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ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

Does earning management affect financial distress? Evidence from state-owned enterprises in Indonesia

Nur Sayidah^{1*}, Aminullah Assagaf¹ and Zulfikar Faiz¹

Abstract: Financial distress in state-owned enterprises (SOEs) becomes a problem needing attention. This study aims to analyze the effect of earnings management, marketing productivity, and government subsidies on financial distress of SOEs with firm size as a control variable. The sample consisted of 19 state-owned companies receiving government subsidies and state capital participation in 2015–2017. The data analysis method used was a quantitative approach. The results showed that marketing productivity affected financial distress in state-owned companies receiving government subsidies in 2015–2017. High marketing productivity showed that SOEs were achieving high sales to meet public demand. Furthermore, earning management and subsidy had no effect on financial distress in state-owned companies. SOEs management performed earnings management within a certain limit so that it did not affect financial distress.

Subjects: Corporate Finance; Business; Management and Accounting; Accounting

Keywords: Earning management; financial distress; marketing productivity subsidies



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PUBLIC INTEREST STATEMENT

In Indonesia, society has a strong interest in SOEs' financial condition because they manage natural resources, which are the basic needs of the community. The society, as consumers, will feel the impact of SOEs' performance. SOEs' financial distress causes the government to provide large amounts of funds to overcome it. It is interesting to study the influencing factors of financial distress in SOEs so that the government can detect it early and find solutions. The public needs to know the research findings showing that earning management does not affect financial distress. This result can increase society's confidence in the management quality of SOEs. They have presented financial reports according to the actual conditions in a transparent and accountable manner. The public must believe that when management restructures prices, the objective is to improve SOE's performance and reduce dependence on subsidies.

1. Introduction

Article 33, paragraph 2 of the 1945 Constitution states that the government shall control production branches which are essential to the state and affect the livelihoods of the public. One implementation of the law is the establishment of SOEs. So, SOEs occupy a strategic position because they manage natural resources controlling the lives of many people. SOEs have been actively involved in national priority projects and pioneering business activities to encourage equitable development in which the private sectors have not been able to carry out. SOEs also continue to carry out sustainable development in all remote regions of the country through the program named “SOEs Present for the Nation.” Currently, there are five priorities of the Ministry of State-Owned Enterprises of the Republic of Indonesia, namely (1) economic and social values for Indonesia, (2) business model innovation, (3) technology leadership, (4) increased investment, and (5) talent development (<https://bumn.go.id/>)

The government can achieve these priorities if SOEs are managed following the principles of good corporate governance. The Ministry of State-Owned Enterprises of the Republic of Indonesia stipulates regulation no PER—01/MBU/2011 concerning the Implementation of Good Corporate Governance (GCG) in SOEs based on the principles of transparency, accountability, responsibility, independence and the principles of GCG are transparency, accountability, responsibility, independence, fairness. Following these regulations, SOEs are required to apply GCG principles consistently and sustainably. The transparent and accountable management of various SOEs’ programs becomes the hope of Indonesian people because several sectors becoming the primary needs of the society are the core business of SOEs such as PT. PLN (State Electricity Company) manages the electricity sector, PT. Pertamina (State-Owned Oil and Gas Company) engages in the energy sectors, including oil, gas, and new and renewable energy and PT. Bulog (The Bureau of Logistics) manages food distribution and rice control. SOEs have become agents of national development to assist the government in realizing social welfare and become a growing entity.

Based on data presented in <https://bumn.go.id/>, until the end of 2018, the total assets of SOEs had exceeded 8.200 IDR trillion. It increased by 42% from 2015 amounted to 5.670 IDR trillion. In the same period, total profit reached 212 IDR trillion, rising from 160 IDR trillion. The SOEs’ contribution to the State Revenue and Expenditure Budget (APBN) also jumped 50% to 454 IDR trillion in 2018 from 303 IDR trillion in 2015. However, the increase of SOEs’ assets was accompanied by never-ending losses. At the end of 2017, there were 12 SOEs recording losses of 5.2 IDR trillion. The value of the loss decreased when compared to the end of 2016, where the loss reached 6.7 IDR trillion (<https://neraca.co.id/article/108831/tahun-prihatin-bumn>). This financial condition of state-owned enterprises (SOEs) is an exciting topic to study.

The purpose of establishing SOEs, according to Law no. 19 of 2003 concerning SOEs stated in article 12 paragraph (b), is to seek profit to increase the value of the company (limited liability company). Meanwhile, the objective of SOEs in the form of Public Company, following article 36 paragraph 1, is to carry out business for the public benefit based on the principles of good corporate governance. However, in reality, many SOEs are still experiencing losses or having poor financial health. The results of the study on prediction of SOEs bankruptcy based on the Altman and Springate model show that the SOEs bankruptcy rates were 60% and 76%, respectively. This gap indicates a practical gap so that financial distress in SOEs is interesting to study.

Financial difficulty or financial distress faced by SOEs in meeting their operational needs to be resolved. The government must fix this problem so that SOEs can meet their operational requirements. Several SOEs are still receiving government subsidies. In Indonesia, subsidies are given to SOEs so that they can provide good services to the public. Law No. 19 of 2003 concerning State-Owned Enterprises (SOEs) mandates BUMN to carry out public service obligations or Public Service Obligation (PSO). The government can assign a particular assignment to SOEs to carry out public benefit functions while still paying attention to the aims and objectives of SOEs’ activities. If the

project, according to the study, is not financially feasible, the government must provide compensation for all costs incurred, including the expected margin.

On the other hand, SOEs as business entities are also required to compete with other (private) business actors as the driving force of the economy to generate profits. The problem that arises is that several SOEs carrying PSOs suffer losses and experience financial distress. When a company is in financial distress, management must identify the source of the crisis and find ways to fix it (Platt, Platt, & Chen, 1995).

This study identifies several factors that influence financial distress: earning management, marketing productivity, subsidies, and firm size. The research findings give a contribution to increasing empirical evidence regarding financial distress SOEs in Indonesia. These results provide information about the financial condition of SOEs so that management makes financial planning. Financial performance can be improved by increasing sales or reducing costs of sales. For the government, these findings can provide insight and additional information about the level of financial distress among SOEs so that necessary steps can be taken to make them healthy. The government can use it as a consideration in making decisions about subsidies and developing SOE's business scale. The subsidies can be increased or decreased based on the level of financial distress of each SOE.

2. Background

Several studies on financial distress in Indonesian SOEs had been conducted by several researchers (Assagaf, 2017; Assagaf et al., 2017; Gunawan et al., 2019; Sayidah, Assagaf et al., 2019). Sayidah & Assagaf, (2019) showed that subsidies significantly reduce the level of SOE's' financial health. The higher the subsidy was, the lower the level of financial health, or the higher the level of financial distress. The factors affecting financial distress include working capital and leverage (Gunawan et al., 2019). Another study examined the effect of financial distress and earnings management in the context of family-owned enterprises. The results showed that there was a relationship between earnings management and financial distress. Companies experiencing financial distress tended to carry out earnings management (Bisogno & Luca, 2015). The motivation of managers to do earnings management was to encourage lenders to agree to debt rescheduling (Saleh & Ahmed, 2005). In public companies listed on the Indonesia Stock Exchange, financial distress had a positive and significant effect on earnings management. Companies that experience a decline in financial conditions will tend to carry out earning management (Paramita et al., 2017)

Assagaf et al. (2017) studied the effect of subsidies and profitability strategies (earning management) on the financial strength of SOEs having the capital structure as a moderating variable. The results showed that government subsidies had a significant negative impact on financial strength, meaning that owned-companies found it difficult to manage the company independently if the government continued to provide subsidies or capital grant. Profitability strategy had a significant positive impact on financial strength, meaning that there was an opportunity for management to practice earnings management as a strategy to increase the level of corporate financial strength or reduce financial distress. Another research examining earnings management and its effect on financial distress was conducted by Paramita et al. (2017).

Different from the previous studies, this present study uses the productivity variable as one of the independent variables in addition to earnings management and subsidies. Productivity is a measure of efficiency, and in a simple concept, it is a comparison between the amount of output obtained and the input used (Brynjolfsson & Hit, 1998; Syverson, 2010). Marketing activities produce output in the form of sales, which is the sum of the volume and the selling price. The inputs required include advertising costs, facilities, and infrastructure as well as marketing resources. If the output produced is greater, productivity will increase. A high productivity level indicates that the company is operating efficiently (Syverson, 2010). High efficiency describes the results of acceptable management practices. Best practice from management correlates to the level of company survival (Bloom & Reenen, 2007). The higher the survival level is, the lower the

financial distress level will be. Management succeeding in carrying out efficiency will achieve high productivity and reduce the level of financial distress.

An interesting consideration to include marketing productivity as an independent variable is that the marketing department is an important part of the company, but the results of its performance or productivity do not get enough attention in research on financial performance and financial distress. There is only a few number of researches has linked marketing performance to financial performance. The results of O'Sullivan and Abela (2007) showed that marketing performance had a significant effect on company performance, profitability, and stock returns. Furthermore, research linking marketing performance to financial distress has not been widely found in Indonesia. Research on the effect of marketing performance proxied by sales growth and financial distress was conducted with the result that there was a positive influence between sales growth and financial distress (Putri & Sopian, 2017). Different results had been found that sales growth did not affect financial distress (Lisiantara & Febrina, 2018). Those two studies found different results so that another research on marketing performance and financial distress is still opened to be conducted. We use marketing productivity which is the ratio of total sales to cost of sales as independent variable.

3. Theoretical literature review

3.1. The signaling theory

The concept of signaling theory was firstly studied by Akerlof and Arrow (Ross et al., 1977). Furthermore, Spence uses the concept of signaling in the context of the job market (Spence, 1973). Spence's writing has influenced many studies of signaling theory in various fields, namely psychology, anthropology and management (Karasek & Bryant, 2012). (Ross et al., 1977) use an incentive-signaling approach to determine financial structures. If the manager has inside information, the determination of the managerial incentive schedule and financial structure is a signal sent to the market. Financial structures with greater leverage provide signals that can increase corporate value. (Bhattacharya (1979) shows that cash dividend provides a signal regarding expected cash flow to outside investors assuming imperfect information about profitability. For companies experiencing a decline in value, the board of directors can provide financial information signals to potential investors to improve their perceptions of market performance (Certo, 2003). Poor company performance can cause financial distress. Financial distress provides a signal about financial condition to the company's main stakeholders such as management, shareholders, and creditors. Company management needs to take corrective steps to improve financial condition. The higher level of financial distress indicates that the government must immediately step in to identify the problems occurring in SOEs and immediately take certain policies to solve them.

Different from bankruptcy, financial distress happens as a result of management choosing bad financing policies and failing to carry out the company's operational planning (Platt & Platt, 2006). Meanwhile, bankruptcy is a condition in which a company cannot pay or reach an agreement with its creditors out of court (Warner, 1977). Companies can solve financial distress problems using efficient mechanisms (Hotchkiss et al., 2008). These alternative mechanisms or methods are debt restructuring, workouts, and informal reorganizations in the capital and real asset markets (Senbet & Seward, 1995). In addition, the implementation of good corporate governance structures can reduce the level of financial distress (Luqman et al., 2018).

In choosing these various methods, companies need to consider the factors affecting financial distress. One of the factors needing attention is management behavior. Asymmetric information between management and shareholders allows the occurrence of earnings management behavior with specific objectives. Managers having the opportunity and ability can do earnings management (Ibrani et al., 2019). Earnings management behavior causes less reliable announced financial report (Alhebri & Al-duais, 2020). In this research, we examine the effect of earnings management on financial distress and add other factors, namely marketing productivity, subsidies and company size.

4. Empirical literature review and hypotheses development

4.1. Financial distress and earning management

Financial distress is a condition of financial difficulty influenced by several factors. One of the influencing factors is earning management. Research examining earnings management and its effect on financial distress was conducted by (Paramita et al., 2017) who examined the effect of financial distress, litigation risk and disclosure of corporate social responsibility on earnings management. The results showed that there was a significant positive effect of financial distress on earnings management. Companies experiencing financial distress were more likely to perform earnings management. The same result was found by (Bisogno & Luca, 2015). Other findings showed that companies experiencing financial distress do more earnings management than financially healthy companies (Jacoby et al., 2019). There were more managers in companies experiencing financial distress carried out earnings management by reducing income compared to managers of companies whose financial condition was healthy (Habib et al., 2012). Management tended to do earnings management to avoid reporting losses or decrease in reported earnings (Ghazali et al., 2015). Based on this description, the hypothesis is:

H1: There is an effect of earnings management on financial distress.

4.2. Financial distress and marketing productivity

Marketing productivity is a measure to assess the results of marketing department performance. Research on the effect of marketing productivity on financial distress in particular has never been studied. Previous research using variables almost similar to marketing productivity was conducted by Putri and Sopian (2017) using sales growth variable. The results showed that sales growth partially had a significant positive effect on financial distress. Investors can use these results as consideration in assessing the company's financial condition (Putri & Sopian, 2017). Another study was conducted by Lisiantara and Febrina (2018) whose findings showed that sales had no effect on financial distress (Lisiantara & Febrina, 2018). O'Sullivan and Abela (2007) found that marketing performance positively affected the company's financial performance. This meant that the better the marketing performance is, the healthier the company financial performance will be or it does not experience financial distress. Based on the description above, the hypothesis is:

H2: There is an effect of marketing productivity on financial distress.

4.3. Financial distress and government subsidies

Subsidies are financial assistance provided by the government to enterprises, especially state-owned enterprises, to cover operational costs because the selling price is determined by the government. Subsidies, on one hand, have a positive impact, namely helping the community to obtain facilities and services from the government. On the other hand, there are negative impacts of subsidies. Research on addition of state capital participation conducted by Mandana and Artini (2011) reported that the asset structure, sales growth rate, profitability, and company growth had a significant effect on capital structure. This occurred because of the addition of capacity, which was reflected in the value of assets, required additional investment costs financed from addition of state capital and/or a portion of debt. Subsidies significantly reduced the level of SOEs' financial health. Research on subsidies and financial distress was conducted by Sayidah et al. (2019). The results showed that subsidies had a positive and significant effect on financial distress. The higher level of subsidy indicated the lower level of financial health or higher level of financial distress. Based on this description, the hypothesis is:

H3: there is an effect of subsidies on financial distress.

5. Research design

5.1. Population and sample

The population in this study was state-owned enterprises (SOEs) in Indonesia. We selected the research sample using a purposive method. According to Etikan (2017), researchers can use purposive sampling to obtain samples that are in accordance with the purpose of the selection. Several researchers had also used purposive sampling method to select their samples (Sayidah et al., 2019; Sayidah & Assagaf, 2019; Sayidah et al., 2019; Sayidah et al., 2020; Assagaf et al., 2017; Assagaf & Yunus, 2016; Assagaf, 2017b). The criteria of samples were (1) SOEs that received government subsidies during 2015–2017 (2) SOEs which published online annual reports on the company website during 2015–2017 (3) SOEs did not experience transactions of mergers, acquisitions, restructuring, and changes in business groups during 2015–2017. Based on those criteria, we collected 19 firms.

5.2. Variable identification and measurement

5.2.1. Financial distress

Financial Distress is a dependent variable. The measurement of financial distress in this study was adopted from Altman (1983). This Z score included five ratios according to the characteristics of the manufacturing companies of our samples. According to Altman (2018), the original Z-score model was only used correctly for manufacturing companies. Several researchers had used this Z-score of Altman with five ratios (Chairunesia et al., 2018; Choy et al., 2011; Lemonakis et al., 2017; Panigrahi, 2019; Udin et al., 2017).

The formula of Altman score is:

$$Z_i = 1.2 X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 1.0X_5$$

Z_i = Altman score

X_1 = (Current assets—current debt)/Total Assets

X_2 = Retained earnings/Total Assets

X_3 = Earning before interest and tax/Total Assets

X_4 = Market value of ordinary and preferred shares/Total book value of debt,

X_5 = Sales/Total Assets.

5.2.2. Earnings management

The researchers used Healy measurement model of earnings management. Based on Healy (1985), there are two proxies to measure discretionary accruals and accounting procedures, namely total accruals and the effect of voluntary changes in accounting procedures on earnings. Total accruals include both discretionary and non-discretionary. Total accrual is the difference between net income and = cash flow from operating activities. The earnings management formula is as follows:

$$ACCR = NI - CFO$$

ACCR = total accruals; NI = net income before extra ordinary items; CFO = cash flow from operating activities.

5.2.3. Marketing productivity

Marketing productivity, according to Hawkins, Best & Lillis (1987) in Sheth and Sisodia (2002), is relative market share times comparable price divided by marketing expenditure. For this reason, we define marketing productivity as added value that can be measured by the marketing function, relative to its costs. One measurement of marketing productivity is to use financial impact covering

profit, cash flow, or other financial measurements (Rust et al., 2004). This research measured marketing productivity by using the formula:

Marketing Productivity = Sales (Without Subsidy)

Cost of Sales

Sales without subsidy = total operating income without including subsidies.

Cost of sales = marketing cost

5.2.4. Government subsidies

The variables for government subsidies were dummy variables. Researchers marked notation 2 for companies receiving government subsidies and addition of state capital participation and the companies' data were available. Notation 1 was given for companies receiving government subsidies the the companies' data data were not available.

5.2.5. Firm size

Company size is calculated based on measurement using total assets. The formula of firm size is:

$Size_{(t)} = \text{Log} (\text{Total Aset}_{(t)})$

5.2.6. Technique of analysis

We used regression analysis technique with the following formula:

$FD = \alpha + \beta_1 \text{Prod} + \beta_2 \text{EM} + \beta_3 \text{SUB} + \beta_4 \text{Size} + \epsilon$

FD = Financial Distress + Z_i , Prod = Marketing Productivity, EM = Earning Management, SUB = Government subsidies, Equity Participation, Size = Firm Size, α = Constant,

$\beta_1, \beta_2, \beta_3, \beta_4$, = Regression Coefficient, ϵ = error estimate.

6. Empirical results and discussion

6.1. Descriptive statistics

Statistical description of the data used in this study are as follows (Table 1):

Based on the above data, it is seen that the average financial distress is at a score of 0.43 with a minimum value of -0.83 and a maximum value of 1.29. The average amount of marketing productivity, earning management, and subsidy are 0.038, 12.09, and 0.288. The minimum scores of those variables are -12.82, 5, and 0.00. The maximum scores are 1.33, 18, and 0.69.

6.2. Classic assumption testing

6.2.1. Data normality test

The researchers conducted a data normality test using the Kolmogorov-Smirnov Test. The results of the test are as follows:

Based on Table 2 above, it is seen that the results of the significance is 200%. It means that the distribution of data is normal. According to Ghozali (2011) if $Asymp. Sig > 0.05$, then the research data is normal.

6.2.2. Multicollinearity test

Multicollinearity test was conducted by looking at the value of tolerance and variance inflation factor (VIF). The test results are stated below:

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FD	50	-.83	1.29	.413	.437
Prod	50	-12.82	1.33	-4.04	2.995
EM	50	5	18	12.09	3.660
SUB	50	.00	.69	.388	.348
Size	50	1.25	2.21	1.711	.312
Valid N (listwise)	50				

Table 2. One-Sample Kolmogorov-Smirnov Test

N		Unstandardized Residual
50		50
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.53111874
Most Extreme Differences	Absolute	.075
	Positive	.075
	Negative	-.062
Test Statistic		.075
Asymp. Sig. (2-tailed)		.200 ^{c,d}

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.
- d. This is a lower bound of the true significance.

The criterion that in the regression equation there is no multicollinearity is the value of Tolerance > 0.10 or VIF < 10 (Ghozali, 2011). Table 3 show that the tolerance value of the multicollinearity test is > 0.10 and a Variance Inflation Factor (VIF) value <10 for all independent variables. The numbers indicate there is no multicollinearity.

6.2.3. The test of heteroscedasticity

The heteroscedasticity test was done by the Glejser Test, which regresses between the independent variables and the absolute value of the residuals. If the significance value between the independent variables with residuals is more than 0.05, then there is no heteroscedasticity problem. Heteroskedasticity test results are (Table 4):

If each independent variable has a significance value of each variable (Sig.) > 0.05, there is no symptom of heteroscedasticity (Ghozali, 2011). Based on the table above, the significance value between the independent variables and absolute residuals is more than 0.05. Therefore, there is no heteroscedasticity problem.

Table 3. Multicollinearity Test Results

Model		Correlations			Collinearity Statistics	
		Zero-order	Partial	Part	Tolerance	VIF
1	Prod	.441	.492	.477	.695	1.438
	EM	.213	.171	.146	.912	1.097
	SUB	.151	.095	.080	.799	1.252
	Size	-.040	.216	.187	.619	1.616

a. Dependent Variable: FD

Table 4. Heteroskedasticity Test Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.229	.233		5.268	.000
	Prod	.018	.016	.170	1.154	.255
	EM	-1.987E-8	.000	-.184	-1.424	.161
	SUB	-.131	.087	-.208	-1.511	.138
	Size	-.300	.158	-.296	-1.896	.064

a. Dependent Variable: ABS_RES1

6.3. Results

The results of the regression model testing and hypothesis testing are as follows:

F test results show (Table 5 & 6) that all variables, namely marketing productivity, profit management, subsidies, and company size as control variables, together affect financial distress. The researchers indicate that the adjusted R2 value is 23.8%, which means financial distress variability can be explained by the four variables is 23.8%. 77,2% is explained by other variables not included in the model.

Table 5. Test Results F

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.803	4	.701	4.818	.003 ^b
	Residual	6.544	45	.145		
	Total	9.347	49			

a. Dependent Variable: FD

b. Predictors: (Constant), Size, SUB, EM, Prod

Table 6. Test Results t

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.070	.347		-.203	.840
	Prod	.080	.023	.550	3.438	.001
	EM	-.007	.018	-.061	-.415	.680
	SUB	.280	.170	.223	1.646	.107
	Size	.460	.223	.329	2.058	.045

a. Dependent Variable: FD

7. Discussion

7.1. Effect of earning management on financial distress

The first hypothesis states that earnings management has an effect on financial distress. Based on the results of the study, it is seen that the coefficient of Earnings Management influence on

financial distress is 0.28 and the significance level is 0.68 or 68%. It means that earnings management has no effect on financial distress. Therefore, the first hypothesis is rejected.

This result contradicts to research conducted by Ghazali et al. (2015), Kurniawan (2017), and Ghazali et al. (2015) found that company managers are increasingly involved in earnings management when the company is financially healthy and when the profits are high. Kurniawan (2017) showed that earnings management increases the possibility of companies to commit fraud.

These findings provide information to the public that they must believe in the management quality of SOEs and the effectiveness of monitoring process carried out on SOEs' management. Internal control has been running well and external auditors have reviewed the financial statements according to existing standards so that there is no more room for earnings management. Public suspicion about poor management of SOEs causing financial difficulties is not empirically proven. Therefore, the public should be able to accept the government's decision to restructure prices in order to improve the performance of SOEs. Based on the research findings, an increase in prices is needed to improve company performance.

7.2. Effect of marketing productivity on financial distress

The second hypothesis states that marketing productivity influences financial distress. The results of the analysis show that the coefficient of the impact of marketing productivity on financial distress is 0.023, and the level of significance is 0.01 or 1%. Therefore, marketing productivity has an effect on financial distress, then the second hypothesis is accepted. Marketing productivity is the ratio of total sales to sales costs. From this ratio, the researchers can show that the higher the total sales obtained by an entity and the higher the efficiency of the cost of sales are, the company will achieve positive marketing productivity. The higher the marketing productivity, the higher the score and this indicates a decreasing level of financial distress. These findings indicate that higher marketing productivity will improve the financial health condition of SOEs. Management can improve marketing productivity by increasing sales or reducing sales costs through production efficiency. Sales can be increased by the upswing in sales volume or rates. The sales volume of SOEs is limited by production capacity. So the main key to reduce financial distress is that the public must be willing to accept the government's decision to restructure tariffs or prices for products or services managed by SOEs periodically so that the financial condition of SOEs is getting healthier. Financial health will affect the performance. Companies can use e-marketing to improve sustainable performance (Sheikh et al., 2018).

The results of this study are also consistent with (Widhiari & Merkusiwati, 2015) who stated that Sales Growth affects financial distress. But this result is different from the findings which stated that sales growth had no effect on financial distress (Lisiantara & Febrina, 2018).

7.3. Effect of government subsidies on financial distress

The third hypothesis states that government subsidies influence financial distress. Based on the results, it is shown that the coefficient of earnings management influence on financial distress is -0.047 and a significance level is 0.223 or 22.3%. The significance level of 22.3% shows that the effect of government subsidies is not significant in influencing financial distress. This findings show that high subsidies do not cause an decrease in financial distress.

Subsidy only helps the deficit of operating expenses over operating income. Subsidy is not granted to help SOEs to pay debts and finance investments. The government provides subsidies as a social policy tool, for example, protecting the poor, improving income distribution, and increasing or maintaining employments (Schwartz & Clements, 1999). SOEs make investments to expand their operations as an implementation of government assignments. SOEs are responsible for financing the investment without any assistance from the government. Subsidy does not affect financial distress because the difficulties of SOEs in meeting debt payments for investment financing are not covered by subsidy. The purpose of subsidy is equitable distribution so that people in low economic strata can enjoy the services and products of SOEs according to their capability.

Subsidies are made because the selling price of SOEs services and products without subsidies, which is calculated using a reasonable cost-plus margin, is high. The selling price is lowered and the difference is paid by the government in the form of a subsidy. The government should subsidize the right people by registering and separating between those members of society needing and the ones that do not need subsidy. The selling price is determined based on a single tariff and subsidy is provided directly to people needing subsidy.

7.4. Effect size on financial distress

The test results show that firm size has an effect on financial distress. Fast-growing companies will operate efficiently because they can control raw materials from upstream to downstream portions of supply chain. Production costs will be smaller if the company operates on a large scale. It needs to develop SOEs in Indonesia so that they can become large companies and operate efficiently. Expansion funds can be drawn from internal financing through generated profits. This result is consistent with Nurhayati's research which shows that company size has a positive influence on profitability (Nurhayati, 2013).

8. Summary and conclusion

In this research, the researchers analyzed the effect of earning management, marketing productivity, and subsidies on financial distress in state-owned companies. The analysis showed that marketing productivity had an impact on Financial Distress in SOEs. High or low level of marketing productivity affects the high and low level of companies' possibility of experiencing financial distress. The positive influence of this study shows that the high productivity of SOEs marketing can cause financial distress. This condition is due to SOEs receiving assignments from the government to meet the needs of the community without regard to the level of profitability and financial capability. High marketing productivity shows that SOEs are achieving high sales to meet public demand. Furthermore, earnings management had no effect on financial distress in state-owned companies. SOEs management makes earnings management within certain limit so that it does not affect financial distress.

Other findings indicate that government subsidies do not affect financial distress. This finding shows that the goal of subsidies is not to resolve financial difficulties, but to cover operational costs due to the selling price set by the government is below the selling price in the market. Therefore the size of the subsidies does not affect financial distress. And then, firm size variable had a significant positive effect on financial distress. The bigger the company is, the more likely it is to experience financial distress.

This research has limitations that future researchers can make it better. The current research is only limited to sample of SOEs. Future researches are expected to expand the sample and add more other industrial sectors in order to find out the influence of marketing productivity, earnings management on financial distress. This research only used marketing productivity, earnings management and subsidies as well as company size as control variables. Further research needs to examine other variables outside the independent variables used in this study that affect financial distress.

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