

Integrating Capital Structure, Financial and Non-Financial Performance: Distress Prediction of SMEs

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ABSTRACT

Objective – The growth of SMEs in Indonesia is rising from year to year. As an anticipation of bankruptcy, predictions can be made in an integrated means from the perspective of capital structure, financial, and non-financial performance.

Methodology/Technique – A sample of 39 companies were selected using purposive sampling during the research period of 2013-2017. The results of the statistical logistic regression show that profitability is an important factor in predicting financial distress of the SMEs in Indonesia.

Findings – The operating income to total assets has a negative and significant effect on SMEs financial distress. Meanwhile, retained earnings to total assets have a positive impact. Indonesian SMEs must be efficient in their operational costs to avoid financial distress.

Novelty – In addition, sales are also important. If the company's sales are high, and the operational cost efficiency is maintained, the retained earnings will increase. This means that the company will be safe and able to avoid financial distress.

Type of Paper: Empirical.

Keywords: Capital Structure; Financial; Distress; Non-Financial; Performance.

Reference to this paper should be made as follows: Kristanti F T; Rahayu S; Isywardhana D; (2019). Integrating Capital Structure, Financial and Non-Financial Performance: Distress Prediction of SMEs, *Acc. Fin. Review*, 4 (2): 56 – 62 [https://doi.org/10.35609/afr.2019.4.2\(4\)](https://doi.org/10.35609/afr.2019.4.2(4))

JEL Classification: G32, G33, G34.

1. Introduction

SMEs are the backbone of the Indonesian economy. Data from XXX show that the number of SME business-units is far greater than large-scale businesses. In 2017, there were 62,922,617 small and medium-size enterprises compared to only 5,460 large-scale businesses.

* Paper info: Revised: March 11, 2019

Accepted: July 15, 2019

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Likewise, when viewed from an employment perspective, a total of 116,673,416 employees work for SMEs whilst only 358,769 work for the large businesses. In addition, the GDP value of SMEs is 7,704,635 and 5,136,223.1 for large businesses.

Holcombe (1998) states that SMEs have become the engine of economic growth although in reality, (Majid, Hamdani, Nasir & Faisal 2018) it is not an easy thing to manage the sustainability of SMEs. The latest global economic and financial crises highlight the impact of financial distress (FD) on SMEs across the economy (OECD, 2009). However, we know that the SMEs still need to be encouraged, so that they can continue growing and becoming larger and accomplish their greater role in the nation's economy. Moreover, one of the government's efforts to fight poverty and reduce unemployment is through real-sector acceleration and empowering SMEs (Majid et. al., 2018). The predictions of company failure are an interesting topic for some researchers. Many studies have examined certain groups/corporate sectors, such as manufacturing, banking, property, and others. However, only few studies focus on small and medium-sized enterprises (SME), particularly in Indonesia. In addition, the topics concerning SMEs are varied. Hamzani and Achmad (2018) examine the predictions of bankruptcy for SMEs in Pontianak, Indonesia. They conclude that no SMEs are predicted to go bankrupt, and there are no differences in financial performance between the two groups. Sunarjanto and Roida (2014) forecast financial distress among SMEs in Indonesia concluding that EBITDA is a robust variable to predict the financial distress. Meanwhile, Majid et. al. (2018) highlights the demand of credit among SMEs and economic growth in Indonesia, whilst Satria (2018) examines brand marketing communications in SMEs in Indonesia. Finally, Machmud and Huda (2011) examine SMEs' access to finance.

The impact of financial distress on stakeholders can be either direct or indirect (Ma'aji, Abdullah, Khaw, 2018). Shareholders, creditors, employees, governments, and communities are all affected by financial distress. Stakeholder behavior plays an important role in the occurrence of financial distress particularly among SMEs, both from an economic and financial perspective. In fact, some authors agree that the SMEs may have a higher business risk compared to larger companies (Queen & Roll, 1987; Altman & Sabato, 2007).

Having regard to the points above, this study aims to determine the predictors of financial distress among SMEs in Indonesia, based on the behavior of stakeholders. The results of this study are expected to enhance the depth of knowledge in the financial field, particularly within corporate finance concerning financial distress of SMEs. It is important for companies to know the predictors of financial distress so that they can take precautions before financial problems occur. Meanwhile, for the government, the results of this study are expected to be one of the bases for policy development, particularly in the early stages of financial distress before a SME enters bankruptcy.

This paper is organized as follows: Section 2 is the theoretical framework of this study which contains the literature review on theories of financial distress, capital structure, as well as financial and non-financial performance ratios; Section 3 contains the methodology which is used to prove the hypothesis; Section 4 presents the empirical results based on the statistical tests; Section 5 presents a discussion on the empirical results; and Section 6 concludes the study and discussed the implications and limitations of the research.

2. Literature Review

Previous studies regarding prediction models for financial distress mostly distinguish financial distress in two ways: legal state and doorway to distress state (Ashraf, Felix & Serrasqueiro, 2019). Financial distress is a condition whereby a company's net-worth shares are smaller than the value of its books (Wang & Deng, 2006). Cheng, Su, and Li (2006) classify financial distress as a reduction or negligence in paying dividends for five consecutive years.

The financial prediction model will guarantee whether research using a variety of predictors may provide the best predictions. Tinoco and Wilson (2013) test the Altman (1986) Z score model and find that its accuracy is lower than the original study. Jafari and Ghafoor (2017) in Pakistan conclude that the logit model

is better than the MDA model. Nam et. al. (2008) in Korea states that hazard models have a higher accuracy than logit models.

Research predicting bankruptcy for SMEs does not attract international attention because of the unavailability of financial data and the existence of different definitions and policies regarding small businesses (Yoon & Kwon, 2010). Edminister (1972) is an early study on business failure of SMEs using the MDA statistical-technique with seven financial ratios. His approach produces 93% accuracy. In Thailand, Sirirattanaphonkun and Pattarathammas (2012) use the MDA model and logistic regression to find evidence that logit regression has a higher level of accuracy. In Malaysia, Ma'aji et. al. (2018) uses corporate governance as well as financial and non-financial variables to conclude that the predicting variables are monitoring and evaluation. Controlling shareholders, the number of directors, and the gender of managing directors are significant predictors for financial distress among SMEs. In Spain, Garcia-Posada and Mora-Sanguinetti (2013) conclude that bankruptcy and mortgage foreclosure procedures are not perfect substitutions. In Belgium, Cultrera and Bredaart (2016) found that profitability and liquidity are predictors for bankruptcy among SMEs in their country.

Because the access of the SMEs is low toward public debt (Cole & Wolken, 1995; Petersen & Rajan, 1994; Scherr, Sugrue & Ward, 1993), SMEs will usually use internal funding sources. SMEs tend to use friends and family as the source of funds or retained earnings before they use external resources, such as Myers's (1984) pecking order theory. The more difficult the SMEs find it to obtain external finance, the higher the risk of failure will be. If the SMEs experience financial distress, they will need a large amount of money to restructure. This depends on the number of workers and their willingness to make financial concessions. Effective and efficient labor will be able to solve the company's economic and financial problems. The main issue of corporate failure is liquidity (Coleman, 2000). When liquidity problems occur, other problems can arise, such as difficulty in gaining access to external financing, so that it becomes very expensive and difficult to manage. As a result, this can increase the risk of failure. Customers can influence the company in terms of commercialization that will affect the level of risk and development (Raymon & St-Pierre, 2002). Customers can also influence sales and company profits as they can easily choose companies that are not facing financial distress. According to the customer, a healthy company will provide better service than the companies which are experiencing financial difficulties. Thus, the customer can have a negative effect on the financial distress of a company.

3. Research Methodology

This study used logistic regression because the dependent variable was a dummy variable, which was coded 1 if the company experiences financial distress (FD) and 0 if not. Companies were said to experience a FD if they have a negative Earning per Share, which is similar to the study of Elloumi and Guyie (2001) and Kristanti, Rahayu, and Huda (2016). Purposive sampling was used for all companies listed on the Indonesian Stock Exchange. The criteria are that the company is classified as a Small or Medium Business (SMB) according to Law No. 20 of 2008, namely they they have an income between 300 million - 50 billion rupiahs, and that the company has complete research-variable data during the study period. Using the 2013-2017 research period, 39 companies were selected as the sample. To assess whether the model was fit with the data, the Omnibus and Hosmer Lemeshow tests were performed.

The logistic regression model used is:

$$\ln \frac{p}{1-p} = B_0 + B_1 DAR + B_2 GDIV + B_3 DIR + B_4 AGE + B_5 CR + B_6 NWT A + B_7 STA + B_8 OITA + B_9 RET A + B_{10} SIZE$$

The DAR shows that the company's capital structure is measured by the leverage ratio. Total debt was divided by total assets. Meanwhile, GDIV, DIR and AGE reflected non-financial ratios. GDIV was measured using a dummy variable, in which value 1 was given if a company had a woman on the board of directors, and value 0 was given if it did not have any women on the board. DIR was measured by the number of directors. AGE was the age of the company measured from the time the company was founded. Financial performance variables were measured using the following variables. Furthermore, STA was measured by short term liabilities divided by total assets. CR is the company's liquidity measured by dividing its current assets by its current debt. NWTa was measured by net working capital divided by total assets. On the other hand, OITA showed the efficiency of operational costs measured by dividing EBIT by total assets. RETA was measured by dividing retained earnings by total assets. In addition, Size shows the size of SMEs measured by log total assets.

4. Results

The descriptive data of the Indonesian SMEs within the study period are shown in Table 1. The selected samples are 190 with 38 selected companies. Most of the variables have a standard deviation greater than the mean (DAR, current ratio, NWTa, STA, OITA, and RETA). This shows that the data in the study is varied.

Table 1. Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
FD	0	1	0.51	0.501
DAR	0	20.7100	.7344	1.9278
GDIV	0	1	0.36	0.482
DIR	1	5	2.72	1.070
AGE	0.7782	1.6628	1.3411	0.1626
CR	0	923.3500	22.5757	78.3120
NWTa	-12.4346	1.3916	-0.0688	1.5051
STA	0.0000	4.8475	0.2862	0.6411
OITA	-1.1930	1.2014	-0.0345	0.2183
RETA	-80.0606	104.7722	-1.7899	13.1785
Size	3.7360	7.4655	5.5353	0.7900

The Omnibus test has a Chi-square value of 47.938 which is significant with a probability of 0.00. This indicates that the model is fit for the data. The Hosmer and Lemeshow test shows that the Chi-square value is 14.168 with a probability of 0.77, which means that the model can be accepted because it is able to predict the value of its observations. Nagelkerke R Square has a value of 0.297, which means that the variability of financial distress, which can be explained by the dependent variable, is 29.7%.

Table 2. The Test of Model Results

Omnibus Test of Model	Chi-square 47.070	Sig. 0.000
Hosmer and Lemeshow test	Chi-square 10.762	Sig. 0.214
Nagelkerke R Square	0.293	

Source: Estimation Results

The classification table calculates the correct and incorrect estimation values. In a perfect model, all cases show the actual observation value, namely the dependent variable distress (1) and no distress (0) with 100% forecasting accuracy. The estimation results show that the accuracy level in this model is 75.3% (Table 3).

Table 3. Classification Table

Observed		FD (EPS negative)		Percentage Correct
		0	1	
FD (EPS negative)	0	80	14	85.1
	1	33	63	65.6
Overall Percentage				75.3

The statistical test results show that only the significant variable is operational income to total assets (with prob. 0.000) which affects the financial distress of SMEs in Indonesia. The higher the operating ratio income to total assets is, the smaller the likelihood that the SME will experience financial distress. These results are consistent with the study of Cultrera and Bredaart (2016) in Belgium.

The mathematical models produced are:

$$\ln \frac{p}{1-p} = 1.614 + 0.404 \text{ DAR} + 0.065 \text{ GDIV} - 0.093 \text{ DIR} - 0.180 \text{ AGE} - 0.001 \text{ CR} - 0.396 \text{ NWT A} \\ - 0.300 \text{ STA} - 10.113 \text{ OITA} + 0.141 \text{ RET A} - 0.227 \text{ SIZE}$$

Table 4. Statistical Results

	B	Wald	Sig.	Exp(B)
DAR	0.404	0.616	0.432	1.497
GDIV	0.065	0.034	0.854	1.067
DIR	-0.093	0.366	0.545	0.911
AGE	-0.180	0.027	0.869	0.835
CR	-0.001	0.147	0.701	0.999
NWT A	-0.396	2.419	0.120	0.673
STA	-0.300	0.537	0.464	0.741
OITA	-10.113***	14.265	0.000	0.000
RET A	0.141***	5.912	0.015	1.151
SIZE	-0.227	0.761	0.383	0.797
Constant	1.614	0.467	0.494	5.024

*** sig. at 1% (Source: Estimation Results)

5. Discussion

On average, SMEs in Indonesia experience financial difficulties and have a capital structure that is not conservative during the research period. The statistical results show that capital structure does not have a significant effect on the financial distress among SMEs. This is contrary to the study of Abdullah, Ahmad, Rus and Zainudin (2014) and Abdullah, Ma'aj, and Khaw (2016) who found evidence of a significant debt ratio to predict the SMEs' financial distress. Overall, SMEs in Indonesia have a relatively low capital structure even though they are not conservative (mean = 73.44%). This shows that most SMEs have large external capital, but they are able to fulfil their obligations, so that they are protected from financial distress.

The gender and size of the board of directors do not significantly affect the financial distress of SMEs in Indonesia. This is not consistent with research by Ma'aji et. al. (2018) who conclude that gender and size of the board of director are significant predictors of SME financial distress in Malaysia. The GDIV mean is 0.36 indicating that the board of directors in SMEs varies in terms of gender. Even so, their role is not too significant in the decision-making process of the company. The results of this study also show that the size of the board of directors does not affect financial distress. Numbers are not important for SMEs, because the most important consideration is the effectiveness of the directors in running the company's operations.

The average company has positive liquidity, even though their net working capital may show a negative mean. Indeed, liquidity and working capital show short-term conditions, but if it is associated with a non-conservative capital structure, long-term debt can be used to cover negative working capital. The results of the statistical tests show that liquidity and working capital have no significant effect on the financial distress of SMEs. This is in line with Abdullah's study (2016) on Malaysian SMEs.

The STA, Age, and Size of SMEs do not significantly affect financial distress. Sales to total assets show the amount of sales compared to the total assets. The size of the proportion ratio will not affect financial distress. These results are in line with Abdullah et. al. (2016). This is because financial distress also depends on cost factors.

Although it is not significant, age has a negative influence on financial distress. This is in line with the study of Altman, Sabato, and Wilson (2010), Abdullah et. al. (2014), and Abdullah et. al. (2016). The longer the company can survive, the higher the possibility for distress decreases.

Statistical tests show that only operating income to total-asset variable affects the likelihood of a company experiencing financial distress. Operating income also shows the efficiency of the company's operational costs. If the company can carry out cost efficiency (COGS and other operating costs), then, operating income can be greater. If the operating income is greater, the company will be able to avoid financial distress. Operating income also reflects the company's business risk. The greater the operating income is, the smaller the business risk will be. To reduce the company's business risk, SMEs in Indonesia can do two important things: increasing sales and/or making operational costs efficient. This cost efficiency can be done from the start of the production component, namely the cost of goods sold (raw materials, direct labor, and overhead costs). In addition, cost efficiency can also be performed on operational cost components, such as salary, general and administrative, and sales costs.

The results of this study are not as accurate as those of Altman and Sabato (2007), Luppi, Marzo and Scorcu (2007), Abdullah et. al. (2014), and Abdullah et. al. (2016) with 87.2%, 85%, 81.2% and 84.3% respectively. With an accuracy of 75.3%, companies can use the results of this study as an insight on sales and operating costs.

For SMEs in Indonesia, the ratio of operating income to total assets is a determinant factor for the likelihood that a company will experience financial distress. Thus, selling and cost efficiency are crucial for Indonesian SMEs. Companies must not only be able to increase sales, but must be more efficient in their operational costs at the same time. Companies can make policies that support both methods. Aggressive marketing policies, sound financial management, optimum labor policies without sacrificing the rights of others, efficiency of operational costs are tools that can be used by management of Indonesian SMEs.

On the other hand, the government can develop and implement policies to support Indonesian SMEs to continue developing into larger businesses by creating a more conducive business climate and more definite rules that enable Indonesian SMEs to move more aggressively. Opening a way to create business opportunities abroad can also be implemented by governments for certain types of businesses.

6. Conclusion

SMEs play an important role in the economy, and therefore, SMEs must be able to survive and avoid financial distress. On the other hand, maintaining sustainability is not easy for the SMEs. The results of this study indicate that the ratio of operating income to total assets is a determinant factor for Indonesian SMEs to avoid financial distress. Therefore, in order to maintain their sustainability, SMEs must be able to continue increasing their sales. The increase in sales will be futile when followed by an increase in costs with a greater proportion. Thus, the efficiency of operational costs are also an important concern for SMEs in Indonesia. Without this, the increase in sales will be useless. Indonesian SMEs have good access to external financing. This is proved by their non-conservative capital structure. Indonesian SMEs must also decrease their financial risk through optimizing capital requirements with external financing. All of these will be achieved if

there is real support from the government, so that SMEs can develop into larger enterprises, namely by regulating pro-SMEs policies.

This study does not use any macro variables as predictors and is only a 10 year study. Therefore, future researchers can extend the research period and use additional macro variables. In addition, the study of the survival analysis of the SMEs should be explored further.

Acknowledgements

This paper is part of the Fundamental Grants of the Directorate General of Higher Education (Dikti) of 2019 funding. (No. 2879/L4/PP/2019).

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