



Analysis of Financial Distress in Indonesia before and during Covid-19

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Article History

Received: 25/07/2023

Accepted: 28/07/2023

Published: 31/07/2023

Vol – 2 Issue – 7

PP: -126-132

Abstract

This research aims to examine the effect of profitability, liquidity, operating cash flow, leverage, and ownership concentration on financial distress. This study uses a quantitative model using company financial statement data. The population of this study is the financial statements of companies in the secondary consumer goods sector that are listed on the Indonesia Stock Exchange within observation period of 2015 to 2021 which divided into before Covid-19 period of 2015 to 2019 and during Covid-19 period of 2020 to 2021. The sampling technique used in this study is purposive sampling. The sample for before Covid-19 period are 305 and during Covid-19 period are 122 that meet the criteria of sampling. The statistical method used to test the hypothesis is survival analysis. The results from this research are profitability, liquidity, operating cash flow and leverage have significant effect on financial distress with 95% level of confidence, meanwhile, ownership concentration has significant effect on financial distress with 90% level of confidence before Covid-19. For result during Covid-19, profitability and leverage have significant effect on financial distress with 95% level of confidence, meanwhile operating cash flow has significant effect on financial distress with 90% level of confident.

Keywords: financial distress, profitability, liquidity, operating cash flow, leverage, ownership

INTRODUCTION

The trade-off theory explains that a company's decision to obtain an optimal capital structure is related to a trade-off between debt tax advantages and some costs related to leverage (Ross et al., 2022). The level of debt can increase the risk of bankruptcy due to an increase in the ratio of debt to equity, then creditors will provide higher interest rates, even though shareholders will get higher profits (Modigliani & Miller, 1958).

The company's business failure usually start from financial difficulties. However, financial difficulties do not always lead to bankruptcy. Decreasing in a company's financial performance can affect investment, payments, and negatively affect the wealth of managers and shareholders (A. Habib et al., 2020).

Bankruptcy usually begins with economic failure, a condition where there is a decrease in company profitability to minus or total revenue is smaller than the company's total expenses (Samsuddin et al., 2018). Based on the type of insolvency bankruptcy, technical bankruptcy occurs when a company cannot fulfill its debts as they fall due or is a symptom of cash flow or lack of liquidity (Altman et al., 2019).

According to Altman et al., (2019) default which refers to borrowers who violate agreements with creditors or technical failures occur when companies violate provisions other than scheduled payments. As a result of high leverage, it will result in bankruptcy for the company because, in the end, its liabilities exceed the value of its assets.

Corporate governance is defined as a system in which companies are managed and controlled, by regulating the relationship between the board of directors, executive managers, shareholders, and other stakeholders (Belkhir, 2009). The majority owner controls the company so that other parties cannot control the company, then concentrated ownership often ignores the principles of good corporate governance (transparency, accountability, responsibility, independence) (Taufik et al., 2020).

The mobility of the Indonesian people during 2020 to 2021 in public transportation (transit) centers, workplaces, parks, as well as retail and recreation is below the average mobility. Based on the Announcement page on the Indonesian Stock Exchange website, there are 13 companies in the secondary consumer goods sector that are included in the Listed Company Delisting Potential during 2019 to 2022. With various factors affecting financial distress, the changing

economic conditions faced by companies will further experiencing financial distress, especially the during Covid-19 pandemic. This research was conducted to be able to answer the question of the influence of several factors on the occurrence of financial distress in a company sector, as well as how far the results differ from the research with different research samples, before Covid-19 and during Covid-19.

LITERATURE REVIEW

Financial Distress

Financial distress can be defined as an eternal situation in which the Company experiences poor financial conditions such as low liquidity, inability to pay debts, restrictions on dividend distribution policies, increased costs of capital, reduced access to external funding sources, and credit ratings (Agostini, 2018). According to Altman et al., (2019), there are four economic impacts of bankruptcy, namely reorganization, acquisition, liquidation, or termination.

Profitability

Profitability is a group of ratios that show the combined effect of liquidity, asset management, and debt on operating results (Brigham & Houston, 2019). Profitability is a measure of a company's success using various measures that link the company's returns or profits with its sales, assets, and equity (Smart et al., 2017) Profitability is also associated with an assessment of financial performance (Higgins et al., 2022). Profitability is the net result of a large number of managerial policies and decisions, so that the profitability ratio provides a measure of financial performance (Reiter & Song, 2021).

Liquidity

Liquidity is the company's ability to collect cash in the short term in order to fulfill its obligations so that liquidity depends on the company's cash flow, the composition of its current assets, and current liabilities (Subramanyam, 2014). Liquidity measures the ability of assets to be sold as soon as possible (Roncalli, 2020). Liquidity provides an overview of a company's ability to pay off debts that are due within one year (Brigham & Houston, 2019). The liquidity ratio focuses on the company's ability to meet its daily operational costs and to be able to meet its short-term obligations when they fall due with the main concern being the adequacy of cash and other liquid assets to pay off debt and operational needs quickly and on time (Smart et al., 2017).

Operating Cash Flow

Operating cash flow refers to the cash flow generated from the company's daily production and sales activities (Ross et al., 2022; Smart et al., 2017). By using balance sheet data in calculating operating cash flow, it means recognizing that with accrual accounting, not every income or expense listed in the income statement represents cash flow. The operating cash flow deficit causes the need for additional sources of funds, manage operating cash flows is an important factor that must be managed adequately by management (Sayida & Assagaf, 2020).

Leverage

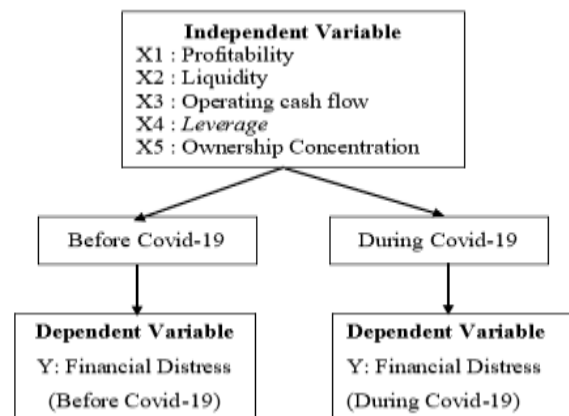
The leverage ratio or sometimes also called the solvency ratio is seen from the company's financial structure from the amount of debt used to support the company's resources and operations (Smart et al., 2017). When a company does not have leverage, the company finances its assets entirely with equity, the cost of equity capital is equal to the cost of its assets (Asaoka, 2022). A company increases financial leverage by increasing the proportion of debt to equity used to finance the company's business (Higgins et al., 2022).

Ownership Concentration

Ownership concentration can lead to the acquisition of personal benefits for controlling shareholders by sacrificing minority shareholders (Barclay & Holderness, 1989; Demsetz & Villalonga, 2001) or can even carry out potentially inefficient activities (Morck et al., 1988). The ownership structure emerges from the interaction of market forces which maximizes the expected shareholder returns (Berle & Gardner, 1934). When company ownership is concentrated, large shareholders will play an important role to monitor management (Zhuang, 1999).

Theoretical Framework

Figure 1. Theoretical Framework



HYPOTHESIS DEVELOPMENT

Effect of profitability on financial distress

Profitability is an indicator that a company generates profits from its resources. In addition, profitability is also able to show that the company can use its assets effectively, optimally, and efficiently. The higher the company's profitability, the higher the company's profits. So that with these circumstances, the less likely the company will experience financial distress. This is in accordance with research conducted by previous researchers (Agustini & Wirawati, 2019; Gupta, 2017; Kamaluddin et al., 2019; Kristanti & Isnwardhana, 2018; Masdupi et al., 2018; Putra et al., 2022; Ramachandran et al., 2020; Sardo et al., 2022) which states that profitability has a negative effect on financial distress.

H1a: Profitability has a negative effect on financial distress before the Covid-19 pandemic

H1b: Profitability has a negative effect on financial distress during the Covid-19 pandemic

Effect of liquidity on financial distress

Liquidity means that the company has a capability to pay off short-term obligations in a timely manner. The greater the liquidity, the better for the company. In other words, a liquid company is in a condition of having greater current assets than its current liabilities. On the other hand, low liquidity means that the company has the potential to experience difficulty of fulfilling its obligations that fall due soon, then it can experience financial difficulties. This is based on research which stated that liquidity has a negative effect on financial distress (Masdupi et al., 2018; Pham Vo Ninh et al., 2018).

H2a: Liquidity has a negative effect financial distress before the Covid-19 pandemic

H2b: Liquidity has a negative effect on financial distress during the Covid-19 pandemic

Effect of operating cash flow on financial distress

The condition of financial difficulties will get worse if the company's liquidity conditions are not smooth coupled with fixed expenses that increase but income decreases during an economic downturn. Fixed expenses and other costs included in a company's operating expenses are reflected in the company's operating cash flow. The company's operating cash flow is the most liquid instrument owned by the company. It will be easier to fulfill the company's obligations if the company's operating cash flow is available. A large operating cash flow indicates that the income is greater than the costs incurred for operations. The greater the cash generated from the company's operating cash flow, the less likely the company is to experience financial distress. This is based on several studies which state that operating cash flow has a negative effect on financial distress (Namvar & Faghani Makrani, 2013; Phan et al., 2022; Sayida & Assagaf, 2020).

H3a: Operating cash flow has a negative effect on financial distress before the Covid-19 pandemic

H3b: Operating cash flow has a negative effect on financial distress during the Covid-19 pandemic

Effect of leverage on financial distress

Leverage is a debt or obligation that must be met by the company, which can come from the owner of the company or loans from outside the company. Leverage shows that companies need to think about funding from debt that is being borne by the company for the next several periods. Thus, leverage is closely related to credit risk, namely default in the future. Thus, the higher the company's leverage, the higher the possibility of the company experiencing financial distress. This is based on research that has been conducted by several researchers (Agustini & Wirawati, 2019; Farooq et al., 2021; A. M. Habib & Kayani, 2022; Pham Vo Ninh et al., 2018; Ramachandran et al., 2020; Yazdanfar & Öhman, 2020) which states that leverage has a positive effect on financial distress.

H4a: Leverage has a positive effect on financial distress before the Covid-19 pandemic

H4b: Leverage has a positive effect on financial distress during the Covid-19 pandemic

Effect of ownership concentration on financial distress

When the concentration of ownership is dispersed, agency costs increase, and the resulting degree of information asymmetry between the organization and its shareholders. With a smaller concentration of ownership will minimize the issue. The greater concentration of ownership, the less likely the company will experience financial distress. This is consistent with the results of research which states that concentration of ownership has a negative effect on financial distress (Ciampi, 2015; Hu & Zheng, 2015; Salasiwa & Trichayadinata, 2021).

H5a: Ownership concentration has a negative effect on financial distress before the Covid-19 pandemic

H5b: Ownership concentration has a negative effect on financial distress during the Covid-19 pandemic

RESEARCH METHODOLOGY

Unit of Analysis, Population, and Sample

The data used in this research is secondary data. The data source for this research is the financial reports of companies within the secondary consumer goods sector or consumer cyclicals which are listed on the Indonesia Stock Exchange. In this study, the method of sampling using purposive sampling technique, that requires sample have to be registered and active in the Indonesia Stock Exchange during the research period of 2015 to 2021, must submit and report their audited financial statements for the 2015-2021 period on the website of the Indonesia Stock Exchange (www.idx.co.id) or the website of each company.

Measurement

Table 1. Measurement

Variable	Measure
Financial Distress	Interest Coverage Ratio (ICR), dummy: 1 if ICR less than 1, 0 if ICR more than 1
Profitability	Return on Asset
Liquidity	Current Ratio
Operating Cash Flow	Cash Flow from Operations
Leverage	Debt to Equity Ratio
Ownership Concentration	Largest Shareholders' Ownership

Source: Data processed by researchers (2023)

Data Analysis

Statistical procedures for data analysis where the desired outcome variable is the time period until an event occurs. The event in question refers to the time variable as survival time or failure event (Kleinbaum & Klein, 2012). In survival analysis, the term survival time refers to the time that has passed from the origin to the occurrence of an event (Emura & Chen, 2018).

The model used for this research is Cox Proportional Hazards. It is a model commonly used in analyzing semiparametric survival data, has parametric assumptions about the effect of predictors on the hazard function but cannot make



assumptions about the nature of the hazard function (Harrell, 2015).

RESULTS

Statistics Descriptive

Table 3 shows the statistical descriptive of the samples. Profitability has minimum amount in samples of before Covid-19 by -1.096%, which means the samples experiencing lower profitability in period before Covid-19. Profitability also showing average of minus both before and during Covid-19 period. Liquidity has maximum amount during Covid-19 with 9.863%. Leverage has maximum amount in samples of during Covid-19 with 114,290 and minimum amount -30,153, which means leverage has higher fluctuate during Covid-19 period than before Covid-19 period. Ownership concentration has average around 50% both before and during Covid-19 that means the largest ownership half of total shares. Financial distress has average of 0,443 before Covid-19 that means the samples mostly have condition with non-financial distress. Meanwhile, financial distress has average of 0,705 during Covid-19 that means the samples mostly experiencing financial distress.

Classification Metrics

Table 2. Classification before and during Covid-19

Before Covid-19			
Estimated error rate			5.25%
Confusion matrix			
	0	1	Class error
0	163	7	0.0412
1	9	126	0.0667
During Covid-19			
Estimated error rate			11.48%
Confusion matrix			
	0	1	Class error
0	27	9	0.2500
1	5	81	0.0581

Source: Data processed by researchers (2023)

Table 2 indicated that before Covid-19 has 94.75% accuracy of financial distress classification. Meanwhile, for during Covid-19, the accuracy of financial distress classification is 88.52%.

Table 3. Statistic Descriptive

Variable	Observation	Mean	Standard Deviation	Min	Max	
ROAa	Profitability	305	-0,064	0,881	-10,965	0,728
ROAb		122	-0,167	0,703	-4,772	0,238
CRa	Liquidity	305	2,279	2,166	0,021	14,030
CRb		122	3,351	10,263	0,021	98,634
CFOa	Operating Cash Flow	305	0,303	0,575	-2,466	2,551
CFOb		122	0,186	0,554	-1,219	3,350
DERa	Leverage	305	1,014	1,773	-5,285	14,691
DERb		122	2,316	11,920	-30,153	114,290
LSOa	Ownership Concentration	305	0,555	0,205	0,096	0,975
LSOb		122	0,565	0,203	0,195	0,930
FDa	Financial Distress	305	0,443	0,498	0,000	1,000
FDb		122	0,705	0,458	0,000	1,000

Source: Data processed by researchers (2023)

Hypothesis Test

Table 4. Cox Proportional Hazard

Before Covid-19						
	coef	exp(coef)	se(coef)	Z	Pr(> z)	
ROAa	-0.2690	0.7642	0.0679	-3.959	0.0000	***
CRa	-0.1733	0.8408	0.0708	-2.447	0.0144	*
CFOa	-0.4278	0.6520	0.1842	-2.323	0.0202	*
DERa	0.0703	1.0729	0.0340	2.066	0.0388	*
LSOa	-0.7223	0.4857	0.4297	-1.681	0.0928	.
Signif Codes: '***' 0.001, '**' 0.01, '*' 0.05, '.' 0.1						
n= 305, number of events= 135						
Concordance			0.699 (se = 0.025)			
Likelihood ratio test			44.09 on 5 df		p = 0.0000	
Wald test			47.06 on 5 df		p = 0.0000	
Score (log-rank) test			56.4 on 5 df		p = 0.0000	

During Covid-19						
	Coef	exp(coef)	se(coef)	Z	Pr(> z)	
ROAb	-0.3043	0.7376	0.1176	-2.588	0.0097	**
CRb	0.0135	1.0136	0.0112	1.207	0.2273	
CFOb	-0.5016	0.6056	0.2778	-1.806	0.0710	.
DERb	0.0159	1.0160	0.0075	2.126	0.0335	*
LSOb	-0.3135	0.7309	0.5541	-0.566	0.5715	
Signif Codes: '****' 0.001, '***' 0.01, '**' 0.05, '.' 0.1						
n= 122, number of events= 86						
Concordance	0.668 (se = 0.042)					
Likelihood ratio test	12.32 on 5 df				p = 0.03	
Wald test	14.5 on 5 df				p = 0.01	
Score (log-rank) test	15.47 on 5 df				p = 0.009	

Source: Data processed by researchers (2023)

The following are the explanation from Table 4:

H1: Profitability has negative and significant effect on financial distress both before and during Covid-19 period. The hypothesis are supported by research (Agustini & Wirawati, 2019; Gupta, 2017; Kamaluddin et al., 2019; Kristanti & Isyuardhana, 2018; Masdupi et al., 2018; Putra et al., 2022; Ramachandran et al., 2020; Sardo et al., 2022) which stated that profitability has negative and significant effect on financial distress.

H2: Liquidity has negative and significant effect on financial distress before Covid-19 period. This is supported by research (Masdupi et al., 2018; Pham Vo Ninh et al., 2018) which stated that liquidity has negative effect on financial distress. Meanwhile, liquidity has positive and insignificant effect on financial distress during Covid-19 that not supported the empirical research result.

H3: Operating cash flow has negative and significant effect on financial distress both before Covid-19 period with level of confidence 95% and during Covid-19 period with level of confidence 90%. This is supported by research (Namvar & Faghani Makrani, 2013; Phan et al., 2022; Sayida & Assagaf, 2020) which stated that operating cash flow has negative and significant effect on financial distress.

H4: Leverage has positive and significant effect on financial distress both before and during Covid-19 period. This is supported by research (Agustini & Wirawati, 2019; Farooq et al., 2021; A. M. Habib & Kayani, 2022; Pham Vo Ninh et al., 2018; Ramachandran et al., 2020; Yazdanfar & Öhman, 2020) which stated that leverage has positive and significant effect on financial distress.

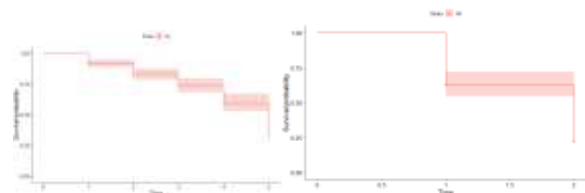
H5: Ownership concentration has negative and significant effect on financial distress before Covid-19 period. This is supported by research (Ciampi, 2015; Hu & Zheng, 2015; Salasiwa & Tricahyadinata, 2021) which stated that ownership concentration has negative effect on financial distress. Meanwhile, ownership concentration has negative and insignificant effect on financial distress during Covid-19 that not supported the empirical research result.

Survival Analysis

Survival curves both before and during Covid-19 show that the greater period, the smaller chance of the company

experiencing financial distress as showed in Figure 2. The range of probability to have financial distress during Covid-19 is wider than during Covid-19

Figure 2. Survival graph before and during Covid-19



Source: Data processed by researchers (2023)

DISCUSSION

The first hypothesis states that profitability has negative and significant effect on financial distress both before and during Covid-19 period. The higher company's ability to gain profit, the better financial performance of the company. It could cause less likely the company will experience financial distress.

The second hypothesis states that liquidity has negative and significant effect on financial distress before Covid-19 period but has positive and insignificant effect on financial distress during Covid-19. The greater the liquidity before Covid-19 period experienced by the company, the higher capability of the company to fulfill the short obligations. Meanwhile, during Covid-19 most of the company has postponed the installment of the obligation, so there are no effect of higher liquidity to experience financial distress.

The third hypothesis states that operating cash flow has negative and significant effect on financial distress both before and during Covid-19. The better cash generated from the companies' operating could fulfill the obligations. The higher operating cash flow available, the less likely the company experience financial distress.

The forth hypothesis states that leverage has positive and significant effect on financial distress both before and during Covid-19 period. High leverage indicate that funding from debt is higher than equity. Then the company need to fulfill its obligations regularly. Hence the financial of the company is not always in good condition can cause default. The higher companies' leverage, the higher chance of the company experiencing financial distress.



The fifth hypothesis states that Ownership concentration has negative and significant effect on financial distress before Covid-19 period but has negative and insignificant effect on financial distress during Covid-19. The smaller concentration of ownership before Covid-19 will minimize the issue of agency cost and asymmetry information. Hence, the less likely the company experiencing financial distress. Meanwhile, during Covid-19, there are not much that can be done and regulated by shareholder to the company because of decreasing economic globally period, then there are no effect of ownership concentration to financial distress.

CONCLUSION

This research aims to examine the effect of profitability, liquidity, operating cash flow, leverage, and ownership concentration on financial distress. The five variables expected to have significant effect, negative or positive, to financial distress before and during Covid-19 period. After the analysis, the result showed that all of the variables has significant effect to financial distress before Covid-19 but not all of the variables has significant effect to financial distress during Covid-19. Based on the research results profitability, liquidity, operating cash flow and leverage have significant effect on financial distress with 95% level of confidence, meanwhile, ownership concentration has significant effect on financial distress with 90% level of confidence before Covid-19. For result during Covid-19, profitability and leverage have significant effect on financial distress with 95% level of confidence, meanwhile operating cash flow has significant effect on financial distress with 90% level of confident.

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