

Analysis of Financial Distress in Construction Companies with the Altman Method



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ABSTRACT: The Construction sector is one of the most affected by Covid-19, many companies are found to be bankrupt. This study used regression panel data with more than 30 observations. The variables analyzed are current ratio, DAR, ROA and sales growth. The results of the current ratio research have a positive effect with a significant coefficient of 1.292 on financial distress proxied with the Z-Score, meaning that the higher the liquidity value will be followed by the Z-score value so that financial difficulties are lower (negative). DAR has a positive effect on the value of the coefficient of 1.142 greater than 0.05 so that it is not significant or influential on financial difficulties proxied through the Z-Score, meaning that the size of leverage cannot be used as a reference to assess the financial difficulties experienced by the company. ROA has a positive effect with a coefficient of 5.377 and affects financial difficulties proxied through the Z-Score, meaning that the high profitability value will be followed by a high Z-score value so that financial difficulties will be lower (negative effect). Sales growth has a negative effect with a coefficient of -0.834 has no effect on financial difficulties proxied through the Z-Score, meaning that the size of sales growth cannot be used as a reference to assess the financial difficulties experienced by the company.

KEYWORDS: Current Ratio, DAR, ROA, Sales Growth, Financial Distress

I. INTRODUCTION

One of the sectors in Indonesia that has felt the impact of Covid-19 is the construction sector. One of the sectors that drives the growth of an economy. In 2020, the construction sector contracted. Experienced a growth of minus 5.67 percent during the fourth quarter of 2020. Overall, Indonesia's economic growth at the end of 2020 contracted by minus 2.19 percent. (Compass 2021).

If the company is allowed to continue, it will face financial difficulties. In principle, management is able to identify financial crises in time. This analysis must be done to anticipate this, so that bankruptcy can be avoided and the company can have a clearer picture of the company's position. The purpose of this analysis is to provide input or consideration to management in strategic decision making. Here are the company values from 2019 to 2021 shown in table 1:

Table 1 . Average Company Value 2019 – 2021

No.	Code	Emiten	Y	X1	X2	X3	X4
			Financial Distress	CR	DAR	ROA	SG
1	ACST	Acset Indonesia Tbk.	- 1,2348	1,5400	0,8033	-0,2767	-0,1300
2	ADHI	Adhi Karya (Persero) Tbk.	0,9998	1,1200	0,8400	0,0076	-0,0833
3	BUKK	Bukaka Teknik Utama Tbk.	5,0799	1,1900	0,4267	0,0933	-0,0267
4	DGIK	Nusa Konstruksi Enjirining Tbk.	1,4041	1,4600	0,4267	-0,0028	-0,2700
5	IDPR	Indonesia Pondasi Raya Tbk.	1,5118	1,5933	0,4900	-0,2678	0,0200
6	JKON	Jaya Konstruksi Manggala Pratama Tbk.	5,8255	1,6933	0,4067	0,0267	-0,0800
7	MTPS	Meta Epsi Tbk.	2,0954	3,6100	0,3333	-0,7033	-0,0233
8	NRCA	Nusa Raya Cipta Tbk.	6,7364	2,0567	0,4800	0,0367	-0,1100
9	PBSA	Paramita Bangun Sarana Tbk.	9,3150	3,2033	0,2500	0,0833	0,0367

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No.	Code	Emiten	Y	X1	X2	X3	X4
			Financial Distress	CR	DAR	ROA	SG
10	PPRE	PP Presisi Tbk.	1,6692	1,2633	0,5833	0,0567	0,0233
11	PTPP	PP (persero) Tbk.	1,0928	1,1900	0,7367	0,0167	-0,1100
12	SSIA	Surya Semesta Internusa Tbk.	4,6274	2,0167	0,4567	-0,0200	-0,1233
13	TOPS	Totalindo Eka Eka Persada Tbk.	1,3110	2,1067	0,6167	-0,0632	0,0533
14	TOTL	Total Bangun Persada Tbk.	2,5425	1,4967	0,6000	0,0600	-0,1400
15	WEGE	Wijaya Karya Bangunan Gedung Tbk.	2,0997	1,5333	0,6133	0,0567	0,1567
16	WIKA	Wijaya Karya (Persero) Tbk.	3,2287	1,1633	1,1600	0,0267	-0,1467
17	WSKT	Waskita Karya (Persero) Tbk.	3,7162	1,0800	2,3633	-0,1133	-0,3600

Table 1 shows companies that have the potential to go bankrupt are owned by companies Acset Indonusa, Adhi Karya, PP, Wijaya Karya Bangun Bangunan, because in the opinion of Altman Z-Score (1968) if the average value is less than 1.22 then the company has the potential to go bankrupt. Meanwhile, if the value of 1.22 is smaller than Z less than 2.99, then the company in the Grey Area is owned by Nusa Construction Engineering companies, Indonesia Pondasi Raya, Meta Epsi, PP Presisi, Totalindo Eka Persada. Healthy companies are Bukaka Teknik Utama, Jaya Konstruksi Manggala Pratama, Nusa Raya Cipta, Paramita Bangun Sarana, Surya Semesta Internusa, Total Bangun Persada, Wijaya Karya, Waskita Karya, because the company has a $Z > 2.99$.

Table 1 above also shows that liquidity is represented by the highest average current ratio of 3.6100 owned by Meta Epsi, while Waskita Karya, has the lowest average value of 1.0800. The variable leverage represented by the highest average DAR is owned by Waskita Karya (Persero) worth 2.3633, while the lowest average value of 1.1600 is owned by Wijaya Karya (Persero). The Profitability variable represented by ROA has the highest average value of 0.0933 owned by Bukaka Teknik Utama. While the lowest average belongs to Meta Epsi worth minus 0.7033. For the sales growth variable, Paramita Bangun Sarana has the highest average of 0.0367 while Waskita Karya (Persero) has the lowest average of minus 0.3600.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Signaling theory is a measure of corporate governance that guides investors about how the company's future prospects are viewed by management. Spence (1973) first introduced signal theory. Agency theory describes customer relationships as shareholders (shareholders with management representatives who are approved by shareholders to act in the interests of shareholders and must be accountable to shareholders for their work, Ambarwati (2014), Jensen and Meckling total all costs incurred by principals when controlling agents are called agency fees. Financial hardship is a condition in which finances decline before bankruptcy. According to Dirman's research (2020), financial distress is a condition where companies are in financial difficulties. When a company experiences financial difficulties, this is a consideration for investors and creditors who invest. Economic hardship forecasting was introduced by Edward Altman in 1968 and is called Altman's Z-score. The Altman Z-Score formula uses internal indicators, which are part of a company's financial statements, as a tool to predict a company's financial difficulties. A ratio is a formula that systematically controls a quantity based on the relationship or correlation between that quantity and some other quantity. According to Sofiani, (2010: 297) the ratio is a value that is determined then compared between one account and another account in financial statements that have important and significant relationships.

Description: Cashmere (2018: 104) that size is a function that calculates by comparing the numbers in the financial statements, the way it is divided between one number and another. Metrics are management tools for analyzing financial statements and evaluating company performance, allowing companies to reveal financial weaknesses or strengths, and making it easier for top management to direct and make financial decisions that are important to the company's future.

Hypothesis Development

The effect of liquidity ratios on financial difficulties.

The higher the liquidity, the lower the financial crisis point (negative effect), and the higher the liquidity, the higher the Altman Z-Score (positive effect). Based on the foregoing, the author formulates a hypothesis, namely:

H1: Liquidity is considered to negatively affect financial difficulties.

The effect of leverage on financial difficulties

The higher the leverage, the higher the financial difficulty score (positive effect), and the higher the leverage, the lower the Altman Z-score (negative effect). Based on the foregoing, the author formulates a hypothesis, namely:

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H2: Leverage is believed to have a positive effect on financial difficulties.

Impact of Profitability Figures on Financial Difficulties

The higher the profitability, the lower the economic noise score (negative effect), and the higher the profitability, the higher the Altman Z-score (positive effect). Based on the foregoing, the author formulates a hypothesis, namely:

H3: It is believed that profitability negatively affects financial difficulties.

The effect of sales growth on financial difficulties

The higher the sales growth, the lower the financial crisis score (negative effect), and the higher the sales growth, the higher the Altman Z score (positive effect). Based on the foregoing, the author formulates a hypothesis, namely:

H4: It is believed that increased sales negatively affect financial difficulties.

III. METHOD

A. Data types and sources

The study used a cross-sectional quantitative approach, which aimed to test the hypothesis between the influences of one or more independent variables on the dependent variable. The authors in this study, analyzed whether liquidity, leverage, profitability, and sales growth as independent variables can affect financial distress as dependent variables. Analysis of research data using regression panel data of more than thirty. Secondary data from the financial statements of construction service companies listed on the Indonesia Stock Exchange for 2019-2021 is the source of data used in this study.

B. Population and Sample

23 building construction subsector companies listed on the Indonesia Stock Exchange (IDX) in 2021 were used as populations in this study. Data taken from the company in the form of annual financial reports and records.

Table 2. Company Criteria

No.	Criteria	Number of Companies
1	Building Construction Sub-Sector Companies that are still listed on the Indonesia Stock Exchange (IDX) in the period 20 19 - 2021	22
2	Building Construction Sub-Sector Companies that are still listed on the Indonesia Stock Exchange (IDX) in the period 20 19 - 2021	5
	Selected Sample	17

This research data collection technique is by literature study. Secondary data for the type of data used in this study, the data is in the form of annual financial statements of building construction subsector companies published on the Indonesia Stock Exchange for 2019 - 2021 Exchange (IDX) www.idx.co.id, other libraries such as (journals, books, and previous research).

C. Regression Model Data Panel

To estimate whether the independent variable will affect financial distress, the model used is a random effect model (REM). The regression equation can be written as follows:

$$Y_{it} = \alpha + \beta X_{it} + e_{it}$$

$$e_{it} = \mu_i + V_t + W_{it}$$

IV. RESULT

The independent variables in this study consist of liquidity (current ratio), leverage (debt-asset ratio), profitability (return of assets), and sales growth. While the dependent variable is financial distress.

Table 3. Results of Descriptive Statistical Analysis of Research

	X1	X2	X3	X4
Average	1.724510	0.681569	-0.057818	-0.101961
Median	1.490000	0.570000	0.020000	-0.130000
Highest	5.930000	3.110000	0.130000	0.900000
Lowest	0.590000	0.230000	-2.110000	-0.690000
Std. Dev.	0.854790	0.498094	0.322690	0.341386
Observations	51	51	51	51

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There were 51 observations. X1, which is liquidity measured against the current ratio, is known to be the average generated at 1.7245. The lowest visible is 0.5900 and is owned by Waskita Karya (Persero) Tbk. in 2020 because current debt is greater than current assets. Meta Epsi Tbk has the largest value. In 2019 it was 5.930000, which means the company had good liquidity that year, - because it was able to meet its short-term obligations when it came. The standard deviation is 0.854790 and the median is 1.490000. The average value of variable leverage represented by DAR is 0.681569, the lowest value of 0.230000 is owned by Meta Epsi Tbk. Year 2019 means that the company's assets are financed with a low level of leverage, so that the influence of company debt on financial management is not too large. The highest value of 3.110000 belongs to Waskita Karya (Persero) Tbk. In 2020, most of the company's assets will be utilized, which has an impact on asset management. With a standard deviation of 0.498094 and a median of 0.570000.

The average value determined by the variable profitability ROA is minus 0.057818, the lowest value is minus 2.110000 owned by Meta Epsi Tbk. In 2021, it means that this year the company's wealth is not enough to make a profit. company to produce. The highest value of 0.130000 belongs to Paramita Bangun Sarana Tbk. Where in 2021 using funds from companies that are monitored to produce the best profits. With a standard deviation of 0.322690 and a median of 0.020000. In the variable revenue growth, the average value generated is minus 0.101961, and the lowest value of minus 0.690000 is owned by Acset Indonusa Tbk. This means that the company has not experienced growth or even a decrease in sales, so most likely the company cannot. to increase his assets this year. Totalindo Eka Persada Tbk has the highest score of 0.900000. Sales in 2021 were higher than sales in 2020 which experienced a decline, and in 2019. With a standard deviation of 0.341386 and a median of minus 0.130000..

Table 4. Best Panel Model Selection Results

Uji	Kriteria Uji	Hasil Pengujian	Kesimpulan
Regresi Panel (Pengaruh X1, X2, X3, X4 terhadap Y)			
Chow	Prob F	0,0000	Best FEM Models
Hausman	Prob Chi Sq	0,1291	Best Model REM
LM	Prob Chi Sq	0,0000	Best Model REM

Based on the table above, it is known that of the three tests, namely the Chow test, the Hausman test, the LM test, the best model is the best REM model.

Regression Testing Results

Table 5. Data Processing Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.032394	1.092060	0.029663	0.9765
X1	1.291655	0.368075	3.509214	0.0010
X2	1.142584	0.730984	1.563077	0.1249
X3	5.377052	0.698764	7.695084	0.0000
X4	-0.834370	0.419821	-1.987441	0.0528
Effects Specification				
			S.D.	Rho
Cross-section random			2.218803	0.8610
Idiosyncratic random			0.891411	0.1390
Weighted Statistics				
Root MSE	0.874938	R-squared	0.806699	
Mean dependent var	0.635562	Adjusted R-squared	0.789890	
S.D. dependent var	2.009833	S.E. of regression	0.921263	
Sum squared resid	39.04136	F-statistic	47.99259	
Durbin-Watson stat	1.861855	Prob(F-statistic)	0.000000	

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Unweighted Statistics

R-squared	0.466557	Mean dependent var	2.812800
Sum squared resid	306.3600	Durbin-Watson stat	0.237268

The conclusion of the table above is that panel regression model testing shows an R-squared of 0.4665 or 46.65%, meaning that the influence of variables in this study is 46.65% and the remaining 53.35% is influenced by variables other than the variables of this study. This regression model has a Prob (F-statistic) value of 0.000000, hypothesis H_0 : there is no influence between X to Y (Prob > 0.05) and H_a : There is an influence of X on Y (Prob < 0.05), so that from the value of Probability F the statistic above the result is H_a : that is, there is an influence between X to Y because Prob is smaller than 0.05.

X1 and X3 are influential because less than 0.05 together the independent variables (liquidity, leverage, profitability, and sales growth) are significant to the dependent variable (Financial distress).

Influence Test Analysis

1) The effect of liquidity (current ratio) on the company's financial difficulties

The results of testing the hypothesis about the effect of liquidity variables (current ratio) on financial difficulties, that liquidity has a coefficient number of 1.2916, while the significance number of 0.0010 means H_0 : rejected and H_1 : accepted so liquidity has an effect on financial distress.

Based on the results of observations of the condition of building industry subsector companies in 2019 – 2021, it turns out that the liquidity variable with a coefficient of 1.292 has a positive effect and a significance figure of 0.0010 is less than 0.05 (significant) for financial distress proxied with the Altman z-score. The higher the current ratio, the lower the financial difficulty (negative effect). The higher the current ratio, the greater the z-score (positive effect). High liquidity (current ratio) is one of them due to high ROA, where ROA describes the condition of a company that can make good use of existing assets for production. Effective and efficient management of company assets can lead to excellent profits. High liquidity value indicates that a company will be better so that the company is considered to be able to pay its short-term obligations, this condition indicates that the company is far from a difficult situation. The results of this study are in accordance with the results of research (Fauzy et al., 2019), (Ong et al., 2017), (Zaki et al., 2020), (Swara, 2021), (Pavlicko et al., 2020), (Pavlicko et al. al., 2021).

2) The effect of leverage (debt-asset ratio) on the company's financial difficulties

The results of testing the hypothesis on the effect of leverage (debt-asset ratio) on financial difficulties show that leverage has a coefficient number of 1.1426 with a significance of 0.1249 meaning H_0 : accepted and H_1 : rejected so that leverage has no effect on financial distress.

Based on observations of the condition of building industry subsector companies in 2019-2021, leverage (DAR) has no effect on the financial difficulties proxied by the Altman Z-score. The results of the hypothesis test with a significance number of 0.125 higher than 0.05 mean that it is not significant with a coefficient of 1.142 indicating a positive relationship. The higher the DAR score, followed by high financial hardship (positive influence), the higher the DAR score, the greater the z-score (negative affect). Debt to asset ratio is a ratio where the amount of assets owned by a company where the assets are financed by debt. The greater the value of this ratio, the higher the risks and liabilities owned by the company. This research is in accordance with the results of the study (Ayuningtyas et al., 2019), (Sutra & Mais, 2019), (Sidiq et al., 2020), (Silvia et al., 2022), (Pratiwi et al., 2022).

3) The effect of profitability (return of assets) on the company's financial difficulties

The results of testing the hypothesis about the effect of profitability (return of assets) on financial difficulties show that profitability has a coefficient number of 5.3771 with a significance of 0.000 meaning H_0 : rejected and H_1 : accepted so profitability has an effect on financial distress.

The results of observations on the condition of building industry subsector companies in 2019 – 2021, the profitability variable with a coefficient value of 5.3771 has a positive and significant influence on financial difficulties proxied using the Altman Z-score. The result of the hypothesis test is lower than 0.05 which is 0.000. High ROA will affect the low value of financial distress (negative influence), the greater the ROA value, the greater the z-score value (positive influence). The research results are in line with the results of research by (Jaafar et al., (2018), (Dirman, 2020), (Rakshit et al., 2020), (Yan et al., 2020), (Wu et al., 2020), (Swara, 2021), (Ratuela et al., 2022) The high value of Return on assets in a company illustrates that the company is far from financial difficulties because it can generate maximum profits.

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4) The Effect of Sales Growth on the Company's Financial Difficulties

The results of testing the hypothesis about the effect of sales growth on financial difficulties show that sales growth has a coefficient number of -0.8344 with a significance of 0.0528 meaning H0: accepted and H1: rejected so that sales growth has no effect on financial difficulties.

Based on the observations of building construction industry subsector companies in 2019 – 2021, sales growth has no effect on financial difficulties. It can be seen from the results of the hypothesis test with a significance of 0.053 higher than 0.05 and has a coefficient of -0.834 which indicates a negative relationship relationship. The greater the sales growth, the lower (negative effect) the value of financial distress, and the higher the z-score (positive effect). The results of this study are in line with the results of research (Suryani, 2020), (Zaki et al., 2020), (Swara, 2021), (Prayuningsih et al., 2021), (Ratuela et al., 2022). Sales growth does not affect financial difficulties because if the high and low sales growth of a company is not followed by an increase in company profits, so that the profits generated do not make a large contribution to the company's financial condition (Suryani, 2020).

Sales growth will negatively affect financial hardship when the significance > 0.1. The higher the sales growth rate, the lower the value of financial distress (negative effect). The higher the sales growth value, the greater the z-score (positive effect).

V. CONCLUSION

Based on the results of research and discussion, results were obtained, namely:

1. Liquidity (current ratio) has a positive and significant influence on financial distress represented by the Z-Score. The greater the liquidity score will be followed by the greater the Z-score value so that financial distress will be smaller (negative effect) so that the company avoids financial difficulties.

2. Leverage (DAR) has a positive and insignificant effect on financial distress represented by the Z-Score. The amount of leverage cannot be used as a measure to assess the financial difficulties experienced by a company.

3. Profitability (ROA) has a positive and significant influence on financial distress using Z-Score. The greater the profitability value, the greater the Z-score value so that financial distress is smaller (negative effect) so that the company avoids financial problems.

4. Sales growth has a negative and insignificant influence on financial distress as indicated by the Z-Score, so the value of sales growth cannot be used as a reference to assess the financial difficulties experienced by the company

REFERENCES

- 1) Ayuningtiyas, I. S. (2019). PENGARUH LIKUIDITAS , PROFITABILITAS , LEVERAGE DAN ARUS KAS. *Jurnal Ilmu Dan Riset Akuntansi*.
- 2) Bukhori, I., Kusumawati, R., & Meilani, M. (2022). Prediction of Financial Distress in Manufacturing Companies: Evidence from Indonesia. *Journal of Accounting and Investment*, 23(3), 588–605. <https://doi.org/10.18196/jai.v23i3.15217>
- 3) Carolina, V., Marpaung, E. I., & Pratama, D. (2018). Analisis Rasio Keuangan untuk Memprediksi Kondisi Financial Distress (Studi Empiris pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia Periode 2014-2015). *Jurnal Akuntansi Maranatha*, 9(2), 137–145. <https://doi.org/10.28932/jam.v9i2.481>
- 4) Dharma Swara, R. A. (2021). Pengaruh Rasio Keuangan Terhadap Financial Distress pada Perusahaan Sub Sektor Bangunan Konstruksi yang Terdaftar di Bursa Efek Indonesia Tahun 2017 – 2019. *Jurnal Health Sains*, 2(10), 1960–1068. <https://doi.org/10.46799/jsa.v2i10.328>
- 5) Dirman, A. (2020). Financial Distress: The Impacts Of Profitability, Liquidity, Leverage, Firm Size, And Free Cash Flow. *International Journal of Business, Economics and Law*, 22(1), 1.
- 6) Fauzy, M., Astuti, S., & Kusumawardhani, I. (2019). Analisis Faktor-Faktor yang Mempengaruhi Financial Distress pada Perusahaan Sektor Property, Real Estate, dan Building Construction di Indonesia. *Jurnal Akuntansi Bisnis Dan Ekonomi*, 5(2), 1411–1422. <https://doi.org/10.33197/jabe.vol5.iss2.2019.311>
- 7) Ong'era, J. B., Muturi, W., Oluoch, O., & Karanja, J. N. (2017). Leverage as Financial Antecedent to Financial Distress among Listed Companies at Nairobi Securities Exchange. *Research Journal of Finance and Accounting*, 8(6), 95–104.
- 8) Pavlicko, M., Durica, M., & Mazanec, J. (2021). Ensemble model of the financial distress prediction in visegrad group countries. *Mathematics*, 9(16). <https://doi.org/10.3390/math9161886>
- 9) 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.
- 10) Rakshit, D., & Paul, A. (2020). Earnings Management and Financial Distress: An Analysis of Indian Textile Companies.

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Journal of Economics and Public Policy, 5(3), 40–53.

- 11) Ratuela, G. J., Kalangi, L., & Warongan, J. D. L. (2022). Pengaruh Profitabilitas, Sales Growth, Likuiditas, Dan Leverage Terhadap Financial Distress Pada Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Indonesia Tahun 2018-2020. 13(1), 113–125.
- 12) Silvia, D., & Yulistina, Y. (2022). Pengaruh Current Ratio, Return On Asset, Debt To Asset terhadap Financial Distress Selama Masa Pandemi. Global Financial Accounting Journal, 6(1), 89. <https://doi.org/10.37253/gfa.v6i1.6528>
- 13) Suryani. (2020). Pengaruh Profitabilitas, Likuiditas, Leverage, dan Ukuran Perusahaan Terhadap Financial Distress. Jurnal Online Insan Akuntan, 5(2), 229–244.
- 14) Sutra, F. M., & Mais, R. G. (2019). FAKTOR-FAKTOR YANG MEMPENGARUHI FINANCIAL DISTRESS DENGAN PENDEKATAN ALTMAN Z-SCORE PADA PERUSAHAAN PERTAMBANGAN YANG TERDAFTAR DI BURSA EFEK INDONESIA TAHUN 2015-2017. Jurnal Akuntansi Dan Manajemen, 16, 35–72.
- 15) Wu, L., Shao, Z., Yang, C., Ding, T., & Zhang, W. (2020). The impact of CSR and financial distress on financial performance-evidence from chinese listed companies of the manufacturing industry. Sustainability (Switzerland), 12(17). <https://doi.org/10.3390/SU12176799>
- 16) Yan, D., Chi, G., & Lai, K. K. (2020). Financial distress prediction and feature selection in multiple periods by lassoing unconstrained distributed lag non-linear models. Mathematics, 8(8). <https://doi.org/10.3390/MATH8081275>
- 17) Yuda Pratiwi, E., & Sudiyatno, B. (2022). Pengaruh likuiditas, leverage, dan profitabilitas terhadap financial distress. Fair Value: Jurnal Ilmiah Akuntansi Dan Keuangan, 5(3), 1324–1332. <https://doi.org/10.32670/fairvalue.v5i3.2459>
- 18) Zaki, W. S., Sukesti, F., Alwiyah, & Sinarasri, A. (2020). Pengaruh Likuiditas, Profitabilitas, Leverage, Sales Growth, dan Kepemilikan Institusional Terhadap Financial Distress (Studi Kasus Pada Perusahaan Sub Sektor Hotel, Restoran, dan Pariwisata di Bursa Efek Indonesia Periode 2014-2019). Prosiding Seminar Nasional Unimus, 3, 1063–1073. <http://repository.unimus.ac.id/id/eprint/5465>



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