Empirical Analysis of The Probability Bankruptcy, Audit Effort, And Its Impact on Audit Delay: Evidence from State-Own Enterprise in Indonesia

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Abstract. Audit Delay is the period of auditing financial statements by the auditor from the closing year until the independent auditor's report is signed. If it takes a long time can cause delays in reporting the financial statement by the company. This study aims to obtain empirical evidence about several factors that can cause audit delay. The variables used in this study are the probability of State-Owned Enterprise bankruptcy and audit effort as independent variable and audit delay as dependant variable. The population used in this study are state-owned companies listed on the Indonesia Stock Exchange (IDX) for the period 2016-2020. Samples of 17 states-owned companies were taken using purposive sampling method. Data analysis used logistic regression analysis with SPSS 22 tool. The result of this study is expected to be the additional literature that can be used for companies to prevent long audit that causing delays in financial reporting.

Keywords: Bankruptcy Probability, State-Owned Enterprise, Audit Effort, Audit Delay.

1 Introduction

Good financial reports according to Kieso is a relevant financial report, which is said to be relevant if it has predictive value and timeliness so that it does not reduce the quality of information for decision making [1]. In ensuring the timeliness of reporting financial statements, a regulation is made in Bapepam and LK Regulation Number X.K.6 in the decision of the Chairman of the Capital Market and Financial Institution Supervisory Agency Number KEP-431/BL/2012, stating that the annual financial report is submitted no later than the end of the fourth month (120 days) after the date of the annual financial statements and must be accompanied by a public accountant's report indicating that the financial statements have been audited.

The audit process requires a long period of time. If it gets longer, the company is threatened not to be able to comply with the regulations from the regulator. There is a phenomenon of delay in the collection of financial statements that occurred in several companies, such as in the IDX announcement no. Peng-LK-00005/BEI.PP1/07-2020, as of June 30, 2020, there are 42 companies that have not submitted audited financial statements ending as of December 31, 2019. Companies need to consider audit delays so that there are no delays caused by several factors. The first factor that affects audit delay is the probability of bankruptcy. Companies that have a high probability of bankruptcy will increase audit delay because auditors will need additional data needed to produce opinions that are in accordance with the company's circumstances and require a longer audit time [2].

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The second factor that affects audit delay is audit effort. In carrying out the audit process there will be an effort made by the auditors to complete in order to obtain an audit opinion. The more assets that must be audited, the effort or time that will be sought to conduct an audit must be higher and ultimately increase the audit delay. Wijayanti and Effriyanti who conducted research on service and real estate companies in 2009-2017 found that audit effort had an effect on audit delay [3].

2 Literature Review

2.1.1 BASIC THEORY

There is a general theory or grand theory that is needed in a study as a basis and a starting point for other theories. In this study, the general theory used is Agency Theory and Signal Theory. Agency theory according to Jensen and Meckling is an agency relationship between the principal or the owner of the company and the management as an agent in which the principal asks the agent to perform services in his interest by delegating authority to the agent [4]. The signal theory proposed by Spence says that the sender will provide information that can be utilized by the recipient to then adjust his behavior according to the understanding of the signal given [5].

2.1.2 AUDIT DELAY

The definition of audit delay has been put forward by several previous researchers. Audit report lag or audit delay is the interval from the end of the year to the date of signing in the auditor's report [6]. According to Ashton, audit delay is the time span between the reporting date and the date of the auditor's opinion [7]. Halim defines audit delay as the length of time for the completion of the audit, measured from the closing date of the financial year to the date of issuance of the audit report [8]. Based on the understanding according to some researchers, audit delay or audit report lag is the period of time for the auditor to complete the audit process on the annual financial statements which can be measured from the time difference between the closing date of the financial reporting year (December 31) and the date of signing in the report of independent auditors.

2.1.3 PROBABILITY OF BANCKRUPTCY

Nurahmayani stated that high level of banckruptcy probability will increase audit delay because auditors will need additional data in order to produce opinions according to the companies's circumstances and requiring a longer audit time. Otherwise, a low level of banckruptcy probability will minimize audit delay because the company will try to improve the timeliness of the financial statement submission as a good signal for interested parties [2].

There are several models that can be used to predict bankruptcy, but this research used The Altman model that known as the Altman z-score, which is a bankruptcy prediction model using the Multiple Discriminant Analysis method on five types of financial ratios, namely working capital to total assets, retained earnings to total assets, earnings before interest and taxes to total assets, market value of equity to book value of total debts, and sales to total assets [9]. There have been several revisions made to this model, until the last model developed by Altman is:

$$Z = 6{,}56X_1 + 3{,}26X_2 + 6{,}73X_3 + 1{,}05X_4$$

X_1 is working capital (difference between current assets and current liabilities) divided by total assets (total current assets and fixed assets), X_2 is retained earnings (total profit that has been determined and has not been determined) divided by total assets, X_3 is profit before interest and taxes divided by total assets, X_4 is the book value of equity (the number of outstanding shares multiplied by the year-end stock price) divided by the book value of debt (amount of short-term and long-term debt), the resulting z-score will be divided into three categories, namely the Safe Zone ($Z > 2.60$), Gray Zone ($1.1 < Z < 2.60$), and Danger Zone ($Z < 1.1$) [10].

2.1.4 AUDIT EFFORT

Audit effort is the effort required by the audit team to complete the overall audit process, including audit planning, fieldwork, and review [11]. Caramanis and Lennox say that audit time is a reasonable projection for audit effort, where audit time is closely related to the size of the client company [12]. Vuko and ular in their research measured audit effort by comparing the scope of the audited company's assets, inventories and receivables, with the overall assets owned by the company [13]. The more units of inventory and receivables that must be audited, the effort or time that will be sought to conduct an audit must be higher and ultimately increase the audit delay.

3 Methodology and Data Analysis

3.1 RESEARCH METHOD

The data collection method used is the documentation method obtained from previous research and support from other literature. Data on variables are obtained from financial and annual reports published by companies on the IDX on its official website www.idx.co.id. The type of research used is quantitative with secondary data obtained from existing media and sources. In accordance with the proposed hypothesis, this study uses the statistical method of logistic regression analysis.

3.2 VARIABLE OPERATION

3.2.1 AUDIT DELAY

According to several studies, audit delay or audit report lag is the period of time for the auditor to complete the audit process on the annual financial statements which can be measured by the time difference between the closing date of the financial reporting year (December 31) and the date of signing the auditor's report. In this study, audit delay is measured by a dummy variable as in [14] where 0 is for companies that experience audit delays of no later than 120 days and 1 for companies that experience audit delays of more than 120 days.

3.2.2 PROBABILITY OF BANKRUPTCY

Based on the several studies, bankruptcy can be defined as a company's failure to carry out its operations that occurs when all debts exceed the fair value of their total assets (actual insolvency) or when the company is unable to meet obligations at maturity (technical insolvency) due to the current state of the dynamic business world. The indicator used is the third Altman formula which according to Rudianto [10] is the most flexible formula to be used in various types of company business fields, both go-public and not, and suitable for use in developing countries such as Indonesia. It can be mathematically written as follows:

$$Z = 6{,}56X_1 + 3{,}26X_2 + 6{,}72X_3 + 1{,}05X_4$$

Information :

X_1	=	Working Capital/Total Assets
X_2	=	Retained Earnings/Total Assets
X_3	=	EBIT/Total Assets
X_4	=	Book Value of Equity/Book Value of Debt

In the Altman model the results of the z-score will be divided into three categories, namely the Safe Zone (Z > 2.60), the Gray Zone (1.1 < Z < 2.60), and the Danger Zone (Z < 1, 1). Similar to the research of Widyawati and Anggraita (2013), this variable will be measured as a dummy variable with a value of 1 if the company is included in the dangerous and gray zone (vulnerable) and 0 for companies that are included in the safe zone.

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$$Audit\ Effort = \frac{Inventories + Receiveables}{Total\ Assets}$$

TABLE 3.1. VARIABLE OPERATION

Variable	Indicator
X_1 Probability of Bankruptcy	Dummy Variable 1 = Danger or Gray Zone 0 = Safe Zone
X_2 Audit Effort	$\frac{Inventories + Receiveables}{Total\ Assets}$
Y Audit Delay	Dummy Variable 1 = Companies that experience audit delays for more than 120 days. 0 = Companies that experience an audit delay of at least 120 days

3.2.4 RESEARCH POPULATION AND RESEARCH SAMPLE

The population used in this study were all state-owned companies listed on the Indonesia Stock Exchange (IDX) from 2016 to 2020. The sample in this study was taken using a purposive sampling method with the following criteria:

1. Reported financial statements from 2016 to 2020
2. Published financial statements in rupiah currency.

3.2.5 Data Collection and Testing Method

In this study, the data collection method used is the documentation method, where data on literature studies are obtained from previous research and support from other literature. Data on variables are obtained from financial and annual reports published by companies on the IDX on its official website www.idx.co.id. The data analysis technique used is logistic regression analysis which must pay attention to three things, test of the Hosmer and Lemeshow model, the overall fit model, and the coefficient of determination of Nagelkerke R Square.

3.3 HYPOTESIS TEST

This study uses the variables of bankruptcy probability and audit effort that affect audit delay with logistic regression. In this study there are two hypotheses and tested with the Wald test to determine whether there is an effect of the independent variable on the dependent variable partially by looking at the significant p-value (probability value), if it is greater than the 5% then the hypothesis is rejected or the independent variable does not have a significant effect on the dependent variable [15].

3.4 RESEARCH MODEL

The logistic regression analysis tool is used because Ghozali says that this tool is suitable for use in research that has a categorical dependent variable (nominal or non-metric) where the audit delay variable in this study is a dummy variable [15].

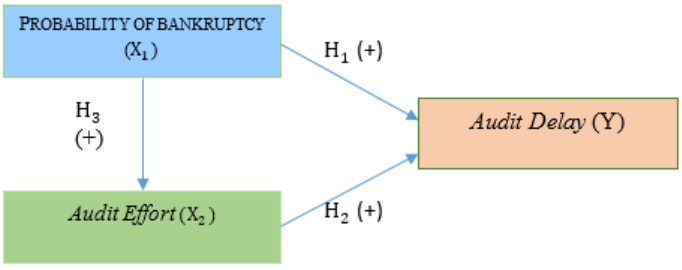

Fig. 1. Research Mode

4 Research Result and Discussion

4.1 Descriptive Statistics

Table 4.1. Descriptive Statistics Result

	N	Minimum	Maximum	Mean	Std. Deviation
Audit Delay	85	0	1	,02	,152
Probability of Bankruptcy of SOE	85	0	1	,56	,499
Audit Effort	85	,0015	,6835	,217146	,2051021
Valid N (listwise)	85				

It is known that the Audit Delay (Y) in this research has a minimum of 0 for company data that experiences audit delay no later than 120 days and a maximum of 1 for company data that experiences an audit delay of more than 120 days. The sample mean value is 0.02 and the standard deviation is 0.152, which means that the deviation of each individual value in the data used in the study with the mean is 0.152.

The probability of bankruptcy of SOE (X1) which is a dummy variable has a minimum value or the lowest value of the sample is 0 (zero) for companies that are safe from the possibility of bankruptcy, the maximum value or the highest value of the sample is 1 (one) for companies with the possibility of bankruptcy, the sample mean is 0.56, and the standard deviation is 0.499, which means the deviation of each individual in the research data with the mean is 0.499.

Audit Effort (X2) has a minimum value or the lowest value of the sample is 0.0015, which means that the smallest audit scope of the entire sample is 0.0015 or 0.15% of PT Bank Tabungan Negara Tbk's assets are receivables and inventories, the maximum value or the highest sample value is 0.6835 means that the largest audit scope of the entire sample is 0.6835 or 68.35% of the assets of PT Bank Negara Indonesia Tbk are receivables and inventories, the average value of the scope of the entire sample is 0.217146 or 21.71% of the company's assets are receivables and inventories and the standard deviation value is 0.2051021, which means that the deviation of each individual audit effort value with the mean is 0.2051021.

4.2 Goodness of Fit Test

Table 4.2. Hosmer and Lemeshow Test Result

Step	Chi-square	Df	Sig.
1	7,507	7	,378

From the Hosmer and Lemeshow test results obtained a significant value is 0.378 and chi-square is 7.507. The significance value of this test produces a number that less than 0.05 and the calculated Chi-Square value is less than the chi-square table value of 14.067, so it can be concluded that the model is able to predict the observation value (Hypothesis 0 is accepted) and is feasible in explaining the research variables.

4.3 Overall Fit Model

Table 4.3. Overall Fit Model Test Result

-2 Log Likelihood	*Iteration History*
Blok 0	18,951
Blok 1	18,827
	0,124

The value of -2 Log Likelihood (LL) at the beginning (block number = 0) is 18.951 and the number -2 Log Likelihood in block number 1 is 18,827 which means that there is a decrease in -2 Log Likelihood (LL) of 0.124, indicating a good regression model and the fit of the hypothesized model with the data.

4.4 Coefficient of Determination (*Nagelkerke R Square*)

Table 4.4. Coefficient of Determination

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	18,827[a]	,001	,007

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than ,001.

The value obtained and used as a result of this test is Nagelkerke's R Square of 0.007 where the independent variable is only able to explain 0.7% of the dependent variable and the remaining 99.3% is explained by variables outside the research model.

4.5 Hypothesis Test Result

Table 4.5. Logistics Coefficient Test Results

		B	Df	Sig.
Step 1[a]	X1	-,240	1	,867
	X2	-1,166	1	,775
	Constant	-3,370	1	,006

a. Variable(s) entered on step 1: X1, X2.

The regression coefficient of SOE Bankruptcy Probability (X1) has a Significant p-value (probability value) of the bankruptcy probability variable of 0.867 where the significance level of 0.05 is less than that value, meaning that this variable does not significantly affect the dependent variable (H1 is not supported) according to with research by Nurahmayani [2] and Widyawati & Anggraita [16].

According to the research of Nurahmayani, factor that makes the first hypothesis is not supported is because of one of the ratios included in the measurement with the Altman z-score model that can predict bankruptcy, the solvency ratio has no effect. In maintaining the good name of the company, the company must report the amount of debt that is relevant and in

accordance with the facts so that the size of the debt of a company does not determine the sooner or later the completion of the audit and the announcement of the annual financial statements to the public [2].

Table 4.6. Frequency Statistics Result

Audit Delay

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No later than 120 Days	83	97,6	97,6	97,6
	More Than 120 Days	2	2,4	2,4	100,0
	Total	85	100,0	100,0	

The unsupported first hypothesis can also be caused by only a few data on state-owned companies listed on the Indonesia Stock Exchange from 2016 to 2020 whose audit delay exceeds the reporting time limit based on the results of the frequency statistics on these variables. Almost all state-owned companies can report their financial statements on time even though the probability of bankruptcy is high.

Audit Effort regression coefficient (X3) has a Significant p-value (probability value) of the audit effort variable of 0.775 where the significance level of 0.05 is smaller than that value, it can be interpreted that this variable does not significantly affect the dependent variable (H2 is not supported). according to the research of Vuko & cular [13].

This shows that the auditor actually conducts an assessment of the risks that will be faced (the length of time required) in conducting the audit process, looking at the level of receivables and inventory so as to reduce the length of audit delay [3]. In conducting an audit of a company with a large audit scope, seen from the level of receivables and inventories of a company, the auditor needs additional time to complete audit procedures, thereby increasing the audit delay time and threatening the company to be late in submitting its financial statements. Therefore, the auditor will try to prevent it by giving an effort in another form, for example increasing the number of audit team staff. Efforts given by the auditor in the form of increasing the number of staff to complete the audit process in a company with a large audit scope can solve the problem of late audit delay so that no matter how wide the scope is, it will not affect audit delay.

The second hypothesis is not supported, it can also be seen from the minimum and maximum values which have a very wide range, causing poor results. This is because the audit scope of several banking companies cannot only be represented using the formula used in this study, because all of these companies do not have inventory and their assets are in monetary form.

From the results of statistical analysis and justifications from this study, it can be an answer to anticipate or resolve the phenomenon of the problem of delays in reporting financial statements which according to Bapepam rules should be submitted to the Indonesia Stock Exchange at the end of the third month or in accordance with applicable regulations due to the ongoing Covid-19 pandemic that hit the world. Statistically, audit effort does not affect the length of audit delay, where the auditor can assess the risk of increasing the length of audit time (audit delay) by looking at the breadth of the audit scope using the level of receivables and inventories of a company.

The breadth of the audit scope can be a signal for the auditor to provide audit efforts in other forms, such as increasing the number of audit teams so that the auditors can adjust their

behavior by anticipating the risk of the length of audit delay (the time required for the auditor to carry out the audit process) delays in reporting independent reports which ultimately lead to delays in the publication of financial statements can be avoided. If the company's financial statements can be submitted in a timely manner, it can minimize the problem of information asymmetry that will occur according to agency theory.

5 Implication and Suggestion for Future Research

5.1 Implication

The purpose of this research is to see the effect of Bankruptcy Probability of State-owned enterprise and Audit Effort on Audit Delay in State-owned enterprise that listed on the Indonesia Stock Exchange for the 2015-2019 period. Logistic regression analysis is a hypothetical tool used. The results obtained are the probability of SOE bankruptcy and audit effort does not affect audit delay.

5.2 Suggestions

Add and use other factors, such as KAP size, audit type, auditor type, auditor turnover, audit report type, business risk, company size, convergence, profitability, accounting complexity, audit opinion, audit committee size, auditor industry specialization, solvency IFRS convergence, subsidiaries, audit fees, and the complexity of company operations, as well as the Covid-19 pandemic.

6 Reference

[1] N. Verawati and M. Wirakusuma, "Pengaruh Pergantian Auditor, Reputasi Kap, Opini Audit, Dan Komite Audit Dalam Audit Delay," *E-Jurnal Akunt.*, 2016.

[2] I. A. Nurahmayani, P. Purnamasari, and M. L. Oktaroza, "Pengaruh Penerapan IFRS, Jenis Industri dan Probabilitas Kebangkrutan terhadap Audit Delay (Pada Perusahaan LQ 45 yang Terdaftar di Bursa Efek Indonesia Periode 2013-2015)," *ACCRUALS*, 2018, doi: 10.35310/accruals.v2i1.7.

[3] S. Wijayanti and E. Effriyanti, "PENGARUH PENERAPAN IFRS, AUDIT EFFORT, DAN KOMPLEKSITAS OPERASI PERUSAHAAN TERHADAP AUDIT DELAY," *AKUNTABILITAS*, 2019, doi: 10.29259/ja.v13i1.9479.

[4] M. C. Jensen and W. H. Meckling, "Theory of The Firm Manajerial Behaviour, Ageny Cost and Ownership. structure journal of Financial Economics 3, October 1976, Vol.3, No. 4, pp. 305-360," *J. financ. econ.*, 1976.

[5] A. Achmad, "PENGARUH UKURAN PERUSAHAAN, UMUR PERUSAHAAN, STRUKTUR KEPEMILIKAN DAN PROFITABILITAS TERHADAP PENGUNGKAPAN WAJIB LAPORAN TAHUNAN (Studi Empiris pada Perusahaan Pertambangan Yang Terdaftar di Bursa Efek Indonesia Periode 2013-2015)." Universitas Widyatama, 2017.

[6] J. C. Dyer and A. J. McHugh, "The Timeliness of the Australian Annual Report," *J. Account. Res.*, 1975, doi: 10.2307/2490361.

[7] R. H. Ashton, J. J. Willingham, and R. K. Elliott, "An Empirical Analysis of Audit Delay," *J. Account. Res.*, 1987, doi: 10.2307/2491018.

[8] V. Halim, "Faktor-Faktor Yang Mempengaruhi Audit Delay," *J. Bisnis dan Akunt.*, vol. 2, no. 1, pp. 63–75, 2000.

[9] I. Altman, "Altman Z-Score," *FCS Commer. Financ. Gr.*, 1968.

[10] Rudianto, *Akuntansi Manajemen Informasi untuk Pengmbilan Keputusan Strategis*. 2013.

[11] L. Cao, W. Li, and L. Zhang, "Audit mode change, corporate governance and audit effort," *China*

J. Account. Res., 2015, doi: 10.1016/j.cjar.2015.05.002.
[12] C. Caramanis and C. Lennox, "Audit effort and earnings management," *J. Account. Econ.*, 2008, doi: 10.1016/j.jacceco.2007.05.002.
[13] T. Vuko and M. Čular, "Finding determinants of audit delay by pooled OLS regression analysis," *Croat. Oper. Res. Rev.*, 2014, doi: 10.17535/crorr.2014.0030.
[14] R. W. Andriyanto, "Faktor-Faktor yang Mempengaruhi Audit Delay pada Perusahaan Publik di Indonesia," 2010.
[15] I. Ghozali, "Aplikasi Analisis Multivariate dengan Program IBM SPSS 23," *(Edisi 8). Semarang: Badan Penerbit Universitas Diponegoro*, 2016. .
[16] A. Widyawati and V. Anggraita, "PENGARUH KONVERGENSI, KOMPLEKSITAS AKUNTANSI, DAN PROBABILITAS KEBANGKRUTAN PERUSAHAAN TERHADAP TIMELINESS DAN MANAJEMEN LABA," *J. Akunt. dan Audit. Indones.*, 2013.