Estimating The Effect of Strategic Factors on Financial Distress: An Empirical Study of State-Owned Enterprises in Indonesia

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ABSTRACT
This study aims to analyze the phenomenon of financial distress by State-Owned Enterprises or BUMN. The key variables that affect BUMN financial distress are investment growth, working capital growth, retained earning growth, equity growth, real activities earning management, and earnings before interest independent of financial distress. The data used in this study consisted of 32 BUMN with 48 observations of the last few years. The results of the study have demonstrated that the overall variable independent of the effect significantly against financial distress. The contribution of this research is to provide input for management to evaluate the level of financial distress and make efforts to improve the level of financial distress through corporate strategies and policies, especially on key variables that affect financial distress. Originality who became novelty of research this is the measurement of financial distress that use the approach of the theory of marginal, at once gave contributions conceptual and methodology measurement of financial distress,

Keyword: *Financial distress, Financial management, Marginal approach.*

1. INTRODUCTION

This research is focused on the financial distress analysis of state-owned enterprises or BUMNs, by taking into account many related key variables. This research is one of the topics that have an important role, especially in comprehensively revealing the phenomenon of BUMN financial difficulties. State-Owned Enterprises as stated in Article 9 of Law Number 19 the Year 2003 consists of two forms of companies, namely Persero and Public Companies. The objectives of establishing a BUMN in the form of a Persero are: (a) to provide high-quality and highly competitive goods/services, and (b) to pursue profits to increase company value. Meanwhile, the objective of establishing a BUMN in the form of a Public Company is to carry out business for the public benefit in the form of providing quality goods or services at prices affordable to the public based on the principles of sound company management.

Based on the potential for financial distress increasingly serious, the study of financial distress is important to do and is expected to provide input to the stakeholder major state-owned companies against key variables that must be considered in preparing strategies and corporate policies. The results of this research on financial distress are also expected to provide an early signal since the preparation of operational-tactical planning and strategic planning so that implementation can be anticipated if there is a change in the key variables that affect financial distress.

Based on the phenomenon of financial distress, this study contains research gap in categories, namely (a) a practical gap or the occurrence of financial distress which is marked by dependence on subsidies and experiencing losses, or not following the purpose of establishing BUMN, and (b) conceptual gap or improving the measurement of financial distress as the novelty of this study.

Based on the advantages of the concept of newness or novelty measurement of financial distress based on the score marginally mentioned above, it can be stated that the research it can give contributions is significant to the implementation of the assessment of financial distress on State-Owned Enterprises. Study these can be implemented in terms of giving feedback to the stakeholder's major companies such as holders of shares, the management company, employees, customers, suppliers, banks, practitioners, researchers, and the others are concerned about the company. Results of the research are in the form of estimation equation regression linear multiple which can be used as an instrument or tool in the process of decision -making SOEs.

2. LITERATURE REVIEW

2.1. Marginal theory

The marginal concept is the application of differential calculus to the behavior of consumers and producers, as well as determining market prices for optimal quantities (Li et al., 2007) and (Rahman & Utomo, 2017). The implementation approach is marginally used for : (a) determining the cost of the minimum per unit by the terms marginal cost equal to the average cost (MC = AC), (b) the level of profits maximum or losses minimum in terms of marginal revenue equal to marginal cost (MR = MC), and (c) the income maximum in terms of marginal revenue equal to zero (MR = 0).

In the history of the development of marginal theory, as in the book A History of Marginal Utility Theory (Emil Kauder, 2016), this theory has been used for various new theoretical findings, especially since the neoclassical period, such as in (a) the Austrian school with the main character Karl Menger who developed it. theory of utility marginal in his work Grusatze der Volks Wirtshaftslehre (1817), (b) schools of Cambridge which was pioneered by Alfred Marshal with works mainly among others the pure theory of foreign trade (1829), and (c) the school of Lausanne which was pioneered by Leon Walras, with his work elements of pure economics (1878), as in (Respati, 2000) and (Sugiyanto, 2014).

2.2. Mathematical approach

The optimal condition or maximum profit is reached at the balance of marginal revenue and marginal cost.

$$\text{SMg} = \frac{\text{MR}}{\text{MC}} = 1 \quad \text{atau} \quad \frac{\Delta\text{TR}/\Delta\text{Q}}{\Delta\text{TC}/\Delta\text{Q}} = 1$$

Where: SMg = marginal score , MR = marginal revenue , MC = marginal cost , ΔTR = change in total revenue, ΔTC = change in total cost, ΔQ = change in sales quantity .

2.3. Approach Graph

Analysis of the relationship curve TC, TR, MR, MC, AVC, and AC expressed in pictures 1 to the optimal quantity of sales as Q1 with prices P1 occurs at point A, while the quantity of sales Q1 with price P3 is on condition financial distress are serious, so it is better to stop operational companies that do not give rise to a great loss, because the price of P3 on the quantity of sales Q1 is not able to cover the cost of the variable on the curve AVC and costs overall in the curve AC.

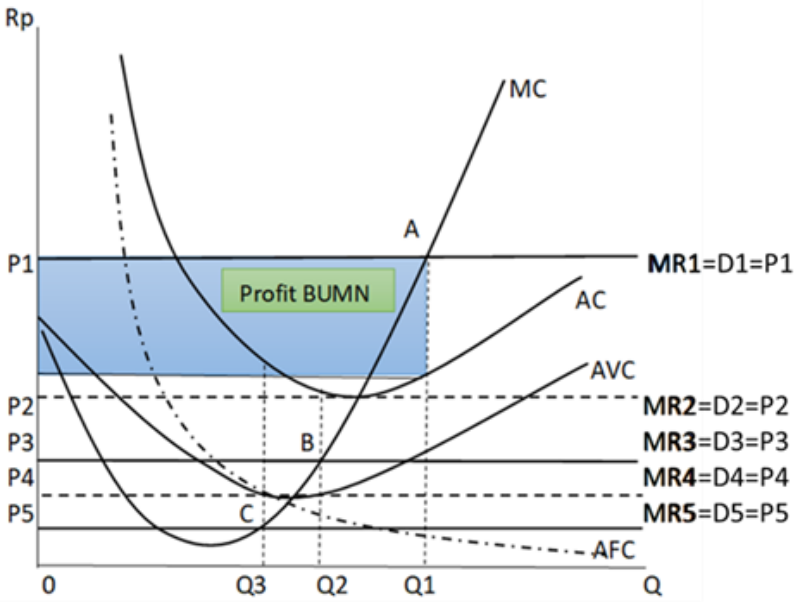

Figure 1 Marginal Revenue and Marginal Cost Balance (MR = MC)

Where: MR = marginal revenue , MC = marginal cost , AC = average cost , AFC = average fixed cost , P = price , Q = quantity of sales , D = demand.

2.4. Financial Distress

Previous research on financial distress was conducted by (Beaver (1966), then followed by (Altman, 1968) and others. Altman's models (1968), using the model of Multiple Discriminant Analysis, and variable financial distress was measured with category 1 and 2 for the company healthy and companies experiencing financial distress. While variable independent are used, namely: working capital / total assets; retained earnings / total assets; earnings before interest and taxes / total assets; market value equity/book value of total liabilities, and sales / total assets.

Then by Miller & Springate (1978), using the model of Multiple Discriminant Analysis, and variable financial distress was measured with categories 1 and 2 for the company healthy and companies experiencing financial distress. While variable independent are used, namely: Working Capital / Total Assets; Net Profit before Interest and Taxes / Total Assets; Net Profit before Taxes / Current Liabilities, and Sales / Total Assets.

Followed by Fulmer's Model (1984), using the model of Multiple Discriminant Analysis and variable financial distress was measured with category 1 and 2 for the company healthy and companies experiencing financial distress. While variable independent are used , namely : Retained Earnings / Total Assets; Sales / Total Assets; EBT / Equity; Cash Flow / Total Debt; Debt / Total Assets; Current Liabilities / Total Assets; Log Tangible Total Assets; Working Capital / Total Debt; and the EBIT / Interest Log.

3. HYPOTHESIS DEVELOPMENT

H1: The growth of investment or capital expenditure has a positive effect on financial distress or the marginal score of State-Owned Enterprises.

H2: The growth of working capital has a positive effect on financial distress or the marginal score of State-Owned Enterprises.

H3: The growth of retained earnings has a positive effect on financial distress or the marginal score of State-Owned Enterprises.

H 4: The increase in equity or own capital has a positive effect on financial distress or the marginal score of State-Owned Enterprises

H 5: Real activities earning management have a positive effect on financial distress or the marginal score of State-Owned Enterprises.

H 6: Growth of earnings before interest and tax has a positive effect on financial distress or the marginal score of State-Owned Enterprises.

4. RESEARCH METHODOLOGY

4.1. Population and Sample

Population research this is the 44 SOEs were experiencing difficulties finances, while the sample is determined by using the method solving as Loving & Kamermans (1991), with the formula: $n = N / (1 + (N \times e^2))$, where N = number of the population of 44 SOEs; e = margin of error of 10%, thus obtained the number of samples that will be observed as much as 31 state-owned companies. The number of samples or units of analysis for this study was 31 BUMN, about 70.4% of the total population of 44 BUMNs experiencing financial difficulties. Observations were made using panel data as a combination of cross-section data of 31 BUMN and time series data in the last few years so that the number of observations in this study was 72 company-years. In the processing of statistical data for each BUMN, several variables use data on changes between times, so that it is processed statistically as many as 48 observations.

4.2. Variable Measurement

4.2.1. Financial distress

Financial Distress, which is the dependent variable indicating the level of financial difficulties faced by state-owned enterprises or BUMNs ranging from small to medium difficulties to bankruptcy. Variable measurement financial distress SOE used approaches score is marginal, as described previously following this.

$$\text{YFINDIS} = \text{SMg} = \frac{\text{MR}}{\text{MC}} = \text{atau} \quad \frac{\Delta \text{TR}/\Delta \text{Q}}{\Delta \text{TC}/\Delta \text{Q}}$$

Where: SMg = marginal score , MR = marginal revenue , MC = marginal cost , ΔTR = change in total revenue, ΔTC = change in total cost, ΔQ = change in sales quantity.

Capital expenditure

$$\text{CAPEX}_t = \frac{\text{Fixed Assets(t)} - \text{Fixed Asset (t-1)}}{\text{Fixed Asset (t-1)}}$$

Working Capital

$$\text{WC}_t = \frac{\textit{Working Capital}\ (\text{t}) - \textit{Working Capital}\ (\text{t}-1)}{\textit{Working Capital}\ (\text{t}-1)}$$

Retained Earnings

$$\text{RE}_t = \frac{\textit{Retained Earning}(\text{t}) - \textit{Retained Earning}(\text{t}-1)}{\textit{Retained Earning}\ (\text{t}-1)}$$

Equity

$$\text{EQ} = \frac{\textit{Equity}(\text{t}) - \textit{Equity}\ (\text{t}-1)}{\textit{Equity}\ (\text{t}-1)}$$

Real activities earning management

Equation (1): Cash flow operasi (CFO),

$\text{CFOt/At-1} = \alpha 0 + \alpha 1\ (1/\text{At-1}) + \beta 1\ (\text{St/At-1}) + \beta 2\ (\Delta \text{St/At-1}) + \text{et}$

Equation (2): Cost of good sold (COGS),

$\text{COGSt/At-1} = \alpha 0 + \alpha 1\ (1/\text{At-1}) + \beta\ (\text{St/At-1}) + \text{et}$

Equation (3): Perubahan inventory (ΔINV),

$\Delta \text{INVt/At-1} = \alpha 0 + \alpha 1\ (1/\text{At-1}) + \beta 1\ (\Delta \text{St/At-1}) + \beta 2\ (\Delta \text{St-1/At-1}) + \text{et}$

Equation (4): Production (PROD),

$\text{PRODt/At-1} = \alpha 0 + \alpha 1\ (1/\text{At-1}) + \beta 1\ (\text{St/At-1}) + \beta 2\ (\Delta \text{St/At-1}) + \text{B3}\ (\Delta \text{St-1/At-1}) + \text{et}$

Equation (5): Discretionary expense (DISEXP),

$\text{DEXPt/At-1} = \alpha 0 + \alpha 1\ (1/\text{At-1}) + \beta\ (\text{St-1/At-1}) + \text{et}$

Procedures measurement variable is preceded by using equation (1) to the equation (5), then calculated the residual or abnormal from the five equations that (ACFO, ACOGS, AΔINV, APROD, and ADEXP) as well as on research Cohen et al. (2008) in Roychowdhury (2006) follows this.

$$\text{RAEM t} = \text{AREAL t} = \text{ACFO t} + \text{ACOGS t} + \text{A}\Delta\text{INV t} + \text{APROD t} + \text{ADEXP t}$$

Where: AREA or Raem t = abnormal or residuals from estate activities ; ACFO = abnormal or residual cash flow from operating ; ACOGS = abnormal or residual cost of goods sold ; AΔINV = abnormal or residual change in inventory value ; APROD = abnormal or residual production costs ; ADEXP = abnormal or residual discretionary expense ; At = total assets end of year t; St: sales period t.

Earning Before Intrest and Tax

$$\text{EBITt} = \frac{\text{EBIT (t)} - \text{EBIT (t-1)}}{\text{EBIT (t-1)}}$$

4.3. Analysis Model

Test the hypothesis of variables that affect financial distress, using the following equation model.

$$YFINDIS = \beta 0 + \beta 1\ CAPEX + \beta 2\ WC + \beta 3\ RE + \beta 4\ EQ + \beta 5\ RAEM + \beta 6\ EBIT + e$$

Where: YFINDIS t = financial distress based on marginal score (SMG) period t, CAPEX t = growth in capital expenditure in period t, WC t = growth of working capital in period t, RE t = growth retained earning in period t, EQ t = growth in equity in period t, RAEM t = real activities earning management in period t, EBIT t = growth in earnings before interest and tax in period t, β 0: constant, β 1 ... β 14: coefficient regression, e t = error period t.

5. RESULTS AND DISCUSSION

The independent variable used in this study is based on previous research. Meanwhile, the reasons and the process for selecting the independent variables are carried out through selection by considering the relevant aspects with real conditions that cause the company to experience financial distress. Based on the selection process, the key variables that affect financial distress are then determined, namely : (a) investment growth, (b) working capital growth, (c) retained earnings growth, (d) equity growth, (e) real activities earnings management, and (f) earning before interest.

Tabel 1. Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-0.243	0.037		-6.502	0.000
	X1 Δ CAPEX	0.721	0.211	0.420	3.409	0.001
	X2 Δ WC	-0.212	0.122	-0.209	-1.732	0.091
	X3 Δ RE	-0.971	0.246	-0.465	-3.953	0.000
	X4 Δ EQ	-0.594	0.225	-0.318	-2.636	0.012
	X5RAEM	0.00005	0.000	0.321	2.711	0.010
	X6 Δ EBIT	0.052	0.028	0.219	1.879	0.067
a. Dependent Variable: YFINDIS						

here: YFINDIS = *financial distress* base on *score marginal*; X_1ΔCAPEX = *capital expenditure*; X_2ΔWC = *working capital*; X_3 ΔRE = *retained earning*; X_4ΔEQ = *equity*; X_5RAEM = *real activities earning management*; X_4ΔEBIT = earning before interest and taxes

7. CONCLUSION

This research hypothesis test shows that independent investment growth, working capital growth, retained earnings growth, equity growth, real activities earning management, and independent earnings before interest variables have an effect on the financial distress of BUMN. The score of financial distress can be an indicator of performance management of SOEs and can be used to compare the achievement of results from year to year and to compare with SOE others.

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