Multi-Dimensional Audit Quality, Regulation, and Earnings Management To Meet Earnings Benchmarks: Evidence From Indonesia

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Abstract

This study examines the effect of audit quality on earnings management done by public firms to meet earnings benchmarks by developing a new, multidimensional measure of audit quality, called Audit Quality Metric Score (AQMS). Earnings management propensity to meet earnings targets are measured by loss avoidance/small profit level, and small profit increase/earnings changes. The study also examines the possibility of moderating role of audit regulation through the Minister of Finance (KMK) Decree No 423 and No. 359, and Capital Market Authority (Bapepam-LK) Decree No. VIII.A.2 issued in the late 2002 and 2003, that may affect the relationships between audit quality and the propensity to meet earnings targets. The research sample consists of 1152 firm-year observations of listed public company in Indonesia Stock Exchange (IDX). Period of observation covers 9 years, ranging from 1999 to 2007. The study found some evidence of the negative effect of audit quality with multidimensional approach (AQMS) on the earnings management propensity to meet earnings targets along the period of observation, regardless of the presence or absence of the moderating effect of regulation. The study also found evidence of the moderating effect of regulation that can weaken the positive effect of audit quality on the propensity to meet earnings targets. The findings of this study are robust, having control of accrual based and real transactions based earnings management that can be used to achieve earnings benchmarks, and after considering the results of sensitivity tests.

Keywords: audit quality, accrual-based earnings management, real transaction, earnings targets, Big 4, industry specialization, audit tenure, regulation, client importance, going-concern opinion

I. INTRODUCTION

Previous literature found an increasing trend over time that managers manage earnings to meet earnings benchmarks, and try to avoid negative earnings surprise (e.g., DeGeorge et al., 1999). Prior studies also found changes in the behavior patterns of earnings management from accrual based to the real based transactions post Sarbanes-Oxley Acts 2002 (Cohen & Zarowin, 2010), and found that accrual-based and real-based earnings management are used as a complementary or substitute to achieve the earnings target (Zang, 2007).

The role of the auditor as a gatekeeper to the capital markets to provide assurance on the quality of financial reporting of public companies has been widely criticized over the last decade, because it failed to protect the interests of investors, especially since the corporate scandals of Enron, WorldCom, and the like at the end of 2001 and 2002 (Levitt, 1998).

Audit quality has dimensions that reflect the multidimensional nature of the competence and independence, because there is no one-size-specific characteristics that can represent the quality of the audit as a whole (Bamber & Bamber, 2009). Audit quality studies have been using more frequently a single measurement, or a combination of several measurements, such as brand name or reputation of audit firm (Big 4/5/6), industry specialization, audit tenure (firm or partner), audit or non-audit fee. Study in Indonesia (either directly or indirectly) generally use audit firm size such as Big 4 or non Big 4 (Challen & Siregar, 2011; Siregar & Bachtiar, 2005), or audit firm industry specialization (Ratmono, 2010; Herusetya, 2009).

This study develops a multi-dimensional measurement of audit quality that is believed to be far more valid, using multiple (composite) measures in the form of scores from several measures of audit quality. This multidimensional measurement is called Audit Quality Metric Score (AQMS), includes the dimensions of competence and independence. As far as the authors' knowledge, this measurement is the first approach used in audit quality research. This new approach is expected to measure the quality of a public company earnings using earnings management trend to meet earnings targets.

The Indonesian government issued regulations concerning the supervision of the quality of audit services through the Decree of Minister of Finance No. 423/KMK.06/2002 in 2002, then revised by KMK No. 359/KMK.06/2003 in 2003. Previous studies have examined directly the impact of audit services regulation (hereinafter referred to regulation) toward audit quality (Fitriany, 2011; Adityasih, 2010 in Fitriany, 2011; Wibowo, 2009). Fitriany (2011) have not found evidence of the difference between pre

and post regulation in audits quality, whether measured by industry specialization, audit tenure, audit rotation, as well as continuing professional education (CPE) to the neutrality of the financial statements (using absolute discretionary accruals). Wibowo (2009) have found positive effects of audit rotation on the earnings surprise benchmark as a proxy of audit quality. While Adityasih (2010) found that CPE has positive effect on audit quality. Unlike previous studies, our study want to test the moderating effect of regulation on the relationship between audit quality using multidimensional approach and the propensity to meet earnings targets, that are still yet not consistent in previous studies.

The remainder of the paper is organized as follows. Section 2 discusses some literature review and hypothesis development, section 3 discusses research methodology, section 4 discusses the findings, and section 5 is the conclusion, research implications, and suggestion for further study.

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 The Effect of Audit Quality on Earnings Management to Meet Earnings Targets - Before Considering the Effect of Regulation

Past researchers identify the underlying motives of managers in achieving the desired objectives of financial reporting (Healy & Wahlen, 1999). One of the objectives of financial reporting is the achievement of earnings benchmark, which is the strong capital market motives for managers (Graham et al., 2005). The tendency of managers to manage earnings to meet earnings targets has been increased from time to time, and it was found that the managers seek to avoid negative earnings surprise using accrual earnings management and real transactions (Cohen et al., 2008). The managers use one or several earnings benchmark measures simultaneously in achieving their financial reporting purposes (Graham et al., 2005). The most common measures of earnings targets are: (i) "to avoid reporting losses" (loss avoidance/small profit level), and (ii) "to meet certain earnings change" (small increase of profit/earnings changes) (Roychowdhury, 2006).

Prior studies have found a negative effect of audit quality on earnings management in the form of meeting the earnings targets. Francis & Yu (2009) found the effect of audit quality (measured by the office size of the Big 4) on the smaller tendency of the public companies to meet earnings targets. Gul et al. (2009) found evidence that audit tenure negatively related to the tendency of the clients to perform earnings management in order to meet earnings targets. This negative effect implies that auditors have a role in reducing "benchmark beating" behavior from the public companies (Habib & Hansen, 2009). This study uses a multidimensional approach of audit quality and

predict a negative influence of the audit quality on the tendency to meet earnings targets by using one or more of earnings target measures.

With the above arguments our hypothesis to be tested is:

H1a: Audit quality with multidimensional approach has negative effect on the propensity to meet earnings targets.

2.2 The Effect of Audit Quality on Earnings Management to Meet Earnings Targets - After Considering the Effect of Regulation

Previous studies documented the atmosphere changes in regulation and audit on post-corporate failure in the worldwide and Big 5 Arthur Andersen Firm, that gave positive impact on audit quality, including Indonesia (Fargler & Jiang, 2008; Chen et al., 2010). Chen et al. (2010) for example, found that the tendency of auditors being compromise is decreasing compared to the period 1995-2000, in line with the improved regulation environment in China in the period 2001-2004.

To enhance the competence and independence of audit firms and auditors in Indonesia, the government through the Minister of Finance and the Authority of Capital Market (Bapepam-LK) issued regulations in audit services at the end of 2002 and 2003. The implementation of this regulation could be expected to affect audit quality directly (e.g., Adityasih, 2010). The role of regulation can be seen from the moderating effect of regulation on the relationship between audit quality and earnings management. Thus, regulation has a role of moderation that can strengthen (weaken) the negative (positive) effect of audit quality on the propensity of public companies to conduct earnings management in meeting their earnings targets.

With the above arguments, our hypothesis to be tested is:

H1b: Regulation has a moderating role to strengthen (weaken) the negative (positive) effect of audit quality with multidimensional approach on the propensity to meet earnings targets.

III. METHODS

3.1 Population, Sample, and Data Sources

The population in this study are all non-financial companies listed on the Indonesia Stock Exchange in the year 1999 to 2007 (9 years). Sample selection is done by purposive sampling method. Sources of financial data taken from secondary data from the company's annual financial statements in Indonesia Capital Market Directory (ICMD),

and the issuer's annual financial report, both published by the Indonesia Stock Exchange (BEI) or on the website. While audit opinions data taken from the Independent Auditor's Report. Based on the sample criteria, we obtained 128 final samples of company per year for 9 year period (1999-2007), or 1152 firm-years observation balanced panel.

3.2 Empirical Research Model

3.2.1 Model 1a and 1b: The Effect of Audit Quality on Earnings Management to Meet Earnings Targets - Before Considering the Effect of Regulation

The Empirical model that reflects the hypothesis testing H1a using Model 1a and 1b respectively are as follows:

$$MBE_{it} = \gamma_0 + \gamma_1 AQMS_{it} + \gamma_2 ABSDAC_{it} + \gamma_3 EMRT_{it} + \gamma_4 SALESGRW_{it} + \gamma_5 MTB_{it} + \gamma_6 LEV_{it} + \gamma_7 LOSS_{it} + \gamma_8 SIZE_{it} + \epsilon_{it} \quad \text{(Model 1a)}$$

$$DMBE_{it} = \zeta_0 + \zeta_1 AQMS_{it} + \zeta_2 ABSDAC_{it} + \zeta_3 EMRT_{it} + \zeta_4 SALESGRW_{it} + \zeta_5 MTB_{it} + \zeta_6 LEV_{it} + \zeta_7 LOSS_{it} + \zeta_8 SIZE_{it} + \epsilon_{it} \quad \text{(Model 1b)}$$

In Model 1a and 1b, audit quality is measured using AQMS (coefficient γ1 and ζ1), and is predicted to have a negative and significant effect on propensity to meet earnings targets.

3.2.2 Model 1c and 1d: The Effect of Audit Quality on Earnings Management to Meet Earnings Targets - After Considering the Effect of Regulation

Empirical model that reflects the hypothesis testing H1b using Model 1c and 1d respectively, as follows:

$$MBE_{it} = \theta_0 + \theta_1 AQMS_{it} + \theta_2 REG_{it} + \theta_3 REG_{it}*AQMS_{it} + \theta_4 ABSDAC_{it} + \theta_5 EMRT_{it} + \theta_6 SALESGRW_{it} + \theta_7 MTB_{it} + \theta_8 LEV_{it} + \theta_9 LOSS_{it} + \theta_{10} SIZE_{it} + \epsilon_{it} \quad \text{(Model 1c)}$$

$$DMBE_{it} = \lambda_0 + \lambda_1 AQMS_{it} + \lambda_2 REG_{it} + \lambda_3 REG_{it}*AQMS_{it} + \lambda_4 ABSDAC_{it} + \lambda_5 EMRT_{it} + \lambda_6 SALESGRW_{it} + \lambda_7 MTB_{it} + \lambda_8 LEV_{it} + \lambda_9 LOSS_{it} + \lambda_{10} SIZE_{it} + \epsilon_{it} \quad \text{(Model 1d)}$$

The main concern of the estimated coefficient in Models 1c and 1d are θ3 and λ3 (REG*AQMS), each are predicted to have negative sign, indicating a moderating role of

regulation that will strengthen (weaken) the negative (positive) effect of audit quality on the earnings management to meet earnings targets (MBE and/or DMBE). REG variable is predicted negative significant, for allegedly regulations negatively affect the propensity to meet earnings targets (Zhou, 2008).

3.3 Operational Variables

3.3.1 Audit Quality (AQMS)

Audit Quality Metric Score (AQMS) is the sum of 5 audit quality proxy score, include the dimension of "competence" (audit firm size, industry specialization, and tenure), and the dimension of "independence" (client importance, and going-concern (GC) opinion and reporting accuracy of the GC opinion). The process of obtaining score of AQMS are as follows: (i) Provide a score of 1 of each of the proxy, if it meets the criteria of a high quality audit, and zero for the other, (ii) the sum of scores from the five proxy for each firm-years observation are weighted by the value of 5.

3.3.2 Accrual-Based Earnings Management (ABSDAC)

This study use an accrual models developed by Kothari et al. (2005) to estimate the amount of discretionary accruals is as follows:

$$TACC_{it}/A_{it-1} = \alpha_0 + \alpha_i [1/ A_{it-1}] + \beta_{1i} [\Delta REV_{it} - \Delta AR_{it}/ A_{it-1}] + \beta_{2i} [PPE_{it}/A_{it-1}] + \delta_1 ROA_{i, t-1} + \varepsilon_{it} \quad \text{.....(1)}$$

The value of discretionary accruals (DA), or an abnormal discretionary residual error (ε) of the results of the regression equation (1), is the difference between the total accrual to the fitted value of total accruals, defined as $DA_{it} = (TACC_{it}) - NDA_{it}$. The absolute value of the residual error (ABSDAC) is used in this study as a proxy of accrual-based earnings management by considering the possibility of positive and negative accrual adjustments throughout the period of observation that can reduce the quality of financial reporting.

3.3.4 Real Earnings Management (EMRT)

Following Roychowdhury (2006), and Cohen et al. (2008), operational variables of EMRT are done by: (i) Determine the normal level of the variable operating cash flow (CFO), discretionary expenses, and production costs using a model of Roychowdhury (2006), (ii) find abnormal levels of the actual value of each variable, i.e., the fitted value obtained from OLS equation.

a. Abnormal Operating cash flow (ABCFO)

To find the operating cash flow (CFO) at a normal level, we use a linear function of sales and change in sales using regression equation (2) as follows:

$$CFO_{it} / A_{it-1} = k_{1t} [1/A_{it-1}] + k_2 [Sales_{it}/A_{it-1}] + k_3 [\Delta Sales_{it}/A_{it-1}] + \varepsilon_{it} \quad \text{.....(2)}$$

Based on equation (2), we obtained abnormal operating cash flow (ABCFO), i.e., the difference between the actual operating cash flows less the fitted value from normal operating cash flows, calculated using the estimated coefficients from equation (2), or a standard error (ε) from the regression equation (2).

b. Abnormal Production Costs (ABPROD)

Production costs is the sum of the cost of sales and changes in inventories during the current year (Roychowdhury, 2006; Cohen et al., 2008), so the coefficient estimates of the cost of normal production levels can be found using equation (3) as follows:

$$Prod_{it}/A_{it-1} = k_{1t} [1/A_{it-1}] + [k_2 Sales_{it}/A_{it-1}] + k_3 [\Delta Sales_{it}/A_{it-1}] + k_4 [\Delta Sales_{i,t-1}/A_{it-1}] + \varepsilon_{it} \quad \text{.....(3)}$$

According to equation (3), we obtained abnormal levels of production cost (ABPROD), i.e., the difference between the actual production costs less fitted value of the estimated coefficients obtained from equation (3), as well as we found the value ABCFO above.

c. Abnormal Discretionary Expense (ABDISEXP)

To find the normal level of discretionary expense we used the following equation:

$$DisExp_{it}/A_{it-1} = k_{1t} [1/A_{it-1}] + k_2 [Sales_{i,t-1}/A_{it-1}] + \varepsilon_{it} \quad \text{.....(4)}$$

The amount of abnormal discretionary expense (ABDISEXP) can be calculated from the actual value of the operating expense, reduced by fitted value of the estimated coefficient of the normal level of discretionary expense from equation (4).

3.3.5 Earnings Management to Meet Earnings Targets (MBE and DMBE)

Previous studies found that public companies conduct earnings management to meet one or more types of earnings targets (Degeorge et al., 1999). Type earnings targets to be tested are: (i) avoiding reporting losses (MBE), and (ii) to avoid decrease in earnings change (DMBE).

Following Yulianti (2004), "the tendency to avoid reporting losses (avoiding losses/small positive earnings)" in this study are using the criteria of net income before extraordinary items scaled by total assets, if it is in the interval (0; 0.02). The tendency to avoid reporting losses measured by a dummy variable (1; 0) MBE (the dependent variable) using a logistic regression model. MBE was given 1, if net income before extraordinary items scaled by total assets is in the interval (0; 0.02); and 0 if other.

While the "tendency to avoid decrease in income change" is measured by a dummy variable (1; 0) DMBE (the dependent variable) using a logistic regression model, following Yulianti (2004) and Roychowdhury (2006). Given 1, if the "rate of income change" is in the interval (0; 0.01); and 0, if other. Companies that are in this interval allegedly doing real transactions and accruals earnings management to achieve the desired earnings target.

IV. RESULTS AND DISCUSSION

4.1 Hypothesis Testing Results of Model 1a-1d: The Effect of Audit Quality on Earnings Management to Meet Earnings Target

In the following sections, we will test the effect of audit quality using multidimensional approach (AQMS) on the propensity of public companies to meet earnings targets. To produce robust estimates of variance and covariance that are free from heteroscedasticity problems, the further estimated coefficient of Model 1a-1d allegedly using pooled linear logistic regression with the Huber/White/Sandwich procedure (Rogers, 1993) provided in the Stata program.

4.1.1 Hypothesis Testing Results of Model 1a and 1b - Before Considering the Effect of Regulation

4.1.1.1 Hypothesis Testing Results of Model 1a

The test results on Model 1a has a pseudo R-squared range from 20.14% (the smallest) to 26.10% (the largest) with probability (Chi^2) for the entire model specification, respectively significant at the 1% level (p = 0.000).

The test results on the Model 1a shows most of the evidence that AQMS has negative coefficient at a significance level of 10% in column 2 (p = 0.092), column 3 (p =

0.094), and column 4 (p = 0.109, one-tailed test with a significance level 10%), consistent with prior predictions. This indicates that audit quality with a multidimensional approach (AQMS) can reduce earnings management behavior of the public companies to meet earnings targets by using reporting loss avoidance (MBE), despite controlling various forms of accrual earnings management, and real transactions at the individual and aggregate level in model, which in the previous studies was not controlled. These findings are consistent with the findings of previous studies, for example, Gul et al. (2009), and Francis & Yu (2009).

4.1.1.2 Hypothesis Testing Results of Model 1b

The test results on Model 1b has a relatively low pseudo R-squared, ranging from 7.32% (the smallest) to 7.38% (the largest) showed relatively low explanatory power of the model specifications used.

Our tests on Model 1b found no evidence of the negative effects of audit quality with multidimensional approach (AQMS) on DMBE, as one of the earnings benchmark measure. An alternative explanation of this result is the possibility of earnings change as a measure of earnings targets are less/not used by the public companies in Indonesia, instead of using earnings target to avoid reporting losses, as found also by Yulianti (2004). Based on the test results in Model 1a and 1b, our hypothesis H1a is accepted.

4.1.2 Hypothesis Testing Results of Model 1c and 1d - After Considering the Effect of Regulation

4.1.2.1 Hypothesis Testing Results of Model 1c

By using 4 specification tests in Model 1c, we obtained pseudo R-squared ranges from 23.24% (the lowest) to 28.59% (the highest) with probability (Chi^2) for the entire model specifications at 1% significant level (p = 0.000).

The main variables in Model 1c testing is REG*AQMS. The test results found that the coefficient θ3 (REG*AQMS) is highly significant negative for all specification tests, i.e. significant at 1% level consistent with the early predictions. The results of these tests found a moderating role of regulation that weakens the positive effect of audit quality on the tendency to avoid reporting losses (MBE) as a measure of profit targets.

This finding may indicate that the quality of the audit firms/auditors in Indonesia are more likely to compromise with the client's tendency to achieve its earnings targets by avoiding reporting losses (MBE), despite accrual and real transactions earnings

management have been controlled in the model. Prior study in ASEAN countries done by Marchesi (2000) found that the quality of audits in several countries, including Indonesia had been severely compromise due to the lack of rules on auditor independence. But our study found that the regulation of audit services have moderating role to weaken the positive effect of audit quality on the propensity to meet earnings targets in order to avoid reporting losses. The results of this study provide interpretation that audit services regulation set forth by the Minister of Finance and Bapepam-LK in 2002 and 2003 is shown to have an effect to monitor the quality of audit firms and/or auditors, and prevent a decline in audit quality. These test results are robust after controlling for accrual and real transactions earnings management in the 4 specification tests.

4.1.2.2 Hypothesis Testing Results of Model 1d

The test results on Models 1d for all the specification tests have relatively low pseudo R-squared, which ranges from 9.63% (the smallest) to 9.77% with a probability level (Chi^2) are all significant at 1% ($p = 0.000$).

The test results showed that the coefficient λ3 (REG*AQMS) were not significant for all test specifications with a two-tailed test, but significantly negative for the entire specification tests with one-tailed test at the 10% significance level (critical value z-test = 1.28). These findings imply that the regulation has moderating role that can weaken the positive effect of audit quality on the earnings management to meet certain earnings changes (DMBE). This finding is not different from the previous test results on the Model 1c, i.e. there is a possibility of audit firms and/or auditors are more likely to be compromise with the public companies in reporting certain earnings changes as their earnings targets, but regulation has a role to monitor the quality of audit services in order to prevent a decline in the quality of audit. Based on the test results in Model 1c and 1d, then the hypothesis H1b can be accepted.

V. CONCLUSIONS, IMPLICATIONS, AND RESEARCH RECOMMENDATIONS

The study found evidence of the negative effect of audit quality using multidimensional approach (AQMS) on the behavior of earnings management to meet earnings targets, regardless of the presence or the absence of the moderating effect of regulation in empirical model. The findings of this study indicate that higher audit quality of audit firms can reduce public company's earnings management propensity to meet earnings targets, consistent with the previous studies using single or multiple combinations of audit quality proxies (Francis & Yu, 2009; Gul et al., 2009). The findings of this study are robust, having control of accrual and real transactions earnings

management that can be used to achieve earnings target (Roychowdhury, 2006; Cohen & Zarowin, 2010; Graham et al., 2005), and after considering the results of sensitivity tests.

The study also found evidence of the moderating effect of regulation that can weaken the positive effect of audit quality on the propensity to meet earnings targets. The findings imply that the regulation has monitoring role on the quality of audit services rendered by audit firms and/or auditors, and could prevent lower audit quality.

Some suggestions for further researches are as follows:

1. This study recommends some other proxies for audit quality with a multidimensional approach, such as the number of hours worked auditor (Caramanis & Lennox, 2008), as well as other proxies such as the frequency level restatement of the audited financial statements, or audit report lag (Tanyi et al., 2010).

2. This study suggests that further research need to control the level of effectiveness of corporate governance at each level of the sampled entity, given that the quality of earnings/earnings management behaviors, and audit quality are influenced by the corporate governance at the entity level (Chen et al., 2010).

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