



COVID-19 Spread and Financial Distress: Does Managerial Ability Matter?

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ABSTRACT

The COVID-19 pandemic has caused a global-scale economic crisis. This study aims to examine the impact of the COVID-19 spread on financial distress and the moderating role of managerial ability in the relationship between the COVID-19 spread and financial distress. The population of this study is manufacturing companies listed on the Indonesian Stock Exchange between 2017 and 2021. Using purposive sampling techniques, 31 companies were selected as the samples (155 firm-year observations). Data were collected from the companies' financial statements and were analyzed using Partial Least Squares (PLS)-Structural Equation Modeling (SEM). The results of this study indicate that the COVID-19 spread has a positive effect on financial distress. Furthermore, managerial ability is a moderating factor that weakens the influence of the COVID-19 spread on financial distress. This study provides evidence that managerial ability is an important factor in managing company resources and is related to the company's efforts in dealing with the crisis caused by the COVID-19 spread.

Penyebaran COVID-19 dan Kesulitan Keuangan: Apakah Kemampuan Manajerial Penting?

ABSTRAK

Pandemi COVID-19 telah menyebabkan krisis ekonomi berskala global. Penelitian ini bertujuan untuk mengkaji dampak penyebaran COVID-19 terhadap kesulitan keuangan serta peran kemampuan manajerial dalam memoderasi hubungan penyebaran COVID-19 terhadap kesulitan keuangan. Populasi penelitian ini terdiri dari perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia periode 2017 hingga 2021. Dengan menggunakan teknik purposive sampling, 31 perusahaan dipilih sebagai sampel penelitian (155 observasi). Structural Equation Modeling (SEM)-Partial Least Squares (PLS) digunakan untuk menganalisis data penelitian. Hasil penelitian ini menunjukkan bahwa penyebaran COVID-19 berpengaruh positif terhadap kesulitan keuangan. Lebih lanjut, kemampuan manajerial menjadi faktor pemoderasi yang mampu memperlemah pengaruh penyebaran COVID-19 terhadap kesulitan keuangan. Penelitian ini memberikan bukti bahwa kemampuan manajerial menjadi faktor yang penting dalam pengelolaan sumber daya perusahaan serta terkait upaya perusahaan dalam menghadapi krisis yang disebabkan penyebaran COVID-19.

1. Introduction

The World Health Organization (WHO) characterized the spread of the novel coronavirus COVID-19 as a global pandemic on March 11, 2020, along with the surging numbers of COVID-19 cases that were reported in many countries, so the spread of COVID-19 quickly impacts the economy and

financial markets around the world (Chen & Yeh, 2021; Elnahass et al., 2021; Brania & Gurgul, 2021; Atayah et al., 2022). The COVID-19 pandemic became a global issue and caused an unprecedented shock to the global economy that affected not only the real economy but also the financial sector (Brania & Gurgul, 2021; Haris et al., 2022).

The outbreak of the COVID-19 pandemic has been described as the most significant black swan of 2020, an unexpected event that has a wide impact on the economy and the business sector around the world, and a wide range of media reports indicate that this pandemic has affected not only the Chinese but also the global economy (Long & Zhao, 2021).

Macroeconomic conditions such as the global financial crisis are correlated with dynamic environmental uncertainty and decreased demand, which have impacted financial aspects of the company, and this effect can lead to financial distress (Yazdanfar & Öhman, 2020). This dynamic economic environment makes it necessary to detect the probability of a company's failure because the risk of financial difficulties in the future that was predicted earlier can help the company adjust their business strategy to avoid bankruptcy in the future (Gepp & Kumar, 2015). A study by Yazdanfar & Öhman (2020) shows that financial distress is influenced by macroeconomic conditions, namely the global financial crisis, and it is also influenced by various firm-specific characteristics, namely firm performance, financial leverage, and financial distress in the previous year. It can be concluded that the financial crisis affects financial distress in the company.

Financial distress has become a global issue and has received attention from many researchers around the world (for instances, Yazdanfar & Öhman, 2020; Tong & Serrasqueirom 2021; Isayas, 2021; Oware & Appiah, 2021; ElBannan, 2021; Mariano et al., 2021; Younas et al., 2021; Farooq & Noor, 2021; Burlinson et al., 2021; Hazami-Ammar & Gafsi, 2021; Liu et al., 2021; Haris et al., 2022; Guizani & Abdalkrim, 2022; Gerged et al., 2022).

On the other side, the COVID-19 pandemic can lead to an economic crisis, and from this point of view, the economic crisis caused by the COVID-19 pandemic arises from an exogenous shock that leads to a prompt effect on all economic sectors, and then the whole economic aspect freezes at once (Nguyen & Hoang Dinh, 2021). While financial crises can lead to financial distress, the COVID-19 pandemic

can be the factor that causes a financial crisis because the whole economic aspect freezes at once. Therefore, crises caused by the COVID-19 pandemic can impact financial distress in the company. Dealing with crises is closely related to managerial ability within the company. Previous studies found that managerial ability plays an important role in the company's operations and fundamentals, such as its role as an important component in the company's innovative success (Chen et al., 2015) and increases in firm value (Yung & Chen, 2018).

Khoo & Cheung (2022) documented that companies with high managerial ability are associated with more short-term debt financing. Challenged by the COVID-19 crisis, managers must think about how to operate their companies in order to survive in this condition. Kumar & Zbib (2022) examine whether managerial ability impacts company performance during the crisis period and show that companies with better managerial ability have higher ROE and higher pre-pandemic liquidity, which explains their better performance to deal with the COVID-19 crisis.

Managerial ability is an aspect related to the ability of the managers to run the company, and the ability of top managers such as the chief executive officer (CEO) and chief financial officer (CFO) is an important factor in maintaining business continuity. A study by Kim (2021) shows that managerial ability plays an important role in the going concern of the company's business, related to the company's ability to overcome situations that can threaten business continuity.

A global economic system is full of uncertainty and complexity, so it is necessary for companies to anticipate the crisis. This means that the ability of managers to deal with these problems is expected to be able to avoid or reduce financial difficulties in the company. Based on these considerations, this study examines the effects of the COVID-19 spread on financial distress and the role of managerial ability as a moderator in the relationship between the COVID-19 spread and financial distress. A study by

Atayah et al. (2022) shows that COVID-19 pandemic spread harms the company's financial performance, but there is no study so far as we know that examines the role of the company's managerial ability in dealing with this kind of crisis condition. This study is novel considering the important role of a company's managerial ability in the context of COVID-19 spread. Research questions presented in this study are: How does COVID-19 spread affect financial distress? And how does managerial ability moderate the relationship between COVID-19 spread and financial distress?

2. Theoretical framework and hypothesis development

Theoretical framework

Various arguments from the previous research show that the authors have the same point of view that the COVID-19 pandemic is a global economic crisis that impacts financial aspects of the company (Brania & Gurgul, 2021; Long & Zhao, 2021; Karim et al., 2021; Nguyen & Hoang Dinh, 2021; Atayah et al., 2022). Nguyen & Hoang Dinh (2021) explained that the crisis caused by the COVID-19 pandemic arises from an exogenous shock, such as an unexpected public health crisis, that leads to a prompt effect on all economic sectors, and then the whole economic aspect freezes at once.

However, previous research has not emphasized the aspect of managerial ability in dealing with crises. The upper echelon theory, which was developed by Hambrick & Mason (1984), explains that processes and strategies within the company are related to the involvement of individuals who have a position at the top management level. Top management has a role in determining strategic decisions in the company and how managers' ability to interpret and manage complex situations. The financial aspect of the company is very important; when the company experiences financial distress, it will affect the company's responsibility to fulfill its obligations. In Indonesia, manufacturing companies are the main drivers of the economy, so the financial

distress in the manufacturing sector is important to detect because of its role in the Indonesian economy.

The determinants of financial distress in the manufacturing sector include internal factors such as financial conditions and company characteristics, as documented in previous research by Fahlevi & Marlinah (2019); Murni (2018); Rahmayanti & Hadromi (2017). Therefore, managerial capabilities are needed to anticipate changes in the global environment, including the crisis due to the COVID-19 pandemic.

Since the first COVID-19 confirmed case was reported in Indonesia, many academic studies have investigated the effects of COVID-19 in various aspects, such as financial performance (Sugiharto et al., 2021), exchange rate (Thaker & Sakaran, 2021; Rofiuddin, 2022), stock price (Lailiyah et al., 2021), and stock returns (Robin, 2021), but there is no study so far as we know that examines the influence of COVID-19 pandemic spread on financial distress. Financial distress is a condition that indicates whether a company is experiencing financial difficulties, so it is a factor that the top management, such as the CEO and CFO, pay attention to in carrying out their business activities. The important factor about the company's ability to deal with crises is related to the managerial ability within the company because the ability to manage the company is an aspect that is needed in order to carry out plans and make decisions in a crisis situation.

Hypothesis development

COVID-19 spread and financial distress

The COVID-19 pandemic can lead to an economic crisis. From this point of view, the economic crisis caused by the COVID-19 pandemic arises from an exogenous shock, such as an unexpected public health crisis, that has a prompt effect on all economic sectors. When business activities and education institutions were closed, the whole economic aspect froze at once (Nguyen & Hoang Dinh, 2021). The crisis itself can be divided into economic and financial crises. While the economic crisis is caused by exogenous shocks or

external factors, as well as the crisis caused by the COVID-19 pandemic, the financial crisis is caused by endogenous shocks, which build up risks in the financial sector because credit standards decline and then make the whole financial markets freeze, liquidity dry up, and the effects spread widely in other economic sectors, causing an economic recession (Nguyen & Hoang Dinh, 2021). Asutay & Othman (2020) explain that the global financial crisis shows how critical liquidity conditions can affect business operations and how they are related to the probability of survival in the company amid the crisis.

Financial distress is a financial problem that can lead a company into a situation where it needs external aid to continue its business operations (Paule-Vianez et al., 2019). Financial distress is described as a condition of financial difficulty, which is one of the causes of bankruptcy, but it does not mean that all companies facing financial distress will experience bankruptcy (Widiatami et al., 2020). In general, financial distress can be defined as a condition where the company is not able to continue its business activities in their normal form (Thinh et al., 2020). Companies that experience financial distress mostly face liquidity problems (Pham et al., 2022) and also have a higher dependence on loans (Mariano et al., 2021), which can lead to the company being unable to fulfill its debt obligations, increasing the likelihood of default.

Financial distress can also lead to various problems such as poor debt management, low sales, and higher expenses that cause the company to not have enough cash flow to run its business operations (Younas et al., 2021). Therefore, the bad effects of financial distress can threaten the survival of the company (Isayas, 2021). Guizani & Abdalkrim (2022) explain that liquidity, profitability, and leverage are key indicators that show a firm's signal to detect a financial distress condition, where leverage is the main riskiness indicator of a firm. A study by Shahwan (2015) shows that firm characteristics such as liquidity play a crucial role in determining financial distress. Furthermore, many

previous studies also show that financial distress can be caused by liquidity problems (Vestari & Farida, 2014; Susdaryo et al., 2021), leverage problems (Vestari & Farida, 2014; Agustini & Wirawati, 2019; Susdaryo et al., 2021), and profitability problems (Murtadha et al, 2018; Murni, 2018; Agustini & Wirawati, 2019; Fahlevi & Marlinah, 2019), where the ratio of profitability, leverage, and liquidity are related to the multiple financial ratio that is used to measure constructed financial distress Zmijewski's score to detect the probability of financial distress in the company. COVID-19 spread can be the cause of the company facing these kinds of difficulties, which in turn can bring the company into financial distress. A study by Atayah et al. (2022) shows that the COVID-19 pandemic's spread harms the company's financial performance. Based on these arguments, hypothesis 1 (H1) is described as below:

H₁: COVID-19 spread positively affects financial distress.

Moderating role of managerial ability in the relationship between COVID-19 spread and financial distress

Winardi (2000) explains that managerial ability is the ability of managers to plan, organize, implement, and monitor to achieve company goals. Ting et al. (2021) explain that high managerial ability can lead to effective decision-making, innovation, and increased investment, as well as generating competitive advantage and better company performance. Managers need to have the ability to manage resources within the company in terms of managing a company's business, particularly the ability to combine human resources and natural resources, which is realized by carrying out management functions within the company (Wang, 2013).

A study by ElBannan (2021) finds that managers in the firms should follow effective restructuring strategies to recover from distress by increasing their retained earnings to total assets ratio and cash holdings, such as reducing dividends or changing capital structure. More able managers have

a better understanding of their company's operating environment, enabling them to align business decisions, strategies, and mitigation plans amid conditions that can harm the company. Restuti et al. (2022) explain that when making resource adjustment decisions, higher-ability managers consider environmental uncertainty because environmental uncertainty can lead to greater risks.

Higher-ability managers can manage resources efficiently and use their better abilities to deal with uncertainty and handle risks (Restuti et al., 2022). Furthermore, a study by Bhutta et al. (2021) shows that managers who have high managerial ability are more able to manage resources within the company that positively contribute to company performance, even in a challenging environment with a weak legal system. It is related to the manager's ability to take on their role and face difficult situations. Dealing with crises is related to managerial ability within the company. The difficult situation that has become an interest in this research is the financial distress condition caused by the COVID-19 crisis. Based on these arguments, hypothesis 2 (H2) is described as follow:

H2: Managerial ability mitigates the positive effect of COVID-19 spread on financial distress.

3. Research method

Data and research samples

This research is a causal study to test factors that are causing a problem (Sekaran & Bougie, 2016), particularly the effect of COVID-19 spread on financial distress and the moderating role of managerial ability in the effect of COVID-19 spread on financial distress. The samples of this study included 155 observations that were collected from manufacturing companies listed on the Indonesian Stock Exchange in 2017-2021, based on purposive sampling (Table 1).

The data in this study was secondary data collected from manufacturing companies' financial statements that were published on www.idx.com and categorized as quantitative data. Manufacturing companies consist of three sectors: the basic and chemical industries, the miscellaneous industries, and the consumer goods industries.

The criteria for purposive sampling used in this study are as follows:

Table 1. Selection of research samples

No.	Purposive sampling	Total
1.	Manufacturing companies listed on the Indonesian Stock Exchange during the 2017-2021 period	154
2.	Companies whose financial statements are incomplete for the period 2017-2021	(7)
3.	Companies that present their financial statements in currencies other than rupiah (Rp) during the 2017-2021 period	(31)
4.	Companies that do not provide the indicator data required in this study during the 2017-2021 period	(85)
Number of samples that meet the criteria		31
Year of observation		5 years
Total sample in this study during the year of observation		155 observations

Technical analysis and variable measurement

The analytical technique used in this study was Partial Least Squares (PLS) – Structural Equation Modeling (SEM) with WarpPLS version 8.0 software. PLS-SEM can be used if there are distribution issues in the research data, such as a lack of normality (Hair et al., 2021), and can be used for

testing moderating effects (Hair et al., 2021). The model for this study can be described in the equation below:

$$FD = \rho_1 \text{ COVID} + \rho_2 \text{ MA*COVID} + \rho_3 \text{ AGE} + \rho_4 \text{ LIQUID}$$

Where:

FD = Financial distress

COVID = COVID-19 spread

MA*COVID = Interaction of managerial ability and COVID-19 spread

AGE = Company age

LIQUID = Liquidity

Financial distress

The dependent variable in this study is financial distress (FD). Various studies used bankruptcy prediction models to measure the condition of financial distress, one of which is the Zmijewski (1984) bankruptcy prediction model. Zmijewski (1984) model calculated bankruptcy scores based on the combination of return on assets, financial leverage, and liquidity with the unweighted probit, weighted probit model, weighted exogenous sample maximum likelihood (WESML), conditional maximum likelihood (CML), and full information concentrated maximum likelihood (FICML).

Zmijewski's (1984) bankruptcy prediction model used in this study is weighted probit (b^*) because this calculation is for a sample of companies that are not in distress, and the sample in this study also includes companies that are not in distress, which is used as a proxy for financial distress following Sultanoglu et al. (2018) in their study. Zmijewski's (1984) b^* bankruptcy model was calculated as follows:

$$B^* = -4.803 - 3.6 (ROA) + 5.4 (FINL) - 0.1 (LIQ)$$

Where:

ROA = Net Income/Total Assets

FINL = Debt/Total Assets

LIQ = Current Assets/Current Liabilities

The higher the Zmijewski score, the higher the level of financial distress experienced by the company (Migłani et al., 2015; Hazami-Ammar & Gafsi, 2021; Farooq et al., 2022).

$$\text{Maxv}\theta = (\text{Sales}) \times (v_1\text{CoGS} + v_2\text{SG\&A} + v_3\text{PPE} + v_4\text{OpLease} + v_5\text{R\&D} + v_6\text{Goodwill} + v_7\text{OtherIntan})$$

Where:

Sales = amount of total sales

CoGS = amount of cost of goods sold

COVID-19 spread

The independent variable in this study is COVID-19 spread (COVID). Following previous studies by Atayah et al. (2022) and Nguyen & Hoang Dinh (2021), the COVID-19 spread variable was measured using dummy values from the prior and during the COVID-19 spread, where the value of "1" was coded if the company was observed during the COVID-19 spread, which in this research referred to observations during the years 2020-2021 and coded "0" if the company was observed in the prior COVID-19 spread (from 2017 until 2019).

Managerial ability

The moderating variable in this study is managerial ability (MA). Managerial ability reflects how the top management team manages resources effectively to achieve better performance (Duan et al., 2022). Managerial ability is measured using two stages of calculating the managerial ability score developed by Demerjian et al. (2012), which explained that the measurement of managerial ability is based on the efficiency level of how managers in the company process various resources to generate income.

The managerial ability score was calculated in two stages: the first stage was calculating the efficiency of the amount of revenue generated from the company's input with Data Envelopment Analysis (DEA) using MaxDEA 6.1 software. DEA produces a value that shows the company's efficiency score with a range value from 0 (least efficient) to 1 (most efficient) among all available input combinations, and the result is the company efficiency score that becomes the basis for calculating the second stage. The calculation of this first stage can be described in the following equation:

SG&A = amount of selling, general and administrative expenses

PPE = amount of property, plant, and equipment

OpLease = amount of net operating lease
 R&D = amount of net research and development
 Goodwill = amount of goodwill
 OtherIntan = amount of other intangible assets

Inputs that are used include cost of goods sold (CoGS) and sales, general, and administration expenses (SG&A), which are measured during year t ; then the amount of property, plant, and equipment (PPE), net operating leases (OpLease), net research and development (R&D), goodwill (Goodwill), and other intangible assets (OtherIntangible), which are

$$\text{Firm Efficiency} = \alpha_0 + \alpha_1 \text{Ln}(\text{TotalAssets}) + \alpha_2 \text{MarketShare} + \alpha_3 \text{PositiveFreeCashFlow} + \alpha_4 \text{Ln}(\text{Age}) + \alpha_5 \text{BusinessSegmentConcentration} + \alpha_6 \text{ForeignCurrencyIndicator} + \dots \varepsilon$$

Where:

Firm efficiency = efficiency score by DEA

Ln (total assets) = Ln (amount of assets owned by the company)

Market share = Percentage of revenue earned by the company in its industry

Positive Free Cash Flow = Code 1 if the company has positive free cash flow, 0 otherwise

Ln (age) = Ln (number of years the company has been listed on the stock exchange)

Business segment concentration = Proportion of individual business segment sales to total sales

Foreign currency indicator = Whether the firm has foreign currency adjustments, 0 otherwise

ε = Residual

Company age

The control variable in this study is company age (AGE). Company age is measured by the number of years the company has been listed on the Indonesian Stock Exchange.

Liquidity

The control variable in this study is liquidity (LIQUID). Liquidity is measured by current assets divided by current liabilities.

measured at the beginning of year t . The second stage in calculating the managerial ability score is to remove the company characteristics from the company's efficiency generated in the first stage by regressing the results of the firm efficiency with the company's characteristic factor to produce a residual (ε), where the residual from this regression is the managerial ability score. The second stage in calculating managerial ability can be described through the following regression equation:

4. Results and discussion

Descriptive statistics

Based on the descriptive statistics output summarized in Table 2, it can be seen that the descriptive statistical data analysis for the financial distress variable shows that financial distress measured by Zmijewski (1984) b^* score has a maximum score as many 16.25, a minimum score as many -25.12, an average score as many -2.47, and a standard deviation value as many 3.75. The average Zmijewski (1984) b^* score of -2.47 indicates that average companies in this sample have quite a low leverage ratio. The standard deviation of Zmijewski (1984) b^* score as many 3.75 shows that data variation is relatively high because this value is above the average value as many -2.47.

The COVID-19 spread variable has a maximum value of 1 and a minimum value of 0 because it is coded as a dummy variable. The dummy coded 1 in these samples consists of 62 samples that show 40% data in these samples observed in the COVID-19 spread, and the dummy coded 0 consists of 93 samples that show 60% data in these samples observed before the COVID-19 spread occurred.

Table 2. Descriptive statistics results

Variables	Maximum	Minimum	Mean	Standard deviation
Financial distress	16.25	-25.12	-2.47	3.75
COVID-19 spread	1	0	-	-

Managerial ability	0.69	-0.72	0.03	0.29
Company age	39	1	20.34	9.77
Liquidity	9.62	0.02	4.12	16.59

The managerial ability score has a maximum score as many 0.69, a minimum score as many -0.72, an average score as many 0.03 and a standard deviation value as many 0.29. The average managerial ability score as many 0.03 shows that average companies in this samples have quite high managerial ability, considering the median score in this sample as many 0.01, where Kim (2021) classified a firm as having high managerial ability if the managerial ability score was higher than the median value.

The standard deviation of the managerial ability score as many 0.29 in this sample shows that data variation is relatively high because this value is above the average value as many 0.03.

This model also included control variables, namely company age, which has a maximum value as many 39, a minimum value as many 1, an average value as many 4.12, and a standard deviation value as many 16.59; and liquidity, which has a maximum value as many 9.62, a minimum value as many 0.02, an average value as many 4.12, and a standard deviation value as many 16.59.

Table 3. Model fit

Model Fit	Value	Sign.	Rule of Thumb	Notes
Average path coefficient (APC)	0.249	P<0.001	P < 0.05	Satisfy
Average R-Square (ARS)	0.704	P<0.001	P < 0.05	Satisfy
Average Adjusted R-Squared (AARS)	0.696	P<0.001	P < 0.05	Satisfy
Average variance inflation factor (AVIF)	1.128		≤5, ideally ≤ 3.3	Satisfy
Average full collinearity VIF (AFVIF)	2.104		≤5, ideally ≤ 3.3	Satisfy
Tenenhaus GoF (GoF)	0.839		Small ≥ 0.1 Medium ≥ 0.25 Large ≥ 0.36	Large

Model fit

The first stage is to evaluate whether this research model meets the criteria of goodness of fit. Based on the model of fit indicators output that is summarized in Table 3, it can be seen that six indicators used in this study are satisfying, and it can be concluded that this model is fit based on the significant P value at 0.05 level on the three indicators APC, ARS, and AARS.

This model also has no vertical collinearity problem (collinearity between exogenous variables), or lateral collinearity problem (collinearity between exogenous and endogenous variables) based on the path coefficient of the two indicators AVIF and AFVIF. Another indicator is the criteria for a GoF value = 0.839, which means that the predictive powers of the model can be categorized as large because the value is > 0.36.

Explanatory power

The next stage is to evaluate the model's explanatory power. Based on the latent variable coefficients that are summarized in Table 4, the coefficient of R-Squared determination is 0.704, which shows that the variation of the endogenous variable (financial distress) is 70.4% explained by exogenous variables COVID-19 spread, the moderating effect of managerial ability with COVID-19 spread, and also the control variables in this model: company age and liquidity, while the remaining 29.6% can be explained by other variables outside this model. Another indicator that can explain this model is the value of Q-Squared as many 0.674 > 0, which shows that this model has predictive relevance. Another indicator of an explanatory model is the effect size, which explains the individual contributions of each exogenous

variable to the value of the R-Squared endogenous variable.

The effect size value of COVID at 0.051 or 5.1% means that the absolute value of individual

contributions of the COVID-19 spread variable to the R-Squared value of the financial distress variable is considered weak from the practical point of view.

Table 4. Explanatory power

R-Squared = 0.704			
Q-Squared = 0.674			
Effect size			
Variables	Path Coefficients	Explanation	Rule of Thumb
COVID	0.051	Weak	> 0.02 weak
MA*COVID	0.650	Large	> 0.15 medium
AGE	0.000	Very weak	> 0.35 large
LIQUID	0.003	Very weak	

The effect size value of MA*COVID at 0.650 or 65% means that the absolute value of individual contributions of the managerial ability moderation variable to the R-Squared value of the financial distress variable is considered large from the practical point of view. The control variables in this study are company age (AGE) and liquidity

(LIQUID), which have effect sizes of 0.000 and 0.003, respectively, which means that the absolute value of individual contributions of the company age variable and liquidity variable to the R-Squared value of the financial distress variable is considered very weak from the practical point of view.

Table 5. Path coefficients and P-values

Variables	Path coefficients	P-value	Rule of thumb	Notes
COVID	0.150	0.010	P < 0.05	Accepted
MA*COVID	-0.786	<0.001	P < 0.05	Accepted
AGE	-0.035	0.292		
LIQUID	-0.025	0.349		

Path coefficients and P-values

The next stage is to evaluate the path coefficients and P-value values from the output summarized in Table 5. The path coefficient of the COVID-19 spread variable (COVID) is 0.150 and significant with P = 0.010; the path coefficient of the moderating variable, which is the interaction of managerial ability with COVID-19 spread (MA*COVID), is -0.786 and significant with P = <0.001.

This model also includes control variables namely company age, which has a path coefficient

of -0.035 with P = 0.292, and liquidity, which has a path coefficient of -0.025 with P = 0.349.

Results

Based on the path diagram in Figure 1, the COVID-19 spread has a positive and significant effect on financial distress. It can be seen from the path coefficient of the COVID-19 spread variable (COVID), which is 0.150 positives with P = 0.010 < 0.05. Thus, hypothesis 1 (H1) is accepted. COVID-19 spread positively affects financial distress.

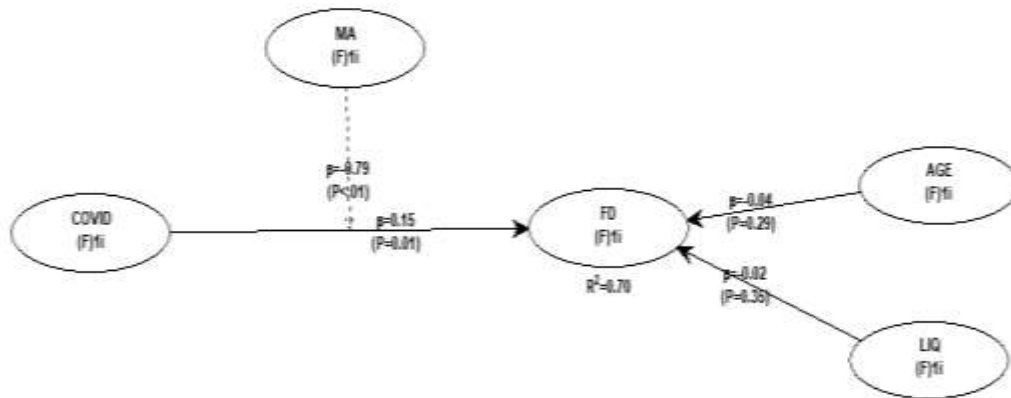


Figure 1. Path analysis diagram

This significant effect can be explained by the fact that the COVID-19 pandemic spread has had a significant impact on Indonesian manufacturing companies. COVID-19 spread can be the cause of

the company facing many kinds of difficulties, which in turn can bring the company into financial distress.

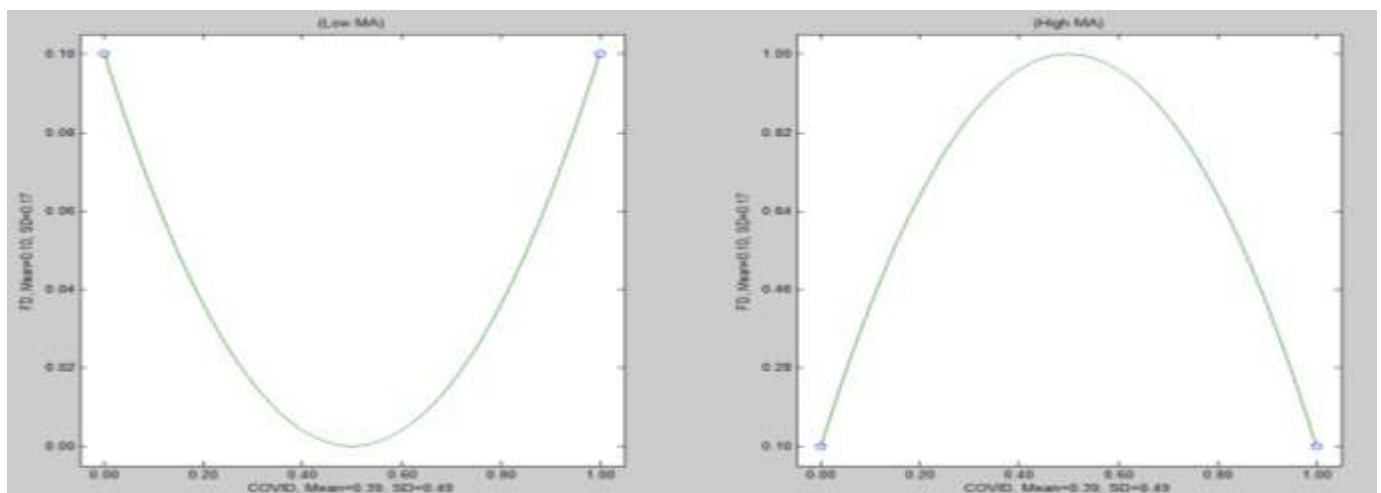


Figure 2. Standardized scales graph with low-high value of moderating variable and data points

The ability of managers to deal with crises will determine financial stability, especially to avoid or reduce financial difficulties. It can be seen from the path coefficient of the moderating variable in Figure 1, which is the interaction of managerial ability with COVID-19 spread (MA*COVID) of -0.786 and significant with $P = < 0.001$. Thus, hypothesis 2 (H2) is accepted. Managerial ability mitigates the positive effect of the COVID-19 spread on financial distress.

The role of managerial ability on the relationship between COVID-19 spread and financial distress can be seen in Figure 2, which

means that managerial ability weakens the positive effect of COVID-19 spread and financial distress, from the point between 0.40 and 0.60 decreasing until at the point 1.00 on the high managerial ability, and the point between 0.40 and 0.60 increasing until at the point 1.00 on the low managerial ability. It can be concluded that there is a tendency for the pattern of high managerial ability to weaken the positive coefficients in the relationship between COVID-19 spread and financial distress. This shows that higher managerial ability can reduce the bad effects of the crisis caused by the COVID-19 spread that lead to

financial distress, which in this case is the role of managerial ability to mitigate the effect of the COVID-19 spread that may lead to financial distress, whereas lower managerial ability can increase the bad effects of the crisis caused by the COVID-19 spread on financial distress.

This research provides evidence that COVID-19 spread influences financial distress and that managerial ability has an important role in business continuity related to how managers are able to deal with crisis conditions that can cause companies to face financial distress. This research provides new insights regarding the influence of COVID-19 spread on a company's financial distress, which is also in line with a study by Atayah et al. (2022), which finds that COVID-19 pandemic spread harms the company's financial performance. Another previous study finds that COVID-19 spread influences firm financial performance (Sugiharto et al., 2021), exchange rate (Thaker & Sakaran, 2021; Rofiuddin, 2022), stock price (Lailiyah et al., 2021), and stock returns (Robin, 2021). This study also provides supporting evidence from a study by Kim (2021), which shows that managerial ability plays an important role in the continuity of the company's business and relates to the company's ability to overcome situations that can threaten business continuity.

5. Conclusions

The outbreak of the COVID-19 pandemic has been becoming the most significant black swan of 2020, described as an unexpected event that has a wide impact on the economy and the business sector around the world, and a wide range of media reports indicate that this pandemic has affected not only the Chinese but also the global economy (Long & Zhao, 2021). The results of this study indicate that in Indonesian manufacturing companies, COVID-19 spread has a positive effect on financial distress. COVID-19 spread can be the cause of the company facing many kinds of difficulties, which in turn can bring the company into financial distress.

Furthermore, the results of this study indicate that managerial ability is a moderating factor that weakens the influence of COVID-19 spread on financial distress. Higher-ability managers can manage resources efficiently and use their better abilities to deal with uncertainty and handle risks (Restuti et al., 2022). Dealing with crises is related to managerial ability within the company. This study provides evidence that managerial ability is an important factor in managing company resources and is related to the company's efforts in dealing with the crisis caused by the COVID-19 pandemic spread. The ability of managers to deal with these problems reduces financial difficulties in the company.

The results of this study contribute to theory and practice. Theoretically, these findings contribute to the financial and management literature, mainly the role of managerial ability based on upper echelon theory. Managerial ability is an aspect related to the ability of the managers to run the company, and the ability of top managers such as the chief executive officer (CEO) and chief financial officer (CFO) is an important factor in maintaining business continuity. In practice, this study shows the importance of managerial ability, which is related to the key managers in the company, namely the chief executive officer (CEO) and chief financial officer (CFO), in terms of crisis control. This study implies that managers of the companies should improve firm efficiency by managing the company's resources to generate optimal sales that are able to reduce the detrimental effects of the crisis caused by the COVID-19 pandemic spread, which can lead to financial distress. These findings provide an understanding of the role of managerial ability, which plays an important role in the survival of the company in difficult conditions.

The limitation in this study is that the year of observation was only 5 years from the 2017–2021 period, so further research can increase the number of years of observation. This research context is particularly interesting, which opens a direction for future research with regard to the ongoing debate about the influence of the COVID-19 spread on the

global economy in various sectors. The object of this study only includes general manufacturing companies so that further research can observe other sectors, such as the automotive industry and tourism sectors, as The Ministry of Tourism and Creative Economy of the Republic of Indonesia stated that the COVID-19 pandemic spread had hit the tourism industry in Indonesia, resulting in a decrease in the number of foreign tourists visiting Indonesia and a decreased amount of revenue in the tourism sector during the year 2020 (Kementerian Pariwisata dan Ekonomi Kreatif Republik Indonesia, 2021).

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