fungsi-utama/moneter/inflasi/default.aspx#:~:text=Inflasi%E2%80%8B%E2%80%8B-,Definisi%20Inflasi%E2%80%8B%E2%80%8B,secara%20umum%20dan%20terus%20menerus.: https://www.bi.go.id/id/default.aspx

Fadhilah, S. N., & Nurdin. (2020). Pengaruh Financial Leverage, Struktur Modal, dan Total Asset Growth Terhadap Financial Distress. *Prosiding Manajemen, 6*(2), 865-871.

Garrison, N., & Brewer. (2013). *Akuntansi Manajerial (edisi 14).* Jakarta: Salemba Empat.

Halim, A. (2003). *Analisis Investasi.* Jakarta: Salemba Empat.

Hanafi, M. M. (2004). *Manajemen Keuangan.* Yogyakarta: BPFE-YOGRAKARTA.

Hapsari, L. C. (2013). Analisis Pembentukan Portofolio Optimal dengan Menggunakan Model Markowitz Untuk Saham LQ-45 Periode 2008-2012. *Jurnal Manajemen.*

Hartono, J. (2013). *Teori Portofolio dan Analisis Investasi.* Yogyakarta: BPFE-Yogyakarta.

Husnan, S. (2005). *Dasar-dasar teori Portofolio dan Analisi Sekuritas.* Yogyakarta: AMP YKPN.

Indonesia, B. (2022, Oktober). *https://www.bi.go.id/id/fungsi-utama/moneter/inflasi/default.aspx#:~:text=Inflasi%E2%80%8B%E2%80%8B-,Definisi%20Inflasi%E2%80%8B%E2%80%8B,secara%20umum%20dan%20terus%20menerus.* Retrieved from https://www.bi.go.id/id/default.aspx: https://www.bi.go.id/id/fungsi-utama/moneter/inflasi/default.aspx#:~:text=Inflasi%E2%80%8B%E2%80%8B-,Definisi%20Inflasi%E2%80%8B%E2%80%8B,secara%20umum%20dan%20terus%20menerus.

Indonesia, B. (2022, Oktober). *https://www.bi.go.id/id/fungsi-utama/moneter/inflasi/default.aspx#:~:text=Inflasi%E2%80%8B%E2%80%80%8B-,Definisi%20Inflasi%E2%80%8B%E2%80%8B,secara%20umum%20dan%20terus%20menerus.* Retrieved from https://www.bi.go.id/id/default.aspx: https://www.bi.go.id/id/fungsi-utama/moneter/inflasi/default.aspx#:~:text=Inflasi%E2%80%8B%E2%80%8B-,Definisi%20Inflasi%E2%80%8B%E2%80%8B,secara%20umum%20dan%20terus%20menerus.

Ismail, W., Tommy, P., & Untu, V. (2016). Pengaruh Current Ratio dan Struktur Modal Terhadap Laba Per Lembar Saham Pada Perusahaan Pertambangan Yang Terdaftar di BEI. *Jurnal Berkala Ilmiah Efisiensi, 16*(1), 469-480.

Kurniasanti, A. (2018). Pengaruh Corporate Governance, Rasio Keuangan Ukuran Perusahaan dan Makroekonomi Terhadap Financial Distress (Studi Pada

Perusahaan Sektor Pertambangan Yang Terdaftar di Bursa Efek Indonesia Tahun 2012-2016). *Jurnal Ilmu Manajemen, 6*(3), 197-212.

Kurniasanti, A., & Musdholifah, M. (2018). Pengaruh Corporate Governance, Rasio Keuangan, Ukuran Perusahaan dan Makro Ekonomi Terhadap Financial Distress. *Jurnal Ilmu Manajemen*, 197-212.

Maulida, I. S., Moehaditoyo, S. H., & Nugroho, M. (2018). Analisis Rasio Keuangan Untuk Memprediksi Financial Distress Pada Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Indonesia 2014-2016. *Jurnal Ilmiah Administrasi Bisnis dan Inovasi, 2*(1), 179-193.

Moleong, L. C. (2017). Pengaruh Real Interest Rate dan Leverage Terhadap Financial Distress. *MODUS, 30*(1), 71-86.

Mukodim, S. (2012). Pembentukan Portofolio Saham dengan Model Indeks Tunggal pada Perusahaan Perbankan di Bursa Efek Indonesia . *Jurnal manejemen*.

Ningsih, S., Husnan, L. H., & Suryani, E. (2021). Pengaruh Makro Ekonomi Terhadap Harga Saham Dengan Financial Distress Sebagai Variable Mediaasi : Studi Kasus Pada Kondisi Pandemi Covid-19. *Jurnal EMBA, 9*(2), 1206-1218.

Nurriadianis, S., & Adi, S. W. (2021). Pengaruh Mekanisme Corporate Governance, Financial Indicators, Inflasi dan Suku Bunga Terhadap Kemungkinan Perusahaan Mengalami Kondisi Financial Distress. *Proceeding Seminar Nasional & Call For Papers*, 706-720.

Platt, H. D., & Platt, M. B. (2002). Predicting Corporate Financial Distress: Reflections On Choice-Based Sample Bias. *Journal Of Economics And Finance, 26*(2), 184-199.

Rahayu, S. B. (2014). Analisis Pembentukan Portofolio Saham Menggunakan Model Indeks Tunggal Untuk pengambilan k=Keoutusan Investasi. *Jurnal Ekonomi dan Bisnis*.

Rahma, N. H., & Dillak, V. J. (2021). Pengaruh Struktur Modal, Ukuran Perusahaan, Sales Growth dan Intangible Asset Terhadap Financial Distress. *JIMEA (Jurnal Ilmiah MEA (Manajemen, Ekonomi, dan Akuntansi), 5*(3), 378-395.

Sutrisno. (2013). *Manajemen Keuangan Teori dan Aplikasi.* Yogyakarta: EKONISIA.

Syahyunan, S. d. (2013). Analisis Pembentukan Portofolio Optimal Saham dengan Model Indeks Tunggal (Studi pada Saham LQ-45 di Bursa Efek Indonesia). *Jurnal Manajemen*.

Tandelilin, E. (2001). *Analisis Investasi dan Manajemen Portofolio.* yogyakarta: BPFE-Yogyakarta.

Trihariyanto, R. R. (2013). Analisis Portofolio Optimal Berdasarkan Model Indeks Tunggal (Study kasus pada Saham Syariah di BEI). *jurnal Matematika*.