THE ROLE OF CASH FLOW OF OPERATIONAL, PROFITABILITY, AND FINANCIAL LEVERAGE IN PREDICTING FINANCIAL DISTRESS ON MANUFACTURING COMPANY IN INDONESIA

Florentina Cindy Finishtya
Universitas Ciputra Surabaya

Abstract: The purpose of this study is to empirically test the influence of ratio on the cash flow of operational activities, profitability, and financial leverage towards financial distress condition that may emerge in manufacturing company in Indonesia. The population of this study consist of all manufacturing companies listed in Indonesia Stock Exchange in 2016. The sampling technique used is purposive sampling method, obtaining 111 manufacturing companies as the final research samples from a total data of 124 companies that were being observed. Altman Z-score model (1968) is used to determine whether the company is experiencing financial distress. Data analysis technique used is the binary logistic regression. The result of hypothesis testing shows that operating cash flow as measured by cash flow from operational/net sales is significant towards company’s financial distress, profitability measured by ROA shows a significance towards financial distress and financial leverage measured by DER does not show any significance towards financial distress.

Keywords: Z-score- Altman, profitability, financial leverage, operating cash flow, financial distress.


Indonesia is one of the developing countries that have experienced several financial crises, mainly in 1998 and 2008. In 1998, Rupiah exchange rate weakened to the lowest point of Rp 16,650 from Rp 5,000 and the JCI decreased by -0.91%. Minister Sri Mulyani said that the cause of the 1998 financial crisis was triggered by Indonesia’s uncertain balance of payments. The exchange rate was inflexible and tend to be unfavourable against the market condition, thus called to trigger the crisis. Then in 2008, the crisis was expected to cause by the derivative products from the emergence of technology-based products. Since the beginning of 2018, the exchange rate of rupiah to the US dollar weakened at Rp 9.050 to Rp 12.400 or lowered by 37%. The JCI also decreased by -50.64%.

In 2015, Indonesia also experienced a “mini crisis,” this is caused by the weakening of the exchange rate that ranges in around Rp 12.000 at the end of the year to around Rp14.000. JCI also de-
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The decline in the rupiah exchange rate against the dollar caused the investor to have lower confidence to invest and further cause financial problem in many companies in Indonesia. A lot of company in Indonesia faced financial distress. The company is said to be in financial distress if the asset value falls below the lower threshold as long as the company operates. Plat and Plat (2002), define financial distress as a stage of decline in a financial condition that occurs prior to the occurrence of bankruptcy or liquidation. According to Ross and Wasterfield (1996), financial distress is a condition where the company’s operating cash flow is not able to cover or meet the current liabilities, and that financial distress can lead a company into failure (bankruptcy).

Company performance can be analyzed by financial ratios. The financial ratios can describe the past, present, and future situation and serve as a useful indicator that can be calculated from the financial statements (Khaliq, et al., 2014). The decline in financial performance can cause the company to experience financial distress in carrying out their business operational activities.

Financial distress experienced by the company can be minimalized by supervising the financial statement. Supervision on the company’s financial statement should be conducted by the management team using the financial statement analysis method. Financial analysis has two main tools that can be applied: financial ratio analysis and cash flow analysis. Financial ratio analysis helps to evaluate the company’s financial condition to see the increase or decrease in the company’s condition and performance during the operational period. The researcher decided to use operating cash flow as the focus of the study because if a company has a high operating cash flow, thus the company has enough resources to perform its operational activities, such as paying off the loan, maintaining the company’s operating and capabilities, and making new investment without relying on external source of funding. According to Amelia (2017), the cash flow variable from the operational activities may show that the level (high or low) or operational cash flow can cause a company to experience financial distress.

Analyzing the profitability and financial leverage of the company are also important. By knowing the profitability ratio of the company, the researcher can understand the company’s capabilities to generate profits from sales, assets and capital stocks. A company is said to use financial leverage when the company uses some of its assets with interest payment securities, for example, a debt to the bank, to know the ratio of debt usage and its capital used by the company in its operational activities.

Based on Rodoni and Ali (2010), by looking at the financial condition the company can expect three circumstances that may cause financial distress, which is capital insufficiency or lack of capital, the amount of debt and interest, and suffer losses. These three conditions are interrelated. Therefore, the company must keep a good balance to avoid financial distress that may lead to bankruptcy.

The difficulty to objectively define the early stage of financial distress conditions made some researchers, including Sprinate, Zmijewski, and Altman had the interest to conduct researches to understand or to determine the company’s financial situation. The first research that focuses on bankruptcy was conducted by Altman with a 95% accuracy level to predict bankruptcy, which later became known as the Z-score model. Due to this reason, this research uses Altman research model (1968) to measure a company’s financial distress.

The five steps used by Altman in the form of financial ratios are analyzed by MDA techniques and creates a linear equation model as follow:

\[ Z-score = 1.2X_1 + 1.42X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5 \]

Description:
- \( X_1 = \text{Working Capital} / \text{Total Assets} \)
- \( X_2 = \text{Retained Earnings} / \text{Total Assets} \)
- \( X_3 = \text{Earnings before Interest and Taxes} / \text{Total Assets} \)
- \( X_4 = \text{Market Value of Equity} / \text{Book Value of Total Debt} \)
- \( X_5 = \text{Sales} / \text{Total Assets} \)
If the company has Z-score of <1.81, it shows that the company is in a high risk of and will likely to experience bankruptcy. On the other hand, if the company show a Z-score of >2.99, the company is in a good and solid condition, as shown in figure 2.1 (Altman, et al., 2013). A company with a Z-score in between 1.81 and 2.99 is in a grey area due to its susceptibility to misclassification. The grey area indicates that the company is experiencing a financial problem that must be immediately handled by the manager before the company goes bankrupt. The best critical value lies between 2.67 and 2.68, so 2.675 is indicated as the best midpoint to distinguish between companies that go on bankruptcy or not.

Correlation between Cash Flow and Operational Activities towards Financial Distress

Cash flow statement is a summary of the company’s cash receipts and disbursement in a certain period. One of the uses of cash flow information is to understand the result of the company’s operational activities. If the company’s cash flow runs smoothly, it indicates that the company’s operational activities run well. The higher the operational cash flow ratio of the company, the easier the company to get away from the financial distress condition. If the ratio of cash flow from the company operational activities is low, then it may lead the company to have fewer profits, resulting the company to experience financial distress and harder to get away from its condition. Based on the explanation above, the researcher formulated a hypothesis as follow:

Hypothesis 1: Operational cash flow harms financial distress.

Correlation between Profitability and Financial Distress

Any company in its operational activities always expect to get profits. The company’s manager knows whether the company is receiving profit by performing a profitability ratio analysis. The higher the profitability ratio of a company, the easier the company to get away from financial difficulties situation. Profitability is measured by ROA ratio (Return on Asset). The higher the ROA ratio is, the lower the likelihood of the financial distress to happen in the company. On the other hand, lower ROA ratio shows that the company is in an unstable financial performance where the company is not able to optimize its assets owned to generate profits; thus, profitability decreases and the possibility of financial distress increases. According to a research conducted by Imam and Reva (2012), a company that shows profitability has a negative effect towards financial distress, which mean that the greater profitability of a company increasingly reduces the chance of financial distress. Based on the explanation above, the researcher formulated a hypothesis as follow:

Hypothesis 2: Profitability (ROA) harms financial distress.

Correlation between Financial Leverage and Financial Distress

The financial leverage ratio is important information for the company. It helps the company to understand how far the company is financed by debt or from an outsider in running the company’s operational activities. If the company often rely on debt
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to run its operational activities, thus the company is vulnerable to financial difficulties. The lower the financial leverage that the company has, then the easier the company is to not be in a financial distress situation. On the other hand, a high financial leverage ratio means that the company uses high financial leverage to fund its operational activities. High use of leverage will increase ROE quickly and vice versa. According to Horne and Wachowicz (2011), a higher debt ratio will increase the company’s financial risk. Brigham and Houston (2011), explain that creditors will be less likely to lend additional fund to the company, thus making the company experience financial distress which will lead to bankruptcy. This shows a positive correlation between financial leverage ratio to financial distress. Based on the explanation above, the researcher formulated a hypothesis as follow:

**Hypothesis 3:** Financial leverage has a positive effect on financial distress.

**Research Conceptual Framework**

The following figure (Figure.2) shows the conceptual framework of the study.

![Figure 2 Research Concept Framework](image)

**METHOD**

This research is qualitative research based on secondary resources, by taking financial statement data that was presented by each manufacturing company that serves as the research object. The population of this study is 124 manufacturing companies in Indonesia in 2016.

**Data Collection Technique**

The data used in this study is secondary data obtained from the Indonesia Stock Exchange in the form of financial statements from manufacturing companies in Indonesia in 2016 that was downloaded through a website of www.idx.co.id. Next, the researcher used purposive sampling to get the most suitable companies to be part of the sample group: as many as 111 companies in total. The sample group, the 111 companies, was then regrouped into two categories, which are financial distress and non-financial distress based on Z-score Altman (1968). After the companies were categorized, in result 78 companies were experiencing financial distress, and 33 companies were not experiencing financial distress.

**Data Analysis Method**

The study uses two statistical methods that will be used to analyzed and to manage the data that were collected. The two statistical methods used are descriptive and regression analysis. Descriptive statistical analysis used consists of sample size, mean value, minimum value, maximum value, and stan-
standard deviation from each variable. The regression analysis model used is binary logistic because the dependent variable of this research has a dummy characteristic with a binomial size of one (1) if the company is experiencing financial distress and zero (0) if the company is not experiencing financial distress. The regression equation is as follow:

\[
\ln \left( \frac{P}{1 - P} \right) = \beta_0 + \beta_1 \text{AKO} + \beta_2 \text{PRO} + \beta_3 \text{FLV} + \varepsilon
\]

**Description:**

- \( P \) = Probability of a company experiencing financial distress
- \( \beta_0 \) = Constants
- \( \beta_1, \ldots, \beta_3 \) = Regression Coefficients
- \( \text{AKO} \) = Operating Cash Flow is cash flow from operational with net sales
- \( \text{PRO} \) = Profitability is between profit before tax and total assets
- \( \text{FLV} \) = Financial Leverage is between total debt with total capital
- \( \varepsilon \) = Error

**RESULT**

The result of descriptive statistic is used to describe the characteristics of a data. The following table shows the result of the descriptive statistic.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRO</td>
<td>111</td>
<td>-0.55</td>
<td>6.39</td>
<td>0.1120</td>
<td>0.61367</td>
</tr>
<tr>
<td>FLV</td>
<td>111</td>
<td>-6.93</td>
<td>162.19</td>
<td>2.4529</td>
<td>15.45526</td>
</tr>
<tr>
<td>AKO</td>
<td>111</td>
<td>-0.35</td>
<td>2.11</td>
<td>0.1075</td>
<td>0.22403</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>111</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Processed SPSS

Table 1 shows that the number of observation (N), which are 111 manufacture companies listed on the Indonesia Stock Exchange in 2016. It can be seen that the Profitability Variable has the lowest value at -0.55 and the highest value at 6.39 with an average value of 0.11 and a standard deviation (level of data distribution) of 0.61. This means that the level of profitability of all 111 companies is 11.2%, which can be said that the companies are not effective in using their assets to generate profits. The Financial Leverage variable has the lowest value at -6.93 and the highest value at 162.19 with an average value of 2.5 and a standard deviation (level of data distribution) of 15.46. This shows that from the 111 companies being studied, 245% of the property owned by the manufacturing companies to run their business comes from loans and corporate liabilities. Operating cash flow variable has the lowest value at -0.35 and the highest value at 2.11 with an average value of 0.10 and a standard deviation (level of data distribution) of 0.22. This shows that only 10% of operating cash flow from the 111 companies being used. It means that the company’s cash flow is so small that it may cause investors to have less interest to invest in the company.

Besides the descriptive statistical analysis, the study also uses binary logistic regression analysis. The result is shown as follow:
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Based on Table 2 above, it shows the result of hypothesis testing, namely as follow: the beta value of 7.672 with a significance of 0.04. Because it has a significance value below 0.05 and has a positive beta value, it indicates that the operating cash flow variable has a positive and a significant effect on financial distress. Hence, hypothesis 1 is accepted but has a different effect that is a positive effect.

A beta value of -20.985 with a significance of 0.00. Because it has a significance value below 0.05, it indicates that profitability variable as measured by ROA have a negative influence on financial distress. Hence, hypothesis 2 is accepted.

A beta value of 0.007 with a significance of 0.86. Because it has a significance value below 0.05 and has a positive beta value, it indicates that the financial leverage variable as measured by total debt/total capital has a positive but insignificant effect on financial distress. Hence, hypothesis 3 has the same effect but is rejected.

DISCUSSION

The Effect of Operational Cash Flow to Financial Distress

Through logistic regression, it is known that operational cash flow has a significant effect in predicting financial distress. The result of the study shows that operational cash flow has a Wald test of 4.06 with a significant value of 0.04 <Q 0.05. Thus, it can be concluded that the operating cash flow has a significant effect, but a positive influence in predicting financial distress.

The Effect of Profitability to Financial Distress

Through logistic regression, it is known that profitability has a significant effect in predicting financial distress. The result of this research shows that profitability has a significant and negative influence in predicting financial distress with the Wald test value of 19.08 and a significant value of 0.00 <Q 0.05. So, it can be concluded that profitability has a significant and negative influence in predicting financial distress. The result of this study supports researches by Vivi and Ikhsan (2017) and Nurcahyono (2014), which concludes that profitability measured by ROA brings a negative and significant effect towards financial distress in a manufacturing company. This means that the greater profitability of a company will reduce the chance of financial distress in the company.
The Effect of Financial Leverage to Financial Distress

Through logistic regression, it is known that leverage has a non-significant influence in predicting financial distress with a significant value of 0.86 > 0.05 and a Wald test of 0.30. It can be concluded that financial leverage does not have a significant but positive effect in predicting financial distress. This result supports research by Imam and Reva (2012), which shows that DER does not significantly affect a company’s financial distress condition. Debts proxies by DER cannot cause the company to experience financial distress.

The result of this study does not support research by Luciana and Kristijadi (2003), which shows that financial leverage, as measured by total debt / total capital, affect the company’s financial distress condition. They stated that the greater the ratio of financial leverage, then the greater the possibility of companies to experience financial distress.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

This study was conducted as a purpose of examining whether operational cash flow, profitability, and financial leverage in companies can predict a company’s financial distressing manufacturing company in Indonesia.

The sample used in this research consists of 111 companies, which then divided into 2 categories: 78 companies are under financial distress, and 33 companies are in non-financial distress condition. This means that more manufacturing companies in Indonesian in 2016 are experiencing financial distress, as categorized by the Z-score Altman measurement.

This study was conducted by binary logistic regression in 2016. The result of the study with binary logistic regression shows a 70.3% accurate prediction.

Operational cash flow variable significance with a level of 5% (Q), in this study operational cash flow has a significance value of 0.04 < 0.05 and has a positive effect; meaning that operational cash flow affects financial distress. The higher the company’s operating cash flow is, the smaller the chance the company has to experience financial distress. The first hypothesis in this study is accepted but has a different direction of effect.

Profitability that is being measured by ROA, profit before tax / total assets in this study has a significant value of 0.00 < 0.005 and shows a negative effect, which means that the profitability affects company’s financial distress. The greater the profitability of a company is, the lower the chance for the company to experience financial distress. Thus, the second hypothesis in this study is accepted and has the same direction of effect.

Financial leverage that is being measured by DER, total debt / total capital has a significant value of 0.86 > 0.05 and has a positive effect. This result means that financial leverage does not affect financial distress condition because debt measured by DER does not cause the company to experience financial distress. The third hypothesis in this study is rejected but shows the same direction of effect, which is a positive direction.

Recommendation

This study has a limitation regarding the sample group studied because it only gathered a sample of manufacturing companies in Indonesia only in the year of 2016. Thus, it does not have a comparison group from other types of sectors, such as non-manufacturing companies to represent companies listed in Indonesia Stock Exchange. Future studies might consider to not only focus on manufacturing companies and/or on a specific year to understand the company’s financial condition better.

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