

# Determinants of Financial Distress During COVID-19

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## ABSTRACT

This study aims to analyze the effect of liquidity, leverage, profitability, sales growth, and operating capacity on financial distress during the COVID-19 period. Quantitative research is used using secondary data with purposive sampling method involving 55 hotel, restaurant, tourism, and transportation companies taken from financial statement on IDX. The research methods used are multiple linear regression analysis and analyzed utilizing IBM SPSS. This study during COVID-19 carries out that leverage has an effect on financial distress, while liquidity, profitability, sales growth and operating capacity have an insignificant effect on financial distress.

**Keywords:** *financial distress; liquidity; leverage; profitability; sales growth; operating capacity*

## 1. INTRODUCTION

At the end of 2019, the world was shocked by COVID-19, or Coronavirus Disease, which is a virus that can infect the respiratory system with symptoms of fever, cough, runny nose, and difficulty breathing [1]. This virus spreads very fast and has spread throughout the world, therefore, the COVID-19 Outbreak is officially designated by the World Health Organization (WHO) as a global pandemic on March 11, 2020 [2].

This research was conducted to determine the impact of COVID-19 pandemic on the financial condition of the Hotels, Restaurants, Tourism, and Transportation industry as the two most affected sub-sector companies in Indonesia. The drastic decline of each sector can be proven through data in April 2020, where tourism sector has suffered a loss of 85.7 trillion, with details of the hotel sector 30 trillion, restaurants 40 trillion, airlines 11.7 trillion, and tour operators 4 trillion [3].

The sharp decline based on the data above requires management to be vigilant as it indicates financial distress in the company. There are five variables used as a reference for calculations, including Liquidity, Leverage, Profitability, Sales Growth, and Operating Capacity.

Liquidity measures a company's capacity to fulfil its short-term debts by utilizing its current assets [4]. Previous research found that liquidity had a significant effect on financial distress [5-11]. However, the research conducted by [4], [12-13] find that liquidity has an insignificant effect on financial distress.

Leverage measures how a company could survive in the long-term using debt [24]. Previous research found that leverage is influential significant to financial distress [5-9], [11-15]. However, based on the research conducted by [4], [13], leverage has no significant effect on financial distress.

Profitability is the ability to generate profits as a measurement of success or failure of a company [24].

Several previous studies carried out by [4-9], [12-13] show that Profitability has a significant effect on financial distress. However, [10-11] found that profitability has no significant effect on financial distress.

Sales growth shows the ups and downs of company sales in a certain year [15]. Based on previous research, Sales Growth has a significant effect on financial distress [16-17]. However, [12], [15] find that sales growth has no significant effect on financial distress.

Operating Capacity measures the effectiveness of a company in generating sales with all its assets [16]. Several previous studies show that Operating Capacity has a significant effect on financial distress [5], [11], [16-18]. However, the results of research conducted by [9], [13] found that operating capacity had no significant effect on financial distress.

The inconsistency of the research results above, as well as the conditions during the COVID-19 pandemic, made this research more interesting in order to obtain significant results. This study focused on empirical evidence to examine the effect of liquidity, leverage, profitability, sales growth, and operating capacity on financial distress during COVID-19 pandemic.

## **2. LITERATURE REVIEW**

Signalling theory explains how relevant information can be used by external parties for their interests in making decisions [19]. The executive is assumed to hold accurate information about the company and will be a guide for potential investors regarding the outlook on the company's prospects [20]. Financial statements could be the signal given by the company to potential investors as a picture of the past, present and future regarding company's financial condition and viability [21].

### **2.1. Financial Distress**

Financial distress arises when a company is incapable to manage and sustain the stability of its financial performance and is on the threat of liquidation. The condition of how healthy a company is can be measured and described through their financial statements [21].

### **2.2. Liquidity**

Liquidity measures the company's ability to pay off its current liabilities using the company's current assets. Without sufficient liquid assets, the company won't be able to operate normally.

### **2.3. Leverage**

Leverage measures the amount of a company's assets funded by debt. High level of leverage ratio indicates the large source of funding originating from external parties.

### **2.4. Profitability**

Profitability measures the company's capability to generate profits through sales revenue earned. The higher the profit generated means the better the productivity of assets in generating net income.

### **2.5. Sales Growth**

Sales growth describes a company's sales from year to year. High sales growth portrays the company's competence to maintain its operational continuity [17].

### **2.6. Operating Capacity**

Operating Capacity shows company's effectiveness in managing assets to generate profits. High operating capacity means that the company has managed its assets effectively and indicates an increasing level of company sales [17].

### **3. RESEARCH MODEL AND HYPOTHESES DEVELOPMENT**

#### ***3.1. The Effect of Liquidity as Measured by Current Ratio on Financial Distress***

The beginning of a company entering the financial distress stage is caused by liquidity problems experienced by the company, and if no action is taken, then bankruptcy can occur [18]. A high liquidity ratio indicates the company has sufficient liquid assets to pay off its current liabilities, and the less likely they are to experience financial distress during the COVID-19 period [4].

According to signalling theory, company with high level of liquidity is a good signal for users of financial statements as it describes the company's good financial condition [19].

**H<sub>1</sub>:** *Liquidity has a negative effect on Financial Distress*

#### ***3.2. The Effect of Leverage as Measured by Debt to Assets Ratio on Financial Distress***

Companies with better access to funding sources tend to rely on capital obtained from external parties to finance their operational activities and generate profits so as to avoid financial distress [22].

High level of leverage can certainly harm the company, however, if the company manager can manage and succeed on utilizing external funds effectively and efficiently during the COVID-19 period, it is considered that the company's performance can increase hence financial distress can be avoided [21]. In accordance with signalling theory, this situation provides good signal for investors as they will be more convinced to put up more funds.

**H<sub>2</sub>:** *Leverage has a negative effect on Financial Distress*

#### ***3.3. The Effect of Profitability as Measured by Return on Assets on Financial Distress***

The higher the profit generated means the better the productivity of assets in generating net income. Thus, the company can pay off its debts and the possibility of experiencing financial distress is lower [23].

Signalling theory suggests a company with high profitability shows that its financial condition is more stable and this provides good news for users of the company's financial statements [22]. Therefore, the higher the profit earned during the COVID-19 period, the less likely it is for company to encounter financial distress.

**H<sub>3</sub>:** *Profitability has a negative effect on Financial Distress*

#### ***3.4. The Effect of Sales Growth on Financial Distress***

High sales growth during the COVID-19 period reflects the company's capability in maintaining its operational continuity [17] and indicates a healthy financial condition in which financial distress can be avoided. In line with signalling theory, this is a good signal for investors and creditors [19].

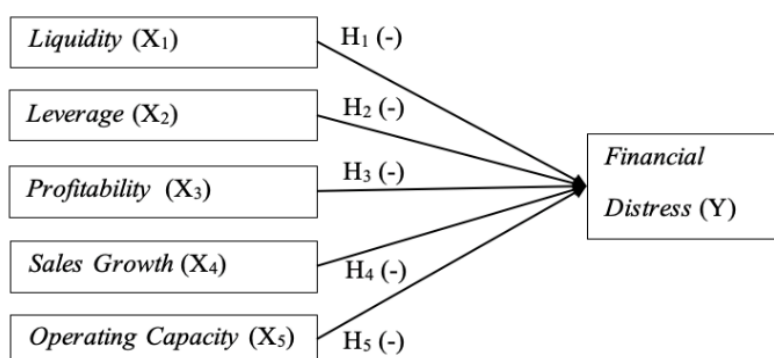
**H<sub>4</sub>:** *Sales Growth has a negative effect on Financial Distress*

#### ***3.5. The Effect of Operating Capacity as Measured by Total Asset Turnover on Financial Distress***

High operating capacity shows the company has managed its assets effectively and indicates an increasing level of company sales [17]. In order to raise sales, managers are expected to make the fullest use of assets for operational activities [22]. The higher the operating capacity during the COVID-19 period, the more effective the use of total assets in generating sales, and the smaller the risk of the company experiencing financial distress [16]. This is a good signal that attracts third parties as the company's financial statement shows a good financial condition.

**H<sub>5</sub>:** *Operating Capacity has a negative effect on Financial Distress*

The research model of this study as presented in Figure 1 below:



**Figure 1** The Research Model

#### 4. RESEARCH METHOD

In this study, the population used is all hotel, restaurant, tourism, and transportation sub-sector companies listed on the Indonesia Stock Exchange for the 2020 period. Purposive sampling technique is used, resulting in 55 samples which was in accordance with the following sample criteria: (1) Companies in the hotel, restaurant, tourism, and transportation sub-sectors listed on the IDX respectively during the 2019-2020 period; (2) Companies in the hotel, restaurant, tourism, and transportation sub-sectors that experience financial distress according to the Altman Z-score analysis model in the 2020 period. Data used in this study is secondary data, namely the company's financial statements as of December 31, 2019-2020. The research methods used are multiple linear regression analysis and analyzed utilizing IBM SPSS software. As presented in Table 1, following shows the operationalization of this research's variables:

**Table 1** The Operationalization of Research Variables

Variables	Description	Adopted From	Scale
Financial Distress	$Z - score = 1.2T1 + 1.4T2 + 3.3T3 + 0.6T4 + 1.0T5$	Jaafar et al. (2018)	Ratio
Liquidity	$LIQ = \frac{Current\ Asset}{Current\ Liabilities}$	Jaafar et al. (2018)	Ratio
Leverage	$LEV = \frac{Total\ Liabilities}{Total\ Asset}$	Jaafar et al. (2018)	Ratio
Profitability	$PRF = \frac{Net\ Income}{Total\ Asset}$	Jaafar et al. (2018)	Ratio
Sales Growth	$GRW = \frac{Sales\ Year\ 2 - Sales\ Year\ 1}{Sales\ Year\ 1}$	Jaafar et al. (2018)	Ratio
Operating Capacity	$TATO = \frac{Net\ Sales}{Total\ Asset}$	Putri (2021)	Ratio

Based on the hypothesis above, the regression equations formed:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon \dots \dots \dots (1)$$

Note:

- Y : Altman Z-Score Financial Distress
- $\beta_0$  : Constant
- $X_1$  : Liquidity
- $X_2$  : Leverage
- $X_3$  : Profitability
- $X_4$  : Sales Growth
- $X_5$  : Operating Capacity
- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$  : Regression coefficients
- $\epsilon$  : Error

## 5. RESULTS

Financial Distress as the dependent variable, proxied by Beta of Companies, has a maximum value of 2.96094, minimum value of -22.38634, mean value of -0.13245 and standard deviation of 3.95390916. The first independent variable is liquidity, Current Ratio as a proxy, has a maximum value of 140.24520, minimum value of 0.03483, mean value of 4.34477 and standard deviation of 18.92818. The second independent variable is leverage as proxied by Debt to Asset Ratio, has a maximum value of 3.13860, minimum value of 0.00145 mean value of -0.061051 and standard deviation of 0.56831. The third independent variable, profitability proxied by Return on Assets has a maximum value of 0.66196, minimum value of -0.45302, mean value of -0.06135 and a standard deviation of 0.14614. The fourth independent variable, sales growth proxied by Annual Percentage in Sales has a maximum value of 2.19814, minimum value of 0.00058, mean of -0.22728 and a standard deviation of 1.24965. The fifth independent variable is operating capacity as a proxy for Total Asset Turnover has a maximum value of 8.57451, minimum value of -1.00000, mean of 0.34592 and a standard deviation of 0.41500.

The data used in this study is cross-sectional, hence classical assumption test is performed. In the Normality test, the significance value is  $0.340 > 0.05$ , showing a normally distributed data. In the Multicollinearity test, all variables have a tolerance value  $> 0.1$  and VIF value of  $< 10$ , which concludes there are no multicollinearity problems. In the Heteroscedasticity test, all variables have a significant value of 0.05, therefore it is concluded that there is no heteroscedasticity. In the Autocorrelation test using Runs Test, result shows a value of  $0.890 > 0.05$  which means there is no autocorrelation. The Adjusted R-Square shows a value of 0.526, which explains the independent variables in this research are able to explain financial distress as a dependent variable of 52,6%. The F test shows a significant value of 0.000 thus each independent variables in this study have a significant effect on the dependent variable simultaneously. The t test results show that leverage has a negative and significant effect on financial distress. Table 2 and 3 shows the results of descriptive statistical and hypotheses testing:

**Table 2** The Results of Descriptive Statistics

Variables	N	Min	Max	Mean	Standard Deviation
Financial Distress	55	-22.38634	2.96094	0.13245	3.95391
Liquidity	55	0.03483	140.24520	4.34477	18.92818
Leverage	55	0.00145	3.13860	-0.061051	0.56831
Profitability	55	-0.45302	0.66196	0.06135	0.14614
Sales Growth	55	0.00058	2.19814	-0.22728	1.24965
Operating Capacity	55	-1.00000	8.57451	0.34592	0.41500

**Table 3** The Results of Hypothesis Testing

Variable	Coefficient	Sig. Value	Results
Liquidity (CR)	-0.010	0.631	H <sub>1</sub> is rejected
Leverage (DAR)	-5.457	0.000	H <sub>2</sub> is supported
Profitability (ROA)	-4.763	0.103	H <sub>3</sub> is rejected
Sales Growth	-0.074	0.807	H <sub>4</sub> is rejected
Operating Capacity (TATO)	-1.015	0.293	H <sub>5</sub> is rejected

The regression analysis model is obtained as follow:

$$Y = 3.284 - 0.010 LIQ - 5.457 LEV - 4.763 PRF - 0.074 GRW - 1.015 TATO + \varepsilon \dots\dots\dots (1)$$

## 6. DISCUSSION

Based on the results obtained and generated from this study, there are several discussions concluded. First, liquidity has a negative and insignificant effect on financial distress, so the first hypothesis is rejected. High or low levels of liquidity aren't able to reflect good or bad a company's condition are in during the COVID-19 period. This finding are in accord with previous research by [4], [12-13]. Second, leverage has a negative and significant effect on financial distress, so the second hypothesis is accepted. High leverage indicates that companies with better access to funding sources have more opportunities to have a higher level of funding in funding their assets so as to avoid financial distress. The results of this study are consistent with the finding of [6-9], [11-15]. Third, profitability has a negative and insignificant effect on financial distress, so the third hypothesis is rejected. Low profitability has not been able to affect the results of the study because this research was carried out during the COVID-19 period with a limited period of time, namely from March to December 2020. Companies can still meet its debts and other costs by using thier internal and external funds [22]. The finding of this study are consistent with previous research carried out by [10-11]. The test results show that sales growth has a negative and insignificant effect on financial distress, so the fourth hypothesis is rejected. The declining sales growth during the COVID-19 period in 2020 was temporary due to the lockdown and the imposed Large-Scale Social Restrictions (PSBB). The results are in accord with previous research carried out by [12], [15]. Lastly, the test result of operating capacity shows a negative and insignificant effect on financial distress, so the fifth hypothesis is rejected. No matter how effective the use of company assets is in producing a high level of operating

capacity, it will not guarantee that the company's financial condition is safe from financial distress due to the drastic decrease in the number of visitors and passengers in hotels, restaurants, tourism, and transportation during the COVID-19 period in 2020. The finding of this study is in accordance with previous research conducted by [9], [13].

## 7. CONCLUSION

Based on the main objective of this study in analyzing and empirically testing the relationship of the independent variables, liquidity, profitability, sales growth, and operating capacity, to the dependent variable financial distress, there are several conclusions that can be drawn from the results of tests that have been conducted using a confidence level of 95%. First, the dependent variable of financial distress is proven to be affected by the independent variables, liquidity, leverage, profitability, sales growth, and operating capacity simultaneously. Second, the test results in this study shows a negative and significant influence between the leverage variable on financial distress. However, there are no significant effect between liquidity, profitability, sales growth, and operating capacity on financial distress partially. This study has several limitations that are expected to be improved and updated in future research. First, this research uses five independent variables, without control variables. Second, the sample used is limited to hotels, restaurants, tourism and transportation sub-sector companies which consist of only 55 samples. Third, the research period is only one year, namely during the COVID-19 period in 2020. Therefore, some suggestions that can be given to further research are to use other ratios or add independent variables and control variables such as operating cash flow, firm size, capital structure, capital intensity, inflation rate, or corporate governance, as well as increasing the research time period before the COVID-19 period in order to compare the company's financial distress conditions before and after the pandemic. As for company management, especially those with a high level of leverage, it is expected that debt can be managed properly to avoid financial distress. In addition, this research is expected to be used as a reference material and considerations regarding the company's financial condition in order to minimize the occurrence of financial distress by managing company's finances properly. For investors, this research is expected to provide an overall picture of a company's financial condition before making decisions such as investing by considering the factors that affect financial distress.

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## REFERENCES

- [1] "Coronavirus," *Wikipedia*, 01-Sep-2021. [Online]. Available: <https://www.wikipedia.org/>. [Accessed: 03-Feb-2022].
- [2] "Who director-general's opening remarks at the media briefing on COVID-19 - 11 march 2020," *World Health Organization*. [Online]. Available: <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>. [Accessed: 03-Sep-2021].
- [3] E. Wahyudi, "Phri: Sektor Pariwisata Rugi RP 85,7 triliun akibat pandemi," *Tempo*, 03-Sep-2021. [Online]. Available: <https://bisnis.tempo.co/read/1365055/phri-sektor-pariwisata-rugi-rp-857-triliun-akibat-pandemi>. [Accessed: 03-Feb-2022].

- [4] A. Dirman, "Financial Distress: The Impacts of Profitability, Liquidity, Leverage, Firm Size, and Free Cash Flow," *International Journal of Business, Economics and Law*, vol. 22, no. 1, pp. 17–25, 2020.
- [5] P. I. M. Susilowati, and M. R. Fadlillah, "Faktor-Faktor Yang Mempengaruhi Financial Distress Pada Perusahaan Manufaktur Di Indonesia," *Jurnal AKSI (Akuntansi Dan Sistem Informasi)*, vol. 4, no. 1, pp. 19–28, 2019.
- [6] A. Mappadang, S. Ilmi, W. S. Handayani, and A. Indrabudiman, "Faktor-Faktor Yang Mempengaruhi Financial Distress pada Perusahaan Transportasi," *Jurnal Riset Manajemen Dan Bisnis (JRMB) Fakultas Ekonomi UNIAT*, vol. 4, no. 1, pp. 683–696, 2019.
- [7] R. T. Ariska, M. Arief, and Prasetyono, "The Effect of Gender Diversity and Financial Ratios on Financial Distress in Manufacturing Companies Indonesia," *International Journal of Economics, Business and Accounting Research (IJEBAR)*, vol. 5, no. 1, pp. 332–338, 2021.
- [8] Y. Yusbardini, and R. Rashid, "Prediksi Financial Distress Dengan Pendekatan Altman Pada Perusahaan Manufaktur di Indonesia," *Jurnal Muara Ilmu Ekonomi Dan Bisnis*, vol. 3, no. 1, p. 122, 2019. DOI: <https://doi.org/10.24912/jmieb.v3i1.3543>
- [9] S. Rahmayanti, and U. Hadromi, "Analisis Financial Distress Pada Perusahaan Manufaktur Yang Terdaftar di Bursa Efek Indonesia," *Jurnal Akuntansi Dan Ekonomika*, vol. 7, no. 1, pp. 53-63, 2017.
- [10] A. Zhafirah, and Majidah, "Analisis Determinan Financial Distress (Studi Empiris Pada Perusahaan Subsektor Tekstil dan Garmen Periode 2013–2017)," *Jurnal Riset Akuntansi Dan Keuangan*, vol. 7, no. 1, pp. 195–202, 2019.
- [11] M. A. Hidayat, and W. Meiranto, "Prediksi Financial Distress Perusahaan Manufaktur di Indonesia," *Diponegoro Journal of Accounting*, vol. 3, no. 3, pp. 538-548, 2014.
- [12] M. N. Jaafar, A. A. Muhamat, S. F. S. Alwi, N. A. Karim, and S. binti A. Rahman, "Determinants of Financial Distress among the Companies Practise Note 17 Listed in Bursa Malaysia," *International Journal of Academic Research in Business and Social Sciences*, vol. 8, no. 11, pp. 800–811, 2018.
- [13] T. Restianti, and L. Agustina, "The Effect of Financial Ratios on Financial Distress Conditions in Sub Industrial Sector Company," *Accounting Analysis Journal*, vol. 7, no. 1, pp. 25-33, 2018. DOI: <https://doi.org/10.15294/aaj.v7i1.18996>
- [14] D. Yazdanfar, and P. ÖHman, "Financial distress determinants among SMEs: empirical evidence from Sweden," *Journal of Economic Studies*, vol. 47, no. 3, pp. 547–560, 2020. DOI: <https://doi.org/10.1108/jes-01-2019-0030>
- [15] R. V. D. Giarto, and F. Fachrurrozie, "The Effect of Leverage, Sales Growth, Cash Flow on Financial Distress with Corporate Governance as a Moderating Variable," *Accounting Analysis Journal*, vol. 9, no. 1, pp. 15–21, 2020. DOI: <https://doi.org/10.15294/aaj.v9i1.31022>.
- [16] P. A. D. W. Putri, "The Effect of Operating Cash Flows, Sales Growth, and Operating Capacity in Predicting Financial Distress," *International Journal of Innovative Science and Research Technology*, vol. 6, no. 1, pp. 638–646, 2021.
- [17] R. D. Handayani, A. Widiastara, and N. Amah, "Pengaruh Operating Capacity dan Sales Growth Terhadap Financial Distress Dengan Profitabilitas Sebagai Variabel Moderating," *Seminar Inovasi Manajemen, Bisnis Dan Akuntansi I*, pp. 137–151, 2019.



- [18] D. S. Saleh, “Pengaruh Operating Capacity, Arus Kas Operasi dan Biaya Variabel Terhadap Financial Distress pada Perusahaan Manufaktur Subsektor Textil dan Garment yang Terdaftar di Bursa Efek Indonesia (BEI) Tahun 2009–2016,” *Eqien: Jurnal Ekonomi Dan Bisnis*, vol. 8, no. 1, pp. 34–49, 2018. DOI: <https://doi.org/10.34308/eqien.v5i1.12>
- [19] M. Spence, Job market signaling, *The Quarterly Journal of Economics*, vol. 87, no. 3, pp. 355-374, 1973.
- [20] S. A. Ross, “The determination of financial structure: The incentive-signalling approach,” *The Bell Journal of Economics*, vol. 8, no. 1, pp. 23–40, 1977. DOI: <https://doi.org/10.2307/3003485>
- [21] W. Setyowati, and N. R. N. Sari, “Pengaruh Likuiditas, Operating Capacity, Ukuran Perusahaan dan Pertumbuhan Penjualan Terhadap Financial Distress (Studi ada Perusahaan Manufaktur yang Terdaftar di BEI Tahun 2016–2017),” *Jurnal Magisma*, vol. 7, no. 2, pp. 135–146, 2019.
- [22] O. Kusanti, “Pengaruh Good Corporate Governance dan Rasio Keuangan Terhadap Financial Distress,” *Jurnal Ilmu & Riset Akuntansi*, vol. 4, no. 10, pp. 1–21, 2015.
- [23] V. Diyanto, The Effect of Liquidity, Leverage and Profitability on Financial Distress. *Indonesian Journal of Economics, Social, and Humanities*, vol. 2, no. 2, pp. 127-133, 2020. DOI: <https://doi.org/10.31258/ijesh.2.2.127-133>
- [24] D. E. Kieso, J. J. Weygandt, and T. D. Warfield, *Intermediate Accounting: IFRS Edition*, 4th ed. Reading, Hoboken, NJ: Wiley, 2020.