

## THE EFFECT OF GENDER DIVERSITY AND FINANCIAL RATIOS ON FINANCIAL DISTRESS IN MANUFACTURING COMPANIES INDONESIA

Rita Tri Ariska<sup>1)</sup>, Mohammad Arief<sup>2)</sup>, Prasetyono<sup>3)</sup>  
Jurusan Manajemen Universitas Trunojoyo Madura<sup>1,2</sup>  
Jurusan Akuntansi Universitas Trunojoyo Madura<sup>2</sup>  
E-mail: [papi.arief@gmail.com](mailto:papi.arief@gmail.com)<sup>2</sup>

**Abstract:** *This study aims to determine the effect of gender diversity and financial ratios on financial distress. The data used in this study are secondary data. The population used is manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2014-2018 period with a purposive sampling technique. The number of data on manufacturing companies is as many as 141 companies, but there are only 94 companies that fall into the research criteria. The analytical method used is Logistic Regression Analysis. Based on the research results, gender diversity, net profit margin, current ratio, and debt ratio have no effect on financial distress, return on assets has a negative effect on financial distress, and working capital to total assets has a positive effect on financial distress.*

**Keywords:** *gender diversity, return on assets, net profit margin, current ratio, working capital to total assets, and debt ratio*

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### 1. Introduction

Currently, the condition of the Indonesian economy is experiencing very significant changes, causing many companies to experience financial distress. Data from the Ministry of Finance as of December 31, 2018 showed that the Altman Z-Score index was low. A company that is in the red zone or financial distress is having an index value below 1.23 for a manufacturing company. This puts the company in a bankruptcy zone. Conditions such as these will cause the company's earnings decline resulted in the dismissal of many employees that also increasingly few companies in Indonesia went bankrupt, especially in manufacturing (Tjahjono & Novitasari, 2016).

The growth of the manufacturing industry in Indonesia has decreased in recent years (CNBC Indonesia, 2019). This is because the manufacturing industry will experience raw material difficulties in March 2020 (CNN Indonesia, 2020). This raw material difficulty was triggered by the recent spread of the corona virus. Secretary of the Coordinating Minister for the Economy, Susiwijono, said that raw material difficulties occurred because 74 percent of capital goods for the manufacturing industry came from China (cnnindonesia.com).

According to Porter (1991) successful and failed companies are caused by the implementation of corporate strategies such as good governance. Good governance that is implemented will minimize the risk of the company experiencing financial distress. Good governance consists of several forming elements, one of which is gender diversity (Kristanti, 2015). The existence of good gender diversity is evident from the presence of women on the board of directors. There is an opinion which states that men are considered superior to women. Differences in the nature of men and women at work will affect work outcomes (Setiyani, 2014).

Internal factors may also affect the condition of financial distress companies. According to (Li and Du, 2011) states that the financial ratios can be used to predict the condition of the company as a failure, bankruptcy, or financial distress. The ratios used in this study are profitability ratios, liquidity ratios, and leverage ratios. This ratio is used because it selects the most widely used financial ratio to predict financial distress. Financial ratios have been tested by many previous researchers because they are proven to have an important role in evaluating financial performance and can be used to predict the sustainability of both healthy and unhealthy businesses (Gamayuni, 2006). However, not all financial ratios can be used to predict financial distress.

## **2. Research Method**

### **Sample Clarification**

The population used in this study are manufacturing companies listed on the IDX (Indonesia Stock Exchange). The sampling technique used was purposive sampling . Pengambilan engineering samples of purposive sampling is the data collection techniques used by various criteria as needed for the research. The sample criteria in this study are:

- 1) Manufacturing companies listed on the IDX (Indonesia Stock Exchange) for five years from 2014-2018
- 2) Manufacturing companies that have published annual reports on the IDX (Indonesia Stock Exchange) for five years from 2014-2018. Companies that did not publish annual reports in the 2014-2018 period were excluded from the sample.
- 3) The company publishes an annual report that provides all the required data on research variables, namely gender diversity , return on assets, net profit margin, current ratio, working capital to total assets, and debt ratio.

Annual report in rupiah (Rp). If companies that make annual reports in dollars (\$) are excluded from the study sample.

### **Research data**

The data used in this study are secondary data. The data used were obtained from reports related to research published by manufacturing companies through the Indonesia Stock Exchange. The type of data required for research is the financial statements of manufacturing companies listed on the Indonesia Stock Exchange ([www.idx.co.id](http://www.idx.co.id)). The data studied is data every year starting from the 2014-2018 period.

### **Research variable**

The variables used in this study include the dependent variable, namely financial distress and the independent variable, namely gender diversity, return on assets, net profit margin, current ratio, working capital to total assets, debt ratio.

### **Operational definition**

#### **Financial Distress**

Financial distress as referred to in this research is a condition in which a company experiences financial difficulties so that it is unable to fulfill its obligations at maturity and is threatened with bankruptcy. In this study the dependent variable is presented in a dummy form with a score of

one (1) if the company has negative earnings per share (EPS) and zero (0) if the company has positive earnings per share (EPS).

### **Gender Diversity**

Gender Diversity referred to in this study is the difference in gender balance between women and men on the board of directors, where their position can have an impact on corporate governance within the company (Kristanti et al., 2016; Ningrum & Hatane, 2017). The presence of a woman's board of directors can be calculated using the following formula.

$$GD = \frac{\text{The amount of Members of the Female Board of Directors}}{\text{The total amount of Board of Directors}}$$

### **Return On Asset (ROA)**

Return On Asset (ROA) is used to measure the ability of a company to obtain net income on assets used (Beaver, 1996; Chrissentia & Syarief, 2018; Suteja et al., 2017; Tjahjono & Novitasari, 2016; Yunelfi & Septiana, 2019). Return On Asset (ROA) can be calculated using the following:

$$ROA = \frac{\text{Net profit}}{\text{Total Assets}}$$

### **Net Profit Margin (NPM)**

Net Profit Margin (NPM) is used to measure a company's ability to generate profits from company sales (Murni, 2018; Suteja et al., 2017; Wijarnarto & Nurhidayati, 2016). Net Profit Margin (NPM) can be calculated using the following formula:

$$NPM = \frac{\text{Net Profit}}{\text{Net sales}}$$

### **Current Ratio (CR)**

Current Ratio (CR) is used to measure a company's ability to fulfill its current obligations by using current assets owned (Beaver, 1996; Chrissentia & Syarief, 2018; Suteja et al., 2017; Tjahjono & Novitasari, 2016). Current Ratio (CR) can be calculated using the following:

$$CR = \frac{\text{Current assets}}{\text{Short Term Liabilities}}$$

### **Working Capital to Total Asset (WCTA)**

Working Capital to Total Asset (WCTA) is used to measure a company's ability to generate net working capital from all its total assets (Afridola & Hikmah, 2019; Altman, 1968; Halteh et al., 2018; Sean, 2016). Negative net working capital may face problems in covering short-term liabilities because there are not enough current assets to cover these liabilities. Working Capital to Total Asset (WCTA) can be calculated using the following:

$$WCTA = \frac{\text{Current asset} - \text{Current Liabilities}}{\text{Total Assets}}$$

### **Debt Ratio (DAR)**

Debt Ratio (DAR) is used to measure how much funds come from debt to finance company assets (Beaver, 1996; Chrissentia & Syarief, 2018; Suteja et al., 2017; Tjahjono & Novitasari, 2016). Debt Ratio (DAR) can be calculated with the following:

$$DAR = \frac{\text{Total Liabilities}}{\text{Total Assets}}$$

### **Data analysis**

To test the effect of gender diversity, return on assets, net profit margin, current ratio, working capital to total assets, and debt ratio on financial distress, logistic regression analysis was used. Logistic regression is used because the dependent variable is categorical (nominal or non-metric) (Iramani, 2015: 69). Logistic regression does not need to use the classical assumption test, normality test, and heteroscedasticity on the independent variable (Ghozali, 2011: 225).

$$\ln \frac{p}{1-p} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots \dots \dots \beta_6 X_6$$

Whereas :

- $\beta_0$  : Constant
- X1 : Gender Diversity
- X2 : Return On Asset (ROA)
- X3 : Net Profit Margin (NPM)
- X4 : Current Ratio (CR)
- X5 : Working Capital to Total Asset (WCTA)
- X6 : Debt Ratio (DAR)

## **3. Results and Discussion**

### **3.1. Results**

#### **Descriptive Test**

Based on Table 1, it can be seen that the gender diversity variable as a whole has a minimum value of 0 and a maximum value of 0.67. Meanwhile, the average value on this variable is 0,1085 which indicates that the number of female directors is smaller than the number of directors. Thus, for each total number of directors there are only 1,085 female directors. The standard deviation value of 0.16004 is greater than the average value which indicates that there is a spreading pattern of data distribution, so that it becomes a high variation in the value of gender diversity.

The overall return on assets (ROA) ratio has a minimum value of -0.55 and a maximum value of 2.52. While the average value of this variable is 0.0542, which indicates that on average each 1 company asset can generate Rp. 0.0542 in profit. The standard deviation value is 0.15982 where the standard deviation value is higher than the average value indicating that there is a spreading pattern of data, so that it becomes a high variation in ROA values.

The overall Net Profit Margin (NPM) ratio has a minimum value of -43.45 and a maximum value of 6.32. While the average value of this variable is -0.0845, which indicates that the

average reduction of 1 sale can reduce 0.0845 of the company's profit. The standard deviation value of 2.08794 is greater than the average value which indicates that there is a pattern of spreading data, so that it becomes a high variation in the NPM value.

The overall current ratio (CR) is a minimum value of 0 and a maximum value of 23,96. Meanwhile, the average value is 2,3892, which indicates that the current asset value is higher than current debt. So, every Rp. 1 current debt can be filled with Rp. 2,3892 current assets owned by the company. The standard deviation value of 2.51996 is greater than the average value indicating that there is a pattern of collecting data distribution, so that it becomes a low variation in the CR value.

The overall working Capital to Total Asset (WCTA) ratio has a minimum value of -3.25 and a maximum value of 5.48. Meanwhile, the average value is 0.1838, which indicates working capital is lower than current assets. So every Rp. 1 of current assets produces Rp. 0.1838. The standard deviation value of 0.40243 is greater than the average value which indicates that there is a pattern of spreading data, so that it becomes a high variation in the WCTA value..

The overall Debt Ratio (DAR) ratio has a minimum value of 0 and a maximum value of 12.97. While the average value is 0.5192 which indicates that the total debt value is lower than total assets. This shows that 51.92% of the assets owned by the company are financed by debt. So, every Rp. 1 of the company's assets is financed by a debt of Rp. 0.5192. The standard deviation value of 0.66601 is greater than the average value which indicates that there is a pattern of spreading data, so that it becomes a high variation in the DAR value.

**Table 1**  
**Independent Variable Descriptive Statistics**  
**Descriptive Statistics**

|                    | N   | Minimum | Maximum | Mean   | Std. Deviation |
|--------------------|-----|---------|---------|--------|----------------|
| GD                 | 465 | .00     | .67     | .1085  | .16004         |
| ROA                | 465 | -.55    | 2.52    | .0542  | .15982         |
| NPM                | 465 | -43.45  | 6.32    | -.0845 | 2.08794        |
| CR                 | 465 | .00     | 23.96   | 2.3892 | 2.51996        |
| WCTA               | 465 | -3.25   | 5.48    | .1838  | .40243         |
| DAR                | 465 | .00     | 12.97   | .5129  | .66601         |
| Valid N (listwise) | 465 |         |         |        |                |

Based on Table 2 shows that the descriptive statistics of the dependent variable are dummy variables. In the dependent variable, there are 2 categories, namely Non Financial Distress and Financial Distress. Companies that are included in the Financial Distress category if Earning per Share (EPS) is negative. In the category of Non-Financial Distress there are 363 data from 465 data by the percentage of 78,1 %. While in the category of Financial Distress there are 102 data from 465 data by the percentage of 21,9 %.

**Table 2**  
**Descriptive Statistics Variable Dependen**  
**FD**

|                              | Frequency | Percent | Valid Percent | Cumulative Percent |
|------------------------------|-----------|---------|---------------|--------------------|
| Valid Non Financial Distress | 363       | 78.1    | 78.1          | 78.1               |
| Financial Distress           | 102       | 21.9    | 21.9          | 100.0              |
| Total                        | 465       | 100.0   | 100.0         |                    |

**Statistic test**

Statistical analysis using logistic regression partially was carried out to determine the relationship of the independent variables to the dependent variable. The test is carried out using a significant value of 5% or 0.05 because it is considered adequate in the comparison between the decision making variables.

**Table 3**  
**Logistic Regression Analysis Test Results**

**Variables in the Equation**

|                        | B       | S.E.   | Wald   | df | Sig. | Exp(B) |
|------------------------|---------|--------|--------|----|------|--------|
| Step 1 <sup>a</sup> GD | .008    | 1.188  | .000   | 1  | .994 | 1.008  |
| ROA                    | -93.915 | 12.688 | 54.786 | 1  | .000 | .000   |
| NPM                    | .148    | .107   | 1.930  | 1  | .165 | 1.160  |
| CR                     | -.156   | .206   | .570   | 1  | .450 | .856   |
| WCTA                   | 2.172   | .944   | 5.290  | 1  | .021 | 8.774  |
| DAR                    | .539    | .649   | .688   | 1  | .407 | 1.714  |
| Constant               | -1.115  | .521   | 4.587  | 1  | .032 | .328   |

Source: Results of Data Processing (2020)

Based on Table 3 above, the logistic recession model obtained is as follows:

$$\ln \frac{p}{1-p} = -1,115 + 0,008 - 93,915 + 0,148 - 0,156 + 2,172 + 0,539$$

1) *Hosmer and Lemeshow Test*

**Table 4**  
**Hosmer and Lemeshow Test Results**  
**Hosmer and Lemeshow Test**

| Step | Chi-square | df | Sig. |
|------|------------|----|------|
| 1    | 45.231     | 8  | .000 |

Source: Results of Data Processing (2020)

Based on Tabel 4 above are obtained Chi-square of 45.231 with a significance value of 0.000 and df 8. From these results it appears that the significance value less than 0.05, which means that H<sub>0</sub> is rejected in which gender diversity, return on assets, net profit margin, current ratio, working capital to total assets, and debt ratio are unable to predict financial distress simultaneously.

2) *-2 Log Likelihood Test*

The results of the -2 log likelihood test can be seen in the table below

**Table 5**  
**Test Results -2 Log Likelihood Beginning (Block Number=0)**

|           |   | <b>Iteration History<sup>a,b,c</sup></b> |              |
|-----------|---|--|--------------|
|           |   | -2 Log<br>likelihood                     | Coefficients |
| Iteration |   |  | Constant     |
| Step 0    | 1 | 491.028                                  | -1.123       |
|           | 2 | 489.266                                  | -1.264       |
|           | 3 | 489.264                                  | -1.269       |
|           | 4 | 489.264                                  | -1.269       |

Source: Results of Data Processing (2020)

Following is the output in block 1 as follows:



**Table 6**  
**-2 Log Likelihood End (Block Number = 1) Test Results**

**Iteration History<sup>a,b,c,d</sup>**

| Iteration | -2 Log likelihood | Coefficients |      |         |       |       |       |       |
|-----------|-------------------|--------------|------|---------|-------|-------|-------|-------|
|           |                   | Constant     | GD   | ROA     | NPM   | CR    | WCTA  | DAR   |
| Step 1 1  | 362.061           | -1.279       | .373 | -6.240  | -.041 | .013  | -.431 | .973  |
| 2         | 281.330           | -1.758       | .672 | -14.919 | -.039 | .058  | -.825 | 1.630 |
| 3         | 205.853           | -1.467       | .794 | -32.838 | -.006 | .010  | .391  | 1.082 |
| 4         | 169.715           | -1.222       | .618 | -53.717 | .055  | -.051 | 1.074 | .700  |
| 5         | 156.278           | -1.130       | .327 | -74.676 | .103  | -.099 | 1.614 | .543  |
| 6         | 153.553           | -1.121       | .092 | -89.010 | .137  | -.138 | 2.017 | .537  |
| 7         | 153.391           | -1.116       | .014 | -93.573 | .147  | -.154 | 2.160 | .538  |
| 8         | 153.390           | -1.115       | .008 | -93.913 | .148  | -.156 | 2.172 | .539  |
| 9         | 153.390           | -1.115       | .008 | -93.915 | .148  | -.156 | 2.172 | .539  |
| 10        | 153.390           | -1.115       | .008 | -93.915 | .148  | -.156 | 2.172 | .539  |

Source: Results of Data Processing (2020)

Based on Table 5 and Table 6 above, it can be seen that the comparison between the value of -2 log likelihood of the first block (Block Number = 0) is 489,264 which is greater than the value of -2 log likelihood of the second block (Block Number = 1) which shows a good regression model. The second -2 log likelihood block value (Block Number = 1) shows a better regression model because it has decreased more.

### 3) Nagelkerke R Square Test

The results of the Nagelkerke R Square test can be seen in the table below.

**Table 7**  
**Nagelkerke R Square Test Results**

**Model Summary**

| Step | -2 Log likelihood    | Cox & Snell R Square | Nagelkerke R Square |
|------|----------------------|----------------------|---------------------|
| 1    | 153.390 <sup>a</sup> | .514                 | .790                |

Source: Results of Data Processing (2020)

Based on Table 7 above, it can be seen that the Nagelkerke R square value of 0.790 shows that the contribution of gender diversity, ROA, NPM, CR, WCTA, DR variables is 79% in



influencing financial distress while the remaining 21% is influenced by other independent variables.

### **3.2. Discussion**

#### ***Influence of Gender Diversity Against Financial Distress***

The results of the logistic regression analysis show that the significant value ( $\alpha$ ) of 0.994 is greater than the level of significance of 0.05 (5%) where H<sub>0</sub> is accepted. H<sub>1</sub> is rejected. It can be concluded that gender diversity has no significant effect on financial distress. Based on the results of research data minimum value of the board of directors of women sebanyak number 0 and the maximum value of as much as 0,67 %. This suggests that gender diversity has no effect on financial distress. According to (Setiyani, 2014), gender diversity in the board of directors made up of members of the board of both men and women. Currently, the role of women in the world of work looks better, so the number of women pursuing career paths has increased significantly. However, there are still many companies who do not believe in making women on the board of directors. Therefore, gender diversity has no effect on financial distress. The results of this study are in line with research (Gusman, Zitul, & Rifa, 2017; Rose, 2007; Sholikhah, 2018). However, this research is not in line with research which is not in line with (Kristanti et al., 2016; Ningrum & Hatane, 2017) which states that gender diversity has a negative effect on financial distress.

#### ***The Effect of Return On Assets (ROA) on Financial Distress***

The results of the logistic regression analysis show that the significant value ( $\alpha$ ) of 0.000 is smaller than the level of significance of 0.05 (5%) where H<sub>0</sub> is rejected. received. It can be concluded that return on assets has a significant negative effect on financial distress. Based on the results of data peneltian minimum value amounted to -0,05 and a maximum value of 2, 52 which indicates that many manufacturing firms are able to manage assets properly so as to generate a good profit as well. This also shows that the company has succeeded in marketing its products, so that it will increase sales which in turn will also increase the profits. The results of this study are in line with research (Chrissentia & Syarief, 2018; Lakhshan & Wijekoon, 2012; Setiyawan, 2020; Susilawati et al., 2017; Tjahjono & Novitasari, 2016) which states that return on assets has a negative effect on financial distress . Where a high ROA reflects the company's ability to manage assets against profit more effectively and efficiently. However, this study is not in line with research (Rohmadini et al., 2018) which states that return on assets has no effect on financial distress.

#### ***Influence of Net Profit Margin (NPM) on Financial Distress***

Based on the results of the logistic regression analysis test, it shows that the significant value ( $\alpha$ ) of 0.165 is greater than the level of significance of 0.05 (5%) where H<sub>0</sub> is accepted and H<sub>1</sub> is rejected. It can be concluded that the net profit margin has no significant effect on financial distress. Based on the results of research data, the minimum value of -43,45 and the maximum value of 6.32 shows that the net profit margin generated is negative and getting smaller. The greater the NPM, the better the company's ability to earn high profits, so that the company will avoid financial problems that will result in financial distress. However, in this study the company produced a negative and decreasing NPM. The results of this study are in line

with (Kusmaningrum, 2018) which states that net profit margin has no effect on financial distress. However, this study is not in line with the theory that net profit margin has a negative effect on financial distress (Almilia & Kristijadi, 2003; WA Putra, 2015).

#### ***Effect of Current Ratio (CR) on Financial Distress***

The results of the logistic regression analysis show that the significant value ( $\alpha$ ) of 0.450 is greater than the level of significance of 0.05 (5%) where H<sub>0</sub> is accepted and H<sub>1</sub> is rejected. It can be concluded that the current ratio has no significant effect on financial distress. Based on the results of research data, it shows that the minimum value is 0 and the maximum value is 23,96. Current ratio is assessed by the company's ability to pay current debts with current assets. The results showed that the current ratio had no effect on financial distress. According to (Lakhshan & Wijekoon, 2012) states that a high current ratio indicates that the company is able to pay short-term obligations well. The higher this ratio, the less likely the company will experience financial distress. The results of this study are in line with (Lakhshan & Wijekoon, 2012; Tjahjono & Novitasari, 2016; Yunelfi & Septiana, 2019) which states that the current ratio has no effect on financial distress. This research is not in line with (Chrissentia & Syarief, 2018; Noviandri, 2014; Setiyawan, 2020; Yustika, 2015) which states that the current ratio has a negative effect on financial distress.

#### ***The Effect of Working Capital to Total Asset (WCTA) on Financial Distress***

The results of the logistic regression analysis show that the significant value ( $\alpha$ ) of 0.021 is smaller than the level of significance of 0.05 (5%) where H<sub>0</sub> is rejected, H<sub>1</sub> is accepted. It can be concluded that working capital to total assets has a significant positive effect on financial distress. Based on the results of the research data, it shows that the minimum value is -3,25 and the maximum value is 5.48. According to (Lakhshan & Wijekoon, 2012), working capital to total assets is used to indicate the company's ability to generate working capital of the total assets owned. The higher the WCTA, the smaller the possibility of the company experiencing financial distress. However, in this research, WCTA has a positive effect on financial distress. The results of this study are in line with research (Asia & Irwan, 2015; Darmawan & Supriyanto, 2018) which states that working capital to total assets has a positive effect on financial distress. However, this research is not in line with (Afridola & Hikmah, 2019; Lakhshan & Wijekoon, 2012) which states that working capital to total assets has a negative effect on financial distress.

#### ***Effect of Debt Ratio (DR) on Financial Distress***

The results of the logistic regression analysis show that the significant value ( $\alpha$ ) of 0.407 is greater than the level of significance of 0.05 (5%) where H<sub>0</sub> is accepted, H<sub>1</sub> is rejected. It can be concluded that the debt ratio has no significant effect on financial distress. Based on the results of the research data shows that the minimum value is 0 and the maximum value is 12.97. This shows the high level of companies in managing company assets that are financed by debt. The higher the debt, the higher the risk of default, which can cause financial distress. In this study, the debt ratio has no effect on financial distress. The results of the study are in line with research (Aisyah et al., 2017; Tjahjono & Novitasari, 2016) which states that debt ratio has no effect on financial distress. However, this research is not in line with the theory (Andre & Salma, 2014; Aswan, Andi & Muhtar, 2017; Chrissentia & Syarief, 2018; Lakhshan & Wijekoon, 2012;

Susilawati et al., 2017; Yunelfi & Septiana, 2019; Yustika, 2015) which states that the debt ratio has a positive effect on financial distress.

#### **4. Conclusion**

From the results of discussion above it will be explained the results of research:

- 1) Gender diversity is not a significant effect against financial distress. High gender diversity does not necessarily mean that companies will avoid financial distress, because good decision making depends on the ability of each board of directors.
- 2) Return on assets has a significant negative effect on financial distress. High return on assets shows that the company is able to manage total assets to earn a profit, so that the possibility of the company experiencing financial distress is getting smaller.
- 3) Net profit margin has no significant effect on financial distress. A high net profit margin does not mean that a company will not experience financial difficulties because it could be that sales generated come from accounts receivable.
- 4) Current ratio has no significant effect on financial distress. A high current ratio does not necessarily determine that the company will be free from financial distress, there are many other factors that can affect the decline in profits such as too high global operating expenses.
- 5) Working capital to total assets has a positive and significant effect on financial distress. High working capital to total assets can be caused because the assets owned come from debt so that the risk of default is high which will cause financial distress to also be higher.
- 6) Debt ratio does not have a significant effect on financial distress. A high debt ratio does not determine that the company is in a state of financial difficulty, because it could be that the company is able to manage and pay the debt properly and on time.

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