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ESTIMATES MODEL OF FACTORS AFFECTING FINANCIAL DISTRESS: EVIDENCE FROM INDONESIAN STATE-OWNED ENTERPRISES

Abstract

This study as a model estimation of factors that influence the financial distress of State-Owned Enterprises. This study contributes to the gap in an earlier study using a logistic model which classifies companies with indicators one for companies experiencing financial distress and a zero for the company is not experiencing financial distress, so it is not possible to do research specifically on one group of firms for example, companies that experience financial distress. This study uses a marginal approach in measuring financial distress that is proxy with marginal score with a more realistic and proven mathematis and accounting calculations. For the company's management with state companies can use these results as a reference in evaluating the achievements of past operating performance, or to formulate strategies and policies in the future of corporate planning in order to achieve the level of marginally better scores or financial distress. This study needs to be continued by using secondary data corresponding realization of audited financial statements, so the result is more realistic and relevant because it uses the data of financial statements that meet the accounting standards.

Keywords: *Government Subsidy, Cash Flow, and Financial Distress*

INTRODUCTION

This research was motivated by the phenomenon of a number of State-Owned Enterprises (SOEs), which is still ongoing financial burden on the state and have not been able to conduct business independently in meeting funding requirements.

The phenomenon of financial difficulties that threaten the company's operations if it does not obtain government funding, seingga becomes very important to investigate, especially because it absorbs budget funding in relatively large amounts and cause the government's development programs in other sectors which required people to be hampered because of the funding allocated to the funding of SOEs.

In connection with this phenomenon, it should be pointed out that in the timeframe since 2004, the number of SOEs to change from time to time. In the last period in 2017 recorded the number of SOEs as much as 115 consists of: 14 Perum (public company), 84 and 17 Persero Persero Tbk. Perum and Persero business

40 orientation is closely related to financial phenomena encountered SOEs. This is
41 reflected in the establishment of state-owned enterprises intents and purposes set
42 forth the laws number 19 of 2003 namely namely PERSERO and PERUM.
43 PERSERO, was established to provide goods or services of high quality and strong
44 competitiveness; and the pursuit of profit in order to enhance shareholder value.
45 while PERUM established to organize efforts for public benefit in the form of
46 provision of goods or services of high quality at an affordable price by the public
47 based on sound principles of corporate management.

48 The phenomenon is characterized by the financial difficulties SOE three
49 conditions, namely: (a) state-owned companies receive government subsidies, (b)
50 state-owned companies receive additional state capital participation (PMN), and (c)
51 state-owned companies suffered losses.

52 Subsidy provided by the government through the state, is to help overcome
53 the financial difficulties faced by SOEs as happened in 2017 amounted to Rp 205
54 trillion higher than in 2016 amounting to Rp 201.3 trillion.

55 Additional capital is mainly given to SOEs country that has a special
56 assignment from the government on the basis that the state-owned enterprises have a
57 program that a lot of influence on the society. Additional capital in SOEs countries in
58 2016 decreased to Rp 39.4 trillion in 2017 of Rp 6.4 trillion in 2018 to Rp 3.6
59 trillion.

60 SOE Ministry informs that until the first half of 2017, the number of recorded
61 assets of approximately USD 6.560 trillion spread over 118 SOEs. The amount is
62 increased by around Rp 235 trillion in 2016 to Rp 6325 trillion. Companies that have
63 extensive business scale and large enough assets tend to have an opportunity to
64 increase efficiency and better able to manage their finances independently with a
65 better level of profitability than companies with the scale that is relatively smaller.
66 But the gap phenomenon shows that the number of SOEs should be beneficial, but it
67 still suffered losses as reported by the ministry of state enterprises which in 2016
68 recorded 26 state-owned companies suffered losses of Rp 6.700 billion,

69 In line with the phenomenon of SOE financial difficulties mentioned above,
70 Ferdinand (2014) suggests that the phenomenon of gaps that depart from business
71 phenomenon that is led to problems in the form of deviation between the plan was
72 supposed to happen (*das sollen*)with fact or reality achieved (*das sein*), The
73 phenomenon of financial distress experienced by SOE as main problems the research
74 gaps that need to be answered in this study.

75 This research is motivated to be to analyze these problems, reviewing the
76 literature and the results of previous research, identify related variables, propose
77 hypotheses, and analyze the role of each variable, testing hypotheses, formulate
78 measurements score financial distress that proxy with a score of marginal, mapping
79 about performance score financial distress each state enterprises, and recommend

80 alternative financial distress score improvement through a comprehensive corporate
81 planning to variable significant influence on financial distress.

82 Previous research related to the financial distress of SOEs by Institutions
83 Management Faculty of Economics and Business, University of Indonesia (2015)
84 argued that the ability of state-owned companies in asset management (productivity)
85 and make a profit is still low. Further stated that the problems that hinder the
86 performance of SOEs is government intervention against the company's management
87 policy, thus affecting operational performance of SOEs. In contrast to the practice of
88 SOEs in other countries such as Singapore Airlines does not require the approval of
89 Temasek Holdings and the government and parliament, so it does not affect the
90 company's operations. Government control is only carried out during the selection
91 and placement of the leadership positions (CEO) at Temasek Group.

92 Research SOE specific sectors of electricity by Assagaf (2015), suggests that
93 in order to optimize the management of PLN and overcome the financial difficulties
94 of the present and the future, there should be a series of policies supported by the
95 government through an integrated policy on four main pillars, namely: (a) fuel
96 management from upstream to downstream independently with economies of scale
97 thoroughly in a gradual process, (b) restructuring of a contract to purchase electricity
98 from private power companies, especially in rescuing opportunity income or cost
99 savings for PLN, (c) restructuring of tariffs on the economic level through tariff-
100 based mechanisms marginal cost pricing, and (d) optimizing the management of
101 subsidiary companies through the restructuring of the authority for the management
102 of the company independently.

103 Based on the experience of empirical SOE during and pay attention to related
104 research or literature concerned, this study used a group of variables relevant to
105 financial distress and theories that form the basis of this study such as (a) the agency
106 theory, (b) signaling theory, and (c) financial distress.

107 The research objective of financial distress can not be separated from the
108 interests of management and shareholders, who are the main stakeholders of SOEs,
109 so that the variables used in this study are relevant to the Agency Theory. In theory
110 emphasizes that the principal or the agent expects that the owner or manager of its
111 duty to support the interests of shareholders (Jensen and Meckling, 1976). For the
112 principal delegate certain authority to the agent. In order for the task accomplished as
113 expected principal agent, it must be compensated accompanied by supervision
114 through various means such as financial audit, restrictions on the decisions taken by
115 the agent, and an agreement or binding.

116 Cue or signal according to Brigham and Daves (2007) is an action taken by
117 the management companies that provide guidance to investors about how
118 management consider the company's prospects. Signals from company management
119 actions have a very important influence on the variables that affect the financial
120 distress of SOEs. Therefore, the research of financial distress of state-owned

121 enterprises that reveal the conditions of financial difficulties and the variables that
122 influence them, is an integral part of the signaling theory.

123 Copeland and Weston (1997), argued that financial distress, is as a failure
124 that occurs in the company can be distinguished as follows: (1) failure of the
125 economy (economic distressed) means that the income of the company no longer
126 able to cover its costs, which means that the rate of profit is smaller than the cost of
127 capital. Definitions related is that the present value of the company's cash flow is less
128 than its liabilities. (2) The financial failure (financially distressed) or insolvency has
129 two forms namely technical default occurs when a company fails to meet one or
130 more conditions within the provisions of its debt, as the ratio of current assets to
131 current liabilities defined,

132 Novelty of this study, which enhance the study of financial distress before
133 that had a weakness: (a) a previous study using the model of logistic regression
134 analysis and dummy variable 1 for companies experiencing financial distress and 0
135 for a healthy company, so it is not possible to do an analysis of a healthy company
136 only, or that A financial distress. (B) the definition of companies experiencing
137 financial distress is not uniform among researchers, making it difficult to determine
138 the category of financial distress (1) or healthy (0). (C) the data used did not
139 correspond to current developments, while the score of financial distress from the
140 study was widely used in subsequent studies.

141 Based on measurements of the weakness of the financial distress, this
142 research propose a new measurements that are more realistic to overcome the
143 weaknesses of previous research. Measurement of financial distress that used this
144 research is marginal score (SMG) with less measurement as set forth in the following
145 discussion.

146 This research is important to contribute to the decision of the management of
147 SOEs, thus becoming kahlilpenelitian this as a reference in terms of: (a) evaluate the
148 achievement of the financial performance of each SOE. (B) a reference in
149 formulating corporate peencanaan marginan to achieve a certain score, then the
150 medium or long-term targets are getting better penjang the future. (C) take pernan
151 each of the variables that affect the financial distress of SOEs, with priorities based
152 on the significance and magnitude of the effect of each of these variables on the
153 financial distress of SOEs. (D) as an evaluation of shareholders for marginal
154 performance evaluation scores between the SOEs, as well as prepare the mapping
155 and strategic measures to improve the financial performance of SOEs in the future.

156 Under the conditions of SOE empiris financial difficulties, the principal
157 issue in this study are:

- 158 a. How does the growth of investment or capital expenditure ($X3\Delta CAPEX$) direct
159 and indirect impact of the financial distress ($YFINDIS$) state that receives budget
160 funding or financial difficulty?

- 161 b. How working capital (X4WC) direct and indirect impact of the financial distress
162 (YFINDIS) state that receives budget funding or financial difficulty?
- 163 c. How to retained earnings (X5RE) direct and indirect impact of the financial
164 distress (YFINDIS) state that receives budget funding or financial difficulty?
- 165 d. How earnings before interest and tax (X6EBIT) direct and indirect impact of the
166 financial distress (YFINDIS) state that receives budget funding or financial
167 difficulty?
- 168 e. How does the growth of the contribution margin (X7 Δ CM) direct and indirect
169 impact of the financial distress (YFINDIS) state that receives budget funding or
170 financial difficulty?
- 171 f. How does the growth of equity or equity (X8 Δ EQ) direct and indirect impact of
172 the financial distress (YFINDIS) state that receives budget funding or financial
173 difficulty?
- 174 g. What is the level of efficiency or productivity of the operation (X9EFSO) direct
175 and indirect impact of the financial distress (YFINDIS) state that receives budget
176 funding or financial difficulty?
- 177 h. How real growth of earnings management activities (X10RAEM) direct and
178 indirect impact of the financial distress (YFINDIS) state that receives budget
179 funding or financial difficulty?
- 180 i. How accruals growth in earnings management (X101ACEM) direct and indirect
181 impact of the financial distress (YFINDIS) state that receives budget funding or
182 financial difficulty?
- 183 j. Has the growth of cash flow from operating (X2 Δ CFO) significantly affects the
184 financial distress (YFINDIS)) state that receives budget funding or financial
185 difficulty?
- 186 k. Is the government subsidy and equity (X1GSAE) significantly affects the
187 financial distress (YFINDIS)) state that receives budget funding or financial
188 difficulty?

189 **1.** Does the interaction between the variables moderating government subsidy and
190 equity with intervening variables from the operating cash flow growth ($X1GSAE$
191 $\times X2\Delta CFO$) strengthening the relationship between growth in cash flow from
192 operating ($X2\Delta CFO$) with financial distress of SOEs (YFINDIS) which receive
193 budget funding or financial difficulties.

194 **LITERATURE AND DEVELOPMENT HYPOTHESIS**

195 **1. Agency Theory**

196 The theoretical foundation used in this study is the agency theory developed
197 by Jensen and Meckling (1976), arguing that this theory explains the two parties
198 have different interests, namely the shareholders or principals who want to maximize
199 the receipt of dividends per share or earnings per share, while managers companies
200 that want to maximize the receipt of compensation. Managers can manage the
201 company to achieve the desired goals of shareholders and managers will be
202 paid a decent amount of compensation to be motivated in carrying out its duties and
203 responsibilities.

204 The management of the company by a manager is very important because it
205 is closely related to the variables that affect the financial distress that will affect the
206 value of the company that ultimately serve the interests of the company.

207 **2. Signaling Theory**

208 Melewar and Tucker (2005) suggest that the signaling theory shows that the
209 company will give a signal through action and communication. The company
210 adopted these signals in revealing the hidden attributes to stakeholders (stakeholder).
211 The company seeks to inform the financial statements, give a signal about the
212 various factors that affect the company's financial condition, and communicate the
213 strategy and policy measures to improve financial performance.

214 This study uses signaling theory as a basis for analyzing financial distress,
215 mainly due to management actions in setting corporate strategy and policy, closely
216 associated with the variables that affect the level of financial distress marginal scores
217 that occurred in SOEs.

218 **3. Balance marginal**

219 Marginal concept is the application of differential calculus on the behavior of
220 consumers and producers, as well as market pricing optimum quantity (Kastan and
221 Restiati, 2013). Implementation approach is marginal as attachment-2 is used also
222 for: (a) determining the minimum cost per unit on condition that the marginal cost is
223 equal to average cost ($MC = AC$), (b) the level of profits maximum or minimum
224 losses with the marginal revenue condition equals to the marginal cost ($MR = MC$),
225 and (c) the maximum income requirement is equal to zero marginal revenue ($MR =$
226 0).

227 The marginal theory was first developed by Hendrick Gossen (1810-1858) in
228 explaining the satisfaction (utility) from consumption of similar goods. According to
229 him, the satisfaction of marginal (Marginal Utility) from a wide goods consumption

230 will fall if the same goods are consumed more (Law Gossen I). In the second Gossen
231 law, explaining that the resources and funds available are always limited in relative
232 terms in meeting various needs are relatively limited. At the time of this theory
233 received less attention from economists, but some 40 years later, a group of
234 economists who are members of the School of Austria, such as: Jevons, Menger,
235 Böhm-Bawerk and Von Wieser, give recognition and appreciation for the work of
236 Gossen. Since then the concept of marginal recognized as a major contribution in the
237 Austrian school.

238 In its development, this theory has been used for the findings of a new theory,
239 especially since the period neoclassical such as: (a) the Austrian school with the
240 main characters Karl Menger who developed the theory of marginal utility in his
241 Grusatze der Volks Wirtshaftslehre (1817), (b) schools Cambridge pioneered by
242 Alfred Marshal with his main work, among others the pure theory of foreign trade
243 (1829), and (c) the school of Lausanne, led by Leon Walras, with his work elements
244 of pure economics (1878).

245 In this study, the marginal concept was developed by adding the formula as a
246 novelty in the measurement of financial distress. The development process of
247 measurement of financial distress formula, based on a marginal approach used in the
248 derivative function of demand and supply function analysis, marketing analysis, cost
249 theory, theory of production, utility theory, company management decisions on a
250 variety of market structure, and others. The concept of marginal use a mathematical
251 approach and the approach chart analysis (Debertin, 2012). The best conditions the
252 company when the price level and the quantity of production or sale occurs at the
253 balance of marginal revenue (MR) with the marginal cost (MC), which simplifies to
254 $MR = MC$ or $MR - MC = 0$.

255 MR is the change in total revenue (ΔTR) divided by change in sales quantity
256 (ΔQ), while the MC is the change in total cost (ΔTC) divided by change in sales
257 quantity (ΔQ), who formulated the following.

$$MR = \frac{\Delta TR}{\Delta Q} \text{ dan } MC = \frac{\Delta TC}{\Delta Q}$$

258 So that optimal conditions the company achieved when $MR = MC$ formulated below.

$$\frac{\Delta TR}{\Delta Q} = \frac{\Delta TC}{\Delta Q}$$

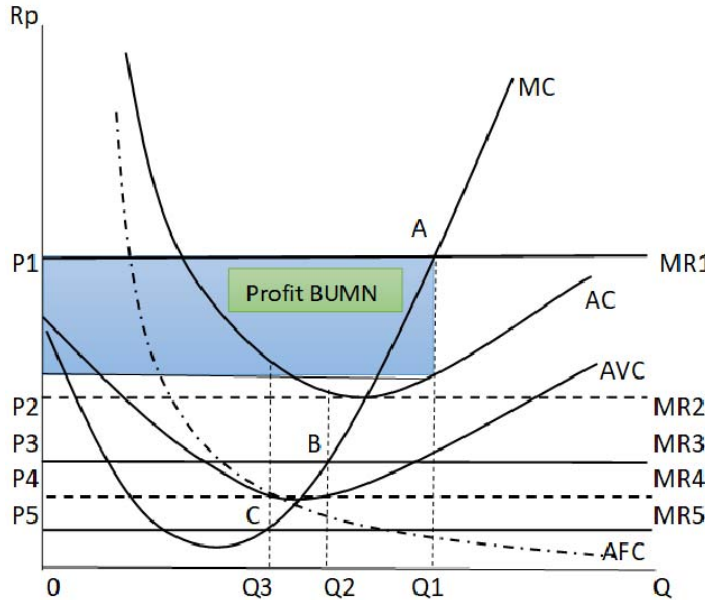
259 Or the firm's optimal conditions are achieved when the difference between the MR
260 with MC equal to zero.

$$\frac{\Delta TR}{\Delta Q} - \frac{\Delta TC}{\Delta Q} = 0$$

261

262 The marginal approach with graphical analysis illustrates the relationship of
263 the curves of TC, TR, MR, AVC and AC as shown in Figure 1, which shows that the
264 optimal operational management of the company is achieved by the intersection of

265 the MR curve with the MC curve as much as Q1 at point A, while sales quantity Q1
 266 with the price of P3 is in serious financial difficulties, so it is better to stop the
 267 company's operations so as not to cause greater losses, because the price of P3 in
 268 sales quantity Q1 is unable to cover variable costs or P3 is smaller than AVC.



269
 270 **Figure 1: Balance Margina revenue and marginal cost (MR = MC)**

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

273 This study uses the marginal balance approach as a basis for developing
 274 measurement formulas that financial distress in the proxy with a score of marginal
 275 (SMG). The Company declared free from financial distress when approaching
 276 equilibrium marginal revenue with marginal cost. Conversely, potentially
 277 experiencing financial difficulties when getting away from the marginal balance.

278 Company management must pay attention comprehensively to variables that
 279 form marginal revenue and marginal costs. Management strategies and policies are
 280 judged to be successful through the achievement of marginal equilibrium, which
 281 means that management can be assessed for its performance in managing the
 282 company if it is successful in achieving this level of balance, or in a sustainable
 283 manner closer to that marginal balance.

284 This research contributes as novelty to the measurement of financial distress,
 285 while filling the weaknesses of the previous financial distress measurement model.
 286 The measurement model of this research is supported by marginal theory that is more
 287 accurate, can be proven mathematically, can be calculated accounting, and the results
 288 can be generalized to compare between SOEs. Marginal score research in measuring
 289 the level of financial distress can be done specifically for companies that experience
 290 financial distress or separate from companies that are declared healthy or generate
 291 profits. Unlike the previous research, financial distress research must use two groups
 292 of companies because it uses a logistics approach and the measurement is weighted 1

293 for companies that experience financial distress and 0 for healthy companies. The
294 weakness of this measurement does not differentiate the level of financial distress
295 but gives the same weight to the group of companies even though the achievements
296 of financial distress differ from one company to another, as well as companies that
297 are classified as healthy companies.

298 Companies that are healthy for generating profits, not necessarily achieve a
299 balance marginal ($MR = MC$) or comparison of $MR / MC = 1$, so it needs to be
300 measured the level of marginal score. In the measurement of marginal scores can be
301 carried out specifically against a group of companies experiencing financial distress,
302 or specifically for companies that are declared as due to profit.

303 **4. Research Accomplished**

304 This study uses previous research relevant to answering the problems and
305 develop the research hypothesis. The previous study which became a reference,
306 consisting of: (1) the study of financial distress, (2) study the marginal approach, and
307 (3) state-owned research relevant to this study.

308 **1) Research Financial Distress**

309 Research previous financial distress that referenced this study, presented
310 briefly below.

- 311 a. Weston and Copeland (1997) found that bankruptcy is as a failure that occurs in
312 a company that can be distinguished on the economic failures (economic
313 distressed), and financial failure (financially distressed).
- 314 b. Hidayat, MA et al. (2014) found that financial distress is significantly affected by
315 the factors of financial performance based on indicators of financial ratios ..
- 316 c. Mas'ud, I. et al. (2012) found that the financial distress of manufacturing
317 companies in Indonesia Stock Exchange, influenced by the financial performance
318 based on indicators of financial ratios ..
- 319 d. Altman (2000), in his research on "Predicting Financial Distress of Companies:
320 Revisiting The Z-Score And Zeta Models", put forward that financial distress
321 influenced by the performance of financialbased on indicators of financial ratios
322 ..
- 323 e. Tzong and Lin (2009), in his research on "A Cross Model Study Of Corporate
324 Financial Distress Prediction In Taiwan: Multiple Discriminant Analysis, Logit,
325 Ptohit And Neural Networks Models", suggests that financial distress influenced
326 by the performance of financialbased on indicators of financial ratios ..
- 327 f. Brockett, et al. (2006) in his research on "Acomparison Of Neural Networks,
328 Statistical Methods, And Variable Choice For Life Insurers' Financial Distress
329 Prediction", suggests that financial distress influenced by the performance of
330 financialbased on indicators of financial ratios ..
- 331 g. Salehi and Abedini (2009), in his research on "Financial Distress Prediction in
332 Emerging Market: Empirical Evidences from Iran", suggests that financial
333 distress influenced by the performance of financial based on indicators of

- 334 financial ratios ..
- 335 h. Loui and Smith (2006) in his study on "Financial Distress And Corporate
336 Turnaround: A Review of the Literature and Agenda for Research", suggests that
337 financial distress influenced by financial and non financial performance.
- 338 i. Gilson danVetsuypens (2005), in his research on "CEO Compensation In
339 Financial Distressed Firms: An Analysis Empirical" suggests that financial
340 distress influenced by financial and non financial performance.
- 341 j. Pranowo, Achسانی, and Manurutng (2010) in his research on "Determinant Of
342 Corporate Financial Distress In An Emerging Market Economy: Empirical
343 Evidence From The Indonesian Stock Exchange from 2004 to 2008" suggests
344 that financial distress influenced by financial and non financial performance.
- 345 k. Janes (2003) in his research on "Accruals, Financial Distress, And Debt
346 Covenants" suggests that financial distress influenced by the performance of
347 financial based on indicators of financial ratios ..
- 348 l. Kordestani, Biglari and Bakhtiari (2011) in his research on "Ability of
349 Combinations of Cash Flow Components to Predict Financial Distress" suggests
350 that financial distress influenced by the performance of financialbased on
351 indicators of financial ratios ..
- 352 m. Elkamhi, Ericsson, and Parsons (2009), in his research on "The cost of financial
353 distress and the timing of default" suggests that financial distress influenced by
354 financial and non financial performance.
- 355 n. Zhang, et al. (2001) in his research on "Corporate Financial Distress Diagnosis in
356 China" suggests that financial distress influenced by the performance of
357 financialbased on indicators of financial ratios ..

358 2) *Marginal Approach Research*

359 Implementation marginal approach has been used in some previous studies
360 below.

- 361 a. Yustiana, et al. (2015) suggested that Marginal Cost Pricing has several
362 advantages, among others that this mechanism is considered the most efficient
363 and avoid underpriced (ratings below the price).
- 364 b. Sutjati et al (2015) suggested that in transfer pricing starting from the
365 optimization of profit, ie when the marginal revenue (MR) of the marketing
366 division is equal to marginal cost (MC) resulting equilibrium point to be projected
367 into the demand curve to obtain the transfer price and the amount of product to
368 be manufactured.
- 369 c. Coase (1972) describes the curve of demand balance, MR and MC and argues
370 that: the price and the quantity of the demand curve that is formed at the
371 intersection of the curve $MR = MC$ generate maximum profits.
- 372 d. Damayanti, et al. (2014) suggested that profit is the difference between total
373 revenue (TR) and total cost (TC). And to obtain the maximum profit, then the
374 price and sales volume was set at $MR - MC = 0$ or the value of $MR = MC$.

- 375 e. Hall (1988) in the implementation of marginal cost pricing, argued that
376 competitive firms equate marginal cost at market prices its products in order to
377 achieve maximum benefit.
- 378 f. Some other studies based on the concept of marginal balance ($MR = MC$)
379 presented by: Indrayani and Hellyward (2015) using a marginal approach ($MR =$
380 MC) in setting Product Optimalization and Profit Maximization on dairy farms;
381 Misanam (2007) using a marginal approach ($MR = MC$) in a set quantity that
382 generate maximum profit; Septiantoro and Utomo (2015) using a marginal
383 approach ($MR = MC$) to set the selling price of housing; Widyantera and
384 Goddess (2016) using a marginal approach ($MR = MC$) in determining the
385 amount of sales and the selling price of the estate.

386 3) *Research SOE*

- 387 a. Research conducted by the state-owned enterprises Institutions Management
388 Faculty of Economics and Business, University of Indonesia (2015), reported
389 that the problems that hinder the performance of SOEs is dualism faced "top
390 executive" relevant SOE SOE status as a separated state assets of the State
391 Property Act, however, also related to the Anti-Corruption Act. Many cases of
392 criminalized business policies, thus making many directors of state of fear and
393 finally decided not to do "corporate actions" significant.
- 394 b. Research SOE electricity sector by Assagaf (2015) find that in order to optimize
395 the management of PLN needs a series of policies in an integrated manner on
396 four main pillars that affect the success of the company, namely: (a) management
397 of fuel independently, (b) restructuring of a contract to purchase electricity from
398 the mains especially in rescuing private income or cost saving opportunity for
399 PLN, (c) restructuring of tariffs on the economic level through tariff-based
400 mechanisms marginal cost pricing, and (d) optimizing the management of
401 subsidiary companies through the restructuring of the company management
402 authority independently.
- 403 c. Handoko and Patriadi (2005) in his study of the subsidy policy, put forward the
404 positive effects and the negative effects of subsidies.
- 405 d. Munawar and Main (2013) in his study of subsidies, argued that the government's
406 subsidy policy has always posed opinion of the pros and cons.
- 407 e. Additional research about government participation by Mandana and Artini
408 (2012), reported that the structure of assets, the rate of sales growth, profitability,
409 and growth of the company has a significant effect on the capital structure.

410 **CONCEPTUAL FRAMEWORK**

411 Conceptual framework consists of several groups of variables, namely: the
412 intervening variables, moderating variable, dependent variable which is equipped
413 with a sensitivity analysis using alternative measurement for comparison, the
414 independent variables and control variables.

415 **a. Intervening variables**

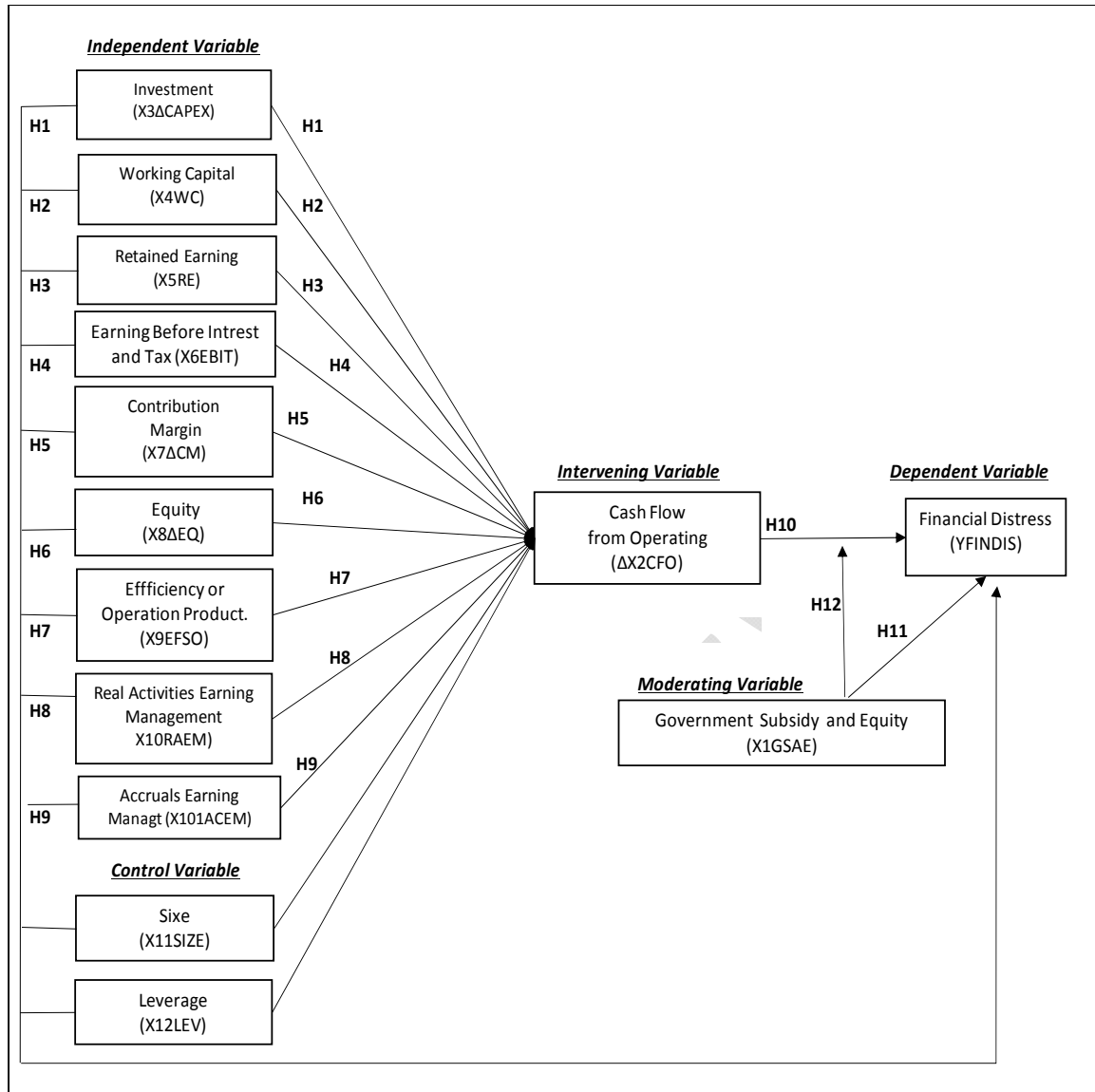
416 intervening variables growth in cash flow from operating (X2 Δ CFO) directly
417 influence financial distress (YFINDIS) moderated by the Government subsidy and
418 equity variable (X1GSAE), as picture-5. reasons to use *cash flow from*
419 *operating*(X2 Δ CFO) as an intervening variable, due to financial distress dependent
420 variable determined by the management of operating cash flow. While the
421 intervening variables from the operating cash flow was influenced directly by the
422 independent variables and control variables.

423 This intervening variable test can be done through path analysis was first
424 developed by Sewal Wright in 1934 (Sarwono, 2011).

425 **b. Moderating Variable**

426 Variable government subsidy and equity (X1GSAE) as moderating variables
427 in this study, which serves to strengthen or weaken the effect of intervening variable
428 cash flow from operating against the dependent variable of financial distress. The
429 rationale for government subsidy and equity variable(X1GSAE), because the
430 government funding policy be decisive in strengthening or weakening effect *cash*
431 *flow from operating* (X2 Δ CFO) the dependent variable *financial distress*
432 (YFINDIS).

433 Test moderator variables in this study conducted by testing the interaction of
434 variables or multiplication of intervening variables with a moderating variable. If the
435 p value <0.05 then the government subsidy and equity variables may moderate the
436 influence of independent variables on the dependent variable, and vice versa.
437 (Arieska, 2011).



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Figure 2: Conceptual Framework

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c. Dependent variable

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the dependent variable *financial distress* (YFINDIS) in this study is to show the level of difficulty faced by state-owned enterprises still depend primarily funded from government subsidies, receive assistance state capital participation (PMN) and suffered losses. Financial distress shows the financial performance generated by the management in running the corporation, it is marked by achievement level score is marginal (SMG).

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The value of the maximum SMG means optimal financial performance in the management of resources because these conditions cause the company achieve maximum profit or minimum loss assuming the condition of existing production capacity, Conversely when the SMG value less than one, then the financial performance can be improved through action strategies and management policy of the factors that affect the SMG.

453 The results of the research can be used to assess the marginal score each SOE
454 as attachment-5. The result can be assessed from three aspects and compare the
455 financial performance reflects the level of difficulty of each, namely: (a) the success
456 of state-owned enterprises over time. (B) can be used to compile the rankings
457 financial difficulties SOE performance, so it can be compared with each other. (C)
458 determine future performance targets SOEs. (D) provide solutions SMG achievement
459 of the objectives to be achieved by considering the variables that affect financial
460 distress.

461 **d. Independent variable**

462 The independent variable as a variable that directly and indirectly (through
463 variables intervening) the dependent variable, so the change in the independent
464 variable will cause the effect to the change in the dependent variable.

465 Reasons for the selection of independent variables based on a theoretical
466 constraints, results of previous studies, and and empirical conditions indicating that
467 the independent variables affecting the financial distress of SOEs, as in figure 2 the
468 framework of this research.

469 **e. Control variable**

470 Researchers do not have to enter all of the predictor variables in our model,
471 however, against the predictor variables that allegedly very influential but are
472 beyond the scope of the topic of study, the researchers did control in order to give
473 explanation better research results. Control variables used in this study, consisting of:
474 the size of the company (X11SIZE) and variable levels of leverage (X12LEV). Both
475 control variables affect directly and indirectly through intervening variables to
476 financial distress (YFINDIS).

477 Test the control variables using hierarchical regression procedure, which is
478 the development of moderated regression equation proposed by Cohen & Cohen,
479 Schmitt & Klimoski, 1991 (Harsono, 2002). Hierarchical regression is the regression
480 analysis performed many times with different variable composition, may be
481 increased, or reduced, with the aim to see the difference in the degree of influence on
482 each level (step) testing.

483 **DEVELOPMENT HYPOTHESIS**

484 Based on the theory and the results of previous research, the development of
485 hypotheses answering these research problems stated below.

486 **a. Capital Expenditure (Hypothesis H1)**

487 Selection of independent variables *capital expenditure* (X3ΔCAPEX) closely
488 related to the agency theory and signaling theory. Management actions to meet the
489 interests of shareholders and give a signal to the stakeholders, impact on the variable
490 *capital expenditure* (X3ΔCAPEX) which can affect the company's financial distress.

491 Impact on *cash flow from operating* occurs because of necessity to meet the
492 operational needs of the company. Imbalance that occurs in the management of
493 capital expenditure (X3ΔCAPEX) causing a deficit cash flow from operating and

494 financial distress affecting SOE. Therefore, management of capital expenditure
495 (X3ΔCAPEX) SOE important role in order not to complicate the operational cash
496 flow from operating.

497 Several previous studies found that capital expenditure (X3ΔCAPEX) affect
498 the success or financial difficulties. And based on the importance of variable capital
499 expenditure (X3ΔCAPEX) mentioned, then This study propose the following
500 hypothesis H1.

501 **H1:** Growth in investment or capital expenditure (X3ΔCAPEX) direct and indirect
502 impact of the financial distress (YFINDIS) state that receives budget funding or
503 financial difficulties.

504 b. ***Working capital (hypothesis H2)***

505 Selection of independent variables *Working capital (X4WC)* closely related to
506 the agency theory and signaling theory. Management actions to meet the interests of
507 shareholders and give a signal to the stakeholders, impact on the variable *Working*
508 *capital (X4WC)* which can affect the company's financial distress.

509 Impact on *cash flow from operating* occurs because of necessity to meet the
510 operational needs of the company. Imbalance that occurs in Working capital
511 management (X4WC) causing a deficit cash flow from operating and financial
512 distress affecting SOE. Therefore, management Working capital (X4WC) SOE
513 important role in order not to complicate the operational cash flow from operating.

514 Several previous studies have found that Working capital (X4WC) affect the
515 success or financial difficulties. And based on the importance of variables Working
516 capital (X4WC) mentioned, then This study propose the following hypothesis H2.

517 **H2:** *Working capital (X4WC)* direct and indirect impact of the financial distress
518 (YFINDIS) state that receives budget funding or financial difficulties.

519 c. ***retained Earnings (Hypothesis H3)***

520 Selection of independent variables *retained earnings (X5RE)* closely related
521 to the agency theory and signaling theory. Management actions to meet the interests
522 of shareholders and give a signal to the stakeholders, impact on the variable *retained*
523 *earnings (X5RE)* which can affect the company's financial distress.

524 Impact on *cash flow from operating* occurs because of necessity to meet the
525 operational needs of the company. Imbalance that occurs in the management of
526 retained earnings (X5RE) causing a deficit cash flow from operating and financial
527 distress affecting SOE. Therefore the management of retained earnings (X5RE)
528 important role in order not to complicate the operational state enterprises from
529 operating cash flow.

530 Several previous studies have found that the retained earnings (X5RE) affect
531 the success or financial difficulties. And based on the importance of the variables
532 retained earnings (X5RE), then This study propose the following hypothesis H3.

533 **H3:** *retained earnings (X5RE)* direct and indirect impact of the financial distress
534 (YFINDIS) state that receives budget funding or financial difficulties.

535 d. ***Earning Before interest And Taxes (Hypothesis H4)***

536 Selection of independent variables *earnings before interest and tax* (X6EBIT)
537 closely related to the agency theory and signaling theory. Management actions to
538 meet the interests of shareholders and give a signal to the stakeholders, impact on the
539 variable *earnings before interest and tax* (X6EBIT) which can affect the company's
540 financial distress.

541 Impact on *cash flow from operating* occurs because of necessity to meet the
542 operational needs of the company. Imbalance that occurs in the management of
543 earnings before interest and tax (X6EBIT) causing a deficit cash flow from operating
544 and financial distress affecting SOE. Therefore, management earnings before interest
545 and tax (X6EBIT) important role in order not to complicate the operational state
546 enterprises from operating cash flow.

547 Several previous studies have found that earnings before interest and tax
548 (X6EBIT) affect the success or financial difficulties. And based on the importance of
549 variable earnings before interest and tax (X6EBIT), then This study propose the
550 following hypothesis H4.

551 **H4:** *Earning before interest and tax* (X6EBIT) direct and indirect impact of the
552 financial distress (YFINDIS) state that receives budget funding or financial
553 difficulties.

554 e. ***Growth Contribution Margin (Hypothesis H5)***

555 Selection of independent variables *contribution margin growth* (X7ΔCM)
556 closely related to the agency theory and signaling theory. Management actions to
557 meet the interests of shareholders and give a signal to the stakeholders, impact on the
558 variable *contribution margin growth* (X7ΔCM) which can affect the company's
559 financial distress.

560 Impact on *cash flow from operating* occurs because of necessity to meet the
561 operational needs of the company. Imbalance that occurs in the management of the
562 contribution margin growth (X7ΔCM) causing a deficit cash flow from operating
563 and financial distress affecting SOE. Therefore, management of growth in
564 contribution margin (X7ΔCM) important role in order not to complicate the
565 operational state enterprises from operating cash flow.

566 Several previous studies have found that the growth in contribution margin
567 (X7ΔCM) affect the success or financial difficulties. And based on the importance of
568 growth variable contribution margin (X7ΔCM), then This study propose the
569 following hypothesis H5.

570 **H5:** *Contribution margin growth* (X7ΔCM) direct and indirect impact of the
571 financial distress (YFINDIS) state that receives budget funding or financial
572 difficulties.

573 f. ***Growth Equity (Hypothesis H6)***

574 Selection of independent variables *equity growth* (X8ΔEQ) closely related to
575 the agency theory and signaling theory. Management actions to meet the interests of

576 shareholders and give a signal to the stakeholders, impact on the variable *equity*
577 *growth* (X8ΔEQ) which can affect the company's financial distress.

578 Impact on *cash flow from operating* occurs because of necessity to meet the
579 operational needs of the company. Imbalance that occurs in the management of
580 equity (X8ΔEQ) causing a deficit cash flow from operating and financial distress
581 affecting SOE. Therefore, management of growth equity (X8ΔEQ) important role in
582 order not to complicate the operational state enterprises from operating cash flow.

583 Several previous studies have found that the growth of equity (X8ΔEQ)
584 affect the success or financial difficulties. And based on the importance of growth
585 variable contribution margin (X7ΔCM), then This study propose the following
586 hypothesis H6.

587 **H6:** Growth in equity or equity (X8ΔEQ) direct and indirect impact of the financial
588 distress (YFINDIS) state that receives budget funding or financial difficulties.

589 g. ***The level of efficiency or productivity of Operations (Hypothesis H7)***

590 Selection of independent variables level of efficiency or productivity of the
591 operation (X9EFSO) closely related to the agency theory and signaling theory.
592 Management actions to meet the interests of shareholders and give a signal to the
593 stakeholders, impact on the variable level of efficiency or productivity of the
594 operation (X9EFSO) which can affect the company's financial distress.

595 Impact on *cash flow from operating* occurs because of necessity to meet the
596 operational needs of the company. Imbalance that occurs at the level of efficiency or
597 productivity management operations (X9EFSO) causing a deficit cash flow from
598 operating and financial distress affecting SOE. Therefore, the management level of
599 efficiency or productivity of the operation (X9EFSO) important role in order not to
600 complicate the operational state enterprises from operating cash flow.

601 Several previous studies have found that the level of efficiency or
602 productivity of the operation (X9EFSO) affect the success or financial difficulties.
603 And based on the importance of variable levels of efficiency or productivity of the
604 operation (X9EFSO), then This study propose the following hypothesis H7.

605 **H7:** The level of efficiency or productivity of the operation (X9EFSO) direct and
606 indirect impact of the financial distress (YFINDIS) state that receives budget funding
607 or financial difficulties.

608 h. ***Earning Management (Hypothesis H8 and H9)***

609 Selection of independent variables earnings management closely related to
610 the agency theory and signaling theory. Management actions to meet the interests of
611 shareholders and give a signal to the stakeholders, impact on the variable earnings
612 management which can affect the company's financial distress.

613 Impact on *cash flow from operating* occurs because of necessity to meet the
614 operational needs of the company. Imbalance that occurs in the management of
615 earnings management causing a deficit cash flow from operating and financial
616 distress affecting SOE. Therefore the important role of management earnings

617 management in order not to complicate the operational state enterprises from
618 operating cash flow.

619 Several previous studies have found that earnings management affect the
620 success or financial difficulties. And based on the importance of earnings
621 management variables, then This study propose the following hypothesis H8 and H9.

622 **H8:** Real growth of earnings management activities (X10RAEM) direct and indirect
623 impact of the financial distress (YFINDIS) state that receives budget funding or
624 financial difficulties.

625 **H9:** Growth accruals earnings management (X101ACEM) direct and indirect impact
626 of the financial distress (YFINDIS) state that receives budget funding or financial
627 difficulties.

628 i. ***Cash Flow from Operating (Hypothesis H10)***

629 variable selection *cash flow from operating* (X2ΔCFO) closely related to the
630 agency theory and signaling theory. Management actions to meet the interests of
631 shareholders and give a signal to the stakeholders, impact on the variable *cash flow*
632 *from operating* (X2ΔCFO) which can affect the company's financial distress.

633 Impact on *cash flow from operating* occurs because of necessity to meet the
634 operational needs of the company. Imbalance that occurs in the management of cash
635 flow from operating (X2ΔCFO) affect SOE's financial distress. Therefore, the
636 management of cash flow from operating (X2ΔCFO) important role in order not to
637 complicate the operational SOE corporate finance.

638 Several previous studies have found that the cash flow from operating
639 (X2ΔCFO) affect the success or financial difficulties. And based on the importance
640 of intervening variable cash flow from operating (X2ΔCFO), then This study
641 propose the following hypothesis H10.

642 **H10:** Growth in cash flow from operating (X2ΔCFO) positive and significant impact
643 on the financial distress of SOEs (YFINDIS) that receives additional funding
644 subsidies and government participation or PMP.

645 j. ***Government Subsidies and Equity (hypotheses H11 and H12)***

646 Selection of moderating variables government subsidy and equity closely
647 related to the agency theory and signaling theory. Management actions to meet the
648 interests of shareholders and give a signal to the stakeholders, impact on the variable
649 *government subsidy and equity* which can affect the company's financial distress.

650 Impact on *cash flow from operating* occurs because of necessity to meet the
651 operational needs of the company. Imbalance that occurs in management *government*
652 *subsidy and equity* SOE affect financial distress. Therefore, management *government*
653 *subsidy and equity* important role in order not to complicate the operational SOE
654 corporate finance.

655 Several previous studies have found that *government subsidy and equity* affect
656 the success or financial difficulties. And based on the importance of the

657 variable *government subsidy and equity* mentioned, then This study propose the
658 following hypothesis H11 and H12.

659 **H11:** *Government subsidy and equity* (X1GSAE) significantly affects the financial
660 distress (YFINDIS)) state that receives budget funding or financial difficulties.

661 **H12:** The interaction between the variables moderating government subsidy and
662 equity with intervening variables from the operating cash flow growth (X1GSAE x
663 X2ΔCFO) strengthening the relationship between growth in cash flow from
664 operating (X2ΔCFO) with financial distress of SOEs (YFINDIS) which receive
665 budget funding or financial difficulties.

666 RESEARCH METHODOLOGY

667 Sample and population

668 For the implementation of this analisis models, it uses the method of
669 sampling with purposive sampling technique, namely the determination of sample by
670 choosing some particular samples were assessed in accordance with the purpose of
671 research problems that the data obtained is more representative. As noted above
672 phenomenon, the samples can be selected from the 118 SOEs with criteria: (a) state-
673 owned companies receive subsidies (b) state that receives additional capital, and (c)
674 state that suffered losses. To prevent data SOEs still relevant to current conditions
675 and future projections, the observation is limited by using time series data of the last
676 5 years ie 2014 - 2018.

677 Measurement variable

678 a. The dependent variable of financial distress (YFINDIS)

679 Measurement of financial distress in this study adopted a marginal approach
680 as a novelty on the dependent variable pengukuran financial distress with marginal
681 scores proxy (SMG) with the following formulation.

$$682 \quad SMg = \frac{MR}{MC} \quad \text{atau} \quad SMg = \frac{\left(\frac{\Delta TR}{\Delta Q}\right)}{\left(\frac{\Delta TC}{\Delta Q}\right)}$$

683 Where: SMG = score is marginal, MR = marginal revenue, MC = marginal cost, ΔTR = change in
684 total revenue, ΔTC = change in total cost, ΔQ = change in quantity sold.

685

686 b. Moderating variables government subsidy and equity (X1GSAE)

687 This variable is measured using price-gap formula as used by Doug Koplou
688 (2009), that is :

$$X1GSAE = \frac{\text{Cost of sales} - \text{Total revenue}}{\text{Cost of sales}}$$

689 c. The intervening variables from the operating cash flow growth (X2ΔCFO)

690 The measurements of these variables is based on calculations that are
691 reported through the financial statements at the end of the year as used in
692 research Chen et al. (2010), With the calculation:

$$X2\Delta CFO = \frac{CFO(t) - CFO(t-1)}{CFO(t-1)}$$

693 Where: $X2CFO_t = (\text{Beginning balance of cash}) + (\text{Total receipts of cash derived from}$
 694 $\text{operating activities, including the amount of receivables-current}) - (\text{end balance of cash at}$
 695 $\text{the end during the period})$, or $X2CFO_t = \text{Total expenditures for the operations of the}$
 696 $\text{company including debt payments in current period}$,

697
 698 d. The independent variable investment growth ($X3\Delta CAPEX$)

699 This variable was measured by using a formula as in research Chen et al.
 700 (2010), that is :

$$X3\Delta CAPEX = \frac{\text{Fixed assets}(t) - \text{Fixed assets}(t-1)}{\text{Fixed assets}(t-1)}$$

701 e. Independent Variable Working Capital ($X4WC$)

702 Measurement of this variable is based on the calculations used in research Brigham
 703 and Daves (2007), that is :

$$X4WC = \frac{\text{Working capital}(t) - \text{Working capital}(t-1)}{\text{Working capital}(t-1)}$$

704 f. The independent variable Retained Earnings ($X5RE$)

705 Variable measurement is performed using the formula as in research Brigham and
 706 Daves (2007), that is :

$$X5RE = \frac{\text{Retained earning}(t) - \text{Retained earning}(t-1)}{\text{Retained earning}(t-1)}$$

707 g. The independent variable interest and Earnings Before Tax ($X6EBIT$)

708 Variable measurement is performed using the formula as in research Brigham
 709 and Daves (2007), that is :

$$X6EBIT = \frac{EBIT(t) - EBIT(t-1)}{EBIT(t-1)}$$

710 h. The independent variable contribution margin growth rate ($X7\Delta CM$)

711 This variable was measured by using a formula as in research Ramadan (2015), that
 712 is :

$$X7\Delta CM = \frac{CM(t) - CM(t-1)}{CM(t-1)}$$

713 Where: Contribution margin is calculated based on the difference between the price or the
 714 average tariff per unit minus the variable cost per unit.

715

716 i. The independent variable equity growth ($X8\Delta EQ$)

717 Variable measurement is done by using the formula as in Brigham and Daves
 718 (2007), that is :

$$X8\Delta EQ = \frac{\text{Equity}(t) - \text{Equity}(t-1)}{\text{Total Debt}(t)}$$

719 j. The independent variable levels of efficiency or productivity of the operation
720 (X9EFSO)

721 This variable was measured by using a formula as used in research Warrad
722 and Omari (2015), that is :

$$X9EFSO = \frac{\text{Operation income (output)}}{\text{Assets Operation (input)}}$$

723 k. The independent variable of real earnings management activities (X10RAEM)

724 This variable was measured by using abnormal operating cash flow, the cost
725 of abnormal prouksi and abnormal discretionary expenses. The independent variable
726 of real earnings management activities are actions taken by management to influence
727 the financial statements through policies related to corporate activity such as
728 production, sales, accounts receivable, inventory and more.

729 Measurement activities of a real variable in this study, using the equation as
730 in Roychowdhury (2006) the following.

731 (1) *Cash flow operasi (CFO)*:

$$732 \quad CFO_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (S_t/A_{t-1}) + \beta_2 (\Delta S_t/A_{t-1}) + e_t$$

733 (2) *Cost of good sold (COGS)*:

$$734 \quad COGS_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta (S_t/A_{t-1}) + e_t$$

735 (3) *Change in inventory (ΔINV)*:

$$736 \quad \Delta INV_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (\Delta S_t/A_{t-1}) + \beta_2 (\Delta S_{t-1}/A_{t-1}) + e_t$$

737 (4) *Production (PROD)*:

$$738 \quad PROD_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (S_t/A_{t-1}) + \beta_2 (\Delta S_t/A_{t-1}) + B_3 (\Delta S_{t-1}/A_{t-1}) + e_t$$

740 (5) *Discretionary expense (DISEXP)*:

$$741 \quad DEXP_t/A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta (S_{t-1}/A_{t-1}) + e_t$$

742
743 This variable measurement procedure begins by using equation (1) to
744 equation (5), and then calculated the residual or abnormal from the fifth equation
745 (ACFO, ACOGS, ΔINV , APROD, and ADEXP) as well as on research Cohen et al.
746 (2008) in Roychowdhury (2006) below.

$$747 \quad X10RAEM = AREAL_t = ACFO_t + ACOGS_t + \Delta INV_t + APROD_t +$$
$$748 \quad ADEXP_t$$

749 *Where: AREA or X10RAEM = abnormal or residuals of the estate activities; ACFO =*
750 *abnormal or residual operating cash flow; ACOGS = abnormal or residual cost of goods*
751 *sold; ΔINV = Abnormal or residual changes in inventory value; APROD = abnormal or*
752 *residual costs of production; ADEXP = abnormal or residual discretionary expense; A_t =*
753 *total assets, end of year t; S_t : sales period.*

754 l. Accruals independent variable earnings management (X101ACEM)

755 Measurement of accruals earnings management variables based on the
756 difference between the earnings before interest and tax cash flow from operations.
757 Several previous studies using the following formula.

758

$$ACCR = NI - CFO$$

759 This study used the formula:

760

$$X_{101}ACEM = NI - CFO$$

761

761 *Where: ACCR = total accruals; NI = net income before extraordinary items; CFO = cash flow from*
762 *operating activities.*

763

m. Control variables firm size (X11SIZE)

764

This variable was measured by using a formula as used in research Ramadan

765

(2015),that is :

$$X11SIZE(t - 1) = LOG (Total aset (t - 1))$$

766

Some previous studies that used a variable size of the company or firm size

767

for research related to the degree of success or financial difficulties.

768

n. Control variable level of leverage (X12LEV)

769

ini variables measured by using a formula as used in research Chen et al.

770

(2010),that is :

$$X12LEV(t) = \frac{Total Debt (t)}{Total Asset (t)}$$

771

Some previous studies that used a variable structure of debt or leverage for

772

research related to the degree of success or financial difficulties.

773

Model Analysis

774

To answer the research, the variables used in the analysis of independent variables,

775

control variables, and variables are moderating interactions against financial distress.

776

While the indirect effect used the equation regression demonstrates the influence of

777

independent variables and variable control of the intervening variable operating cash

778

flow, followed by the effect of operating cash flow to financial distress.

779

To answer the research, the analysis of the models with the direct influence

780

of independent variables, control variables, variables and moderating variables reacts

781

to financial distress. While the indirect effect used the equation regression

782

demonstrates the influence of independent variables and variable control of the

783

intervening variable operating cash flow, followed by the effect of operating cash

784

flow to financial distress.

785

The results can be compared and tested the significance of the effect of direct

786

and indirect influence on the financial distress through operating cash flow. To test

787

the hypothesis above, then used regression models 1, 2 and 3 below.

788

Model 1: The direct effect of the independent variables, control, intervening,

789

moderating and variable interactions toward financial distress

790

$$YFINDIS_t = \beta_0 + \beta_1 X_1GSAE_t + \beta_2 X_2\Delta CFO_t + \beta_3 X_3\Delta CAPEX_t + \beta_4 X_4WC_t +$$

791

$$\beta_5 X_5 RE_t + \beta_6 X_6 EBIT_t + \beta_7 X_7 \Delta CM_t + \beta_8 X_8 \Delta EQ_t + \beta_9 X_9 EFSO_t$$

792

+

793

$$\beta_{10} X_{10} RAEM_t + \beta_{11} X_{101} ACEM_t + \beta_{12} X_{11} SIZE_t + \beta_{13} X_{12} LEV_t +$$

794

$$\beta_{14} (X_1 GSAE_t \times X_2 \Delta CFO_t) + e_t$$

795 **Model 2:** Influence of independent variables and control variables, to intervening
796 variables, and indirect influence on the dependent variable

$$\begin{aligned} 797 \quad X_2\Delta\text{CFO}_t &= \beta_0 + \beta_3X_3\Delta\text{CAPEX}_t + \beta_4X_4\text{WC}_t + \beta_5X_5\text{RE}_t + \beta_6X_6\text{EBIT}_t + \\ 798 \quad &\beta_7X_7\Delta\text{CM}_t + \beta_8X_8\Delta\text{EQ}_t + \beta_9X_9\text{EFSO}_t + \beta_{10}X_{10}\text{RAEM}_t + \\ 799 \quad &\beta_{11}X_{101}\text{ACEM}_t + \beta_{12}X_{11}\text{SIZE}_t + \beta_{13}X_{12}\text{LEV}_t + e_t \end{aligned}$$

800

801 **Model 3:** CFO influence of the financial distress

$$802 \quad \text{YFINDIS}_t = \beta_0 + \beta_1X_2\Delta\text{CFO}_t + e_t$$

803 Where:

804 YFINDIS_t = financial distress based on the regression coefficient β score of marginal period t

805 X1GSAE_t = government subsidy and equity period t

806 X2 Δ CFO_t = growth in cash flow from operating period t

807 X1GSAE_t x X2 Δ CFO_t = interaction variable X2 Δ CFO_t X1GSAE_t with variable period t

808 X3 Δ CAPEX_t = capital expenditure growth period t

809 X4WC_t = working capital period t

810 X5 RE_t = retained earnings period t

811 X6EBIT_t = earnings before interest and tax period t

812 X7 Δ CM_t = contribution margin growth period t

813 X8 Δ EQ_t = growth equity in period t

814 X9EFSO_t = level of efficiency or productivity of the operation period t

815 X10RAEM_t = real earnings management activities period t

816 X101ACEM_t = accruals earnings management period t

817 X11SIZE_t = size companies period t

818 X12LEV_t = degree of leverage period t

819 β_0 : constants

820 β_1 ... β_{14} : independent variable regression coefficients

821

822 **RESULTS AND DISCUSSION**

823 The results of this research will be used to measure the level of financial
824 distress of SOEs with the following steps:

825 a. Calculate an estimate of financial distress by using constant and coefficient
826 corresponding regression equation model above.

827 b. Realization data corresponding audited financial statements are used to estimate
828 the financial distress, by way of multiplying the number of each of these
829 variables with regression coefficient point a above.

830 c. Summation constants and multiplication coefficient above item will result in the
831 level of financial distress of SOEs in the estimation period.

832 d. The results of estimations point c above, as a basis for assessing the level of
833 financial distress SOE

834 e. Results item d above was used to evaluate a by comparison to the previous
835 period or to the realization of the target set earlier.

836 f. The result of point d can also be used for comparison with other state-owned
837 enterprises, so that the position of the state-owned enterprise can be mapped.

838 g. The calculation result d grains can be used as a reference in formulating
839 strategies and policies to improve performance management SOE leven
840 marginally better score, taking into account significant factors influence terhadp
841 SOE financial distress.

842 The results of this research have contributed very important or exhibited
843 significantly to the measurement of financial distress companies in particular against
844 state-owned enterprises in Indonesia. Some disadvantages of previous financial
845 distress research has been perfected in this study, namely:

- 846 a. Previous research using logistic model with indicators 1 utnuk companies
847 experiencing financial distress and 0 for companies that are otherwise healthy or
848 not experiencing financial distress.
- 849 b. The disadvantage in point A above lies in the indicator 1 or 0, while the level of
850 financial distress varies between each other, as well as to healthy companies.
851 This study measured a group of companies with varying levels according to the
852 level of marginal scores each SOE.
- 853 c. Another weakness in point a above is that research must use both groups so that
854 variations in statistical measurements of 1 or 0. occur. This study can measure
855 financial distress specifically for companies that experience financial distress or
856 specific healthy companies. Companies do not necessarily achieve optimal
857 marginal scores, so the results of the study generally apply to state-owned
858 enterprises that experience financial distress or those that are otherwise healthy to
859 earn profits every year.
- 860 d. Definition of grouping companies experiencing financial distress are different
861 from one another, so that the financial distress of the measurement results can not
862 be generalized.
- 863 e. The previous study using data that is not relevant to the current state, so that the
864 coefficient is used as a formula to measure financial distress scores unrealistic if
865 it is used to assess the financial condition of the company today.
- 866 f. Many studies using the score past research results, so the results are not realistic
867 because previous studies have weaknesses as point a to e above.

868 This study uses a marginal approach based on financial distress that is able to
869 overcome the weaknesses of previous research as mentioned above. The
870 measurement of financial distress in the study is referred to as a marginal score
871 (SMg) which can make a significant contribution in evaluating the financial
872 condition of SOEs, as well as providing indicators of factors that have a significant
873 effect on financial distress, to become a reference in preparing strategies and
874 management policies to increase marginal level scores Better state-owned
875 enterprises.

876 **CONCLUSION**

- 877 a. Model estimates of financial distress this study could contribute to overcome the
878 weaknesses of previous studies, so that the measurement becomes more realistic
879 financial distress.

- 880 b. Measurement of financial distress in the study using the marginal approach
 881 proved mathematis and evidenced by accounting calculations.
- 882 c. Measurement of financial distress in the proxy with a score of marginal, with a
 883 maximum indicator for companies that achieve the best conditions in the
 884 management of its operations.
- 885 d. Healthy companies may not necessarily gain a marginal score, as well as
 886 companies experiencing financial distress can be categorized according to the
 887 achievements of the marginal score.
- 888 e. The results of the study with a marginal score were more relaxed and relevant
 889 than using the score as the results of previous studies.

890 **LIMITATION**

891 This research is still limited to the financial distress model, so that the
 892 implementation needs to be continued with this research by using the data from the
 893 audited financial statements, so the results are more realistic because the data used
 894 meets accounting reporting standards.

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