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## ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

# Internal audit functions and audit outcomes: Evidence from Indonesia

Achmad Dzulfikar Dzikrullah<sup>1</sup>, Iman Harymawan<sup>1\*</sup> and Melinda Cahyaning Ratri<sup>1</sup>

**Abstract:** The internal audit function is important to minimize the occurrence of fraudulent financial statements and provide assurance and independent consultation for decision-making. The purpose of this study is to analyze the relationship of the quality of internal audit team (internal audit function) on audit fees, audit quality, audit choice, and audit opinion. This study uses 722 observations on companies listed on the Indonesia Stock Exchange for two periods from 2016 to 2017 and uses Ordinary Least Square Regression analysis techniques to examine the hypotheses. This study found that one of the internal auditors' functions, which is size of the internal audit team, as a corporate oversight mechanism has a positive and significant relationship to the magnitude of external auditor fees, audit quality, and the tendency of companies to choose auditors with big names (Big4). In addition, this study found that internal audit also has a negative and significant influence on the tendency of companies to accept going concern audit opinions.

### ABOUT THE AUTHORS

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### PUBLIC INTEREST STATEMENT

This study analyzes the influence of internal audit on audit fees, audit quality, audit choice, and audit opinion. This study uses 722 observations on companies listed on the Indonesia Stock Exchange for two periods from 2016 to 2017 and uses Ordinary Least Square Regression. This study found that internal auditors as a corporate oversight mechanism have a positive and significant relationship to the magnitude of external auditor costs, audit quality, and the tendency of companies to choose auditors with big names (Big4). This study also found that internal audit has a negative and significant influence on the tendency of companies to accept going concern audit opinions. The results of this study indicate that companies that have an adequate internal audit function tend to pay greater external auditor fees and choose auditors with big names (Big4) to produce high audit quality. The existence of adequate internal auditors also influences the probability of the firms on receiving going concern audit opinions.

This research provides support on the benefit of having a good quality of internal auditors for the company. The results of this study indicate that companies that have an adequate internal audit function tend to cost higher external auditor fees, and hiring auditors with big names (Big4) to produce high audit quality. In addition, the existence of adequate internal auditors also reducing the probability of the firms on receiving the going concern audit opinions.

**Subjects: Accounting; Corporate Governance; Business Ethics**

**Keywords: Internal audit; audit fee; audit quality; audit choice; audit opinion**

**JEL: M41; M42**

### 1. Introduction

Audit is the cornerstone of corporate governance (Cadbury, 1992). Companies that have good governance tend to produce quality audit reports (Lin & Liu, 2009), this is because companies with good governance demand for high audit quality to increase the value of the company itself (Fan & Wong, 2005). Good corporate governance eases auditors in understanding the company's internal system so that the audit services provided will be maximum and efficient. Prawitt et al. (2009) in his research stated that one of the 4 tools that support the effective running of corporate governance is the existence of internal audits other than the existence of executive management, board of directors, and external auditors. Internal auditors have an important role as a form of significant internal supervision of the effectiveness of corporate governance (Boynton et al., 2006; Felix et al., 2001; Moeller, 2009; Stewart & Kent, 2006; Institute of Internal Auditors (IIA), 2005). Boynton et al. (2006) defines internal audit as objective assurance activities and independent consultation. The internal audit division is responsible for overseeing the company's operations designed to provide added value and improve company operations by evaluating the effectiveness of the risk management process, control and corporate governance.

The rise of financial scandals involving company management makes internal auditors play an important role in providing assurance and minimizing asymmetric information to shareholders and related parties in decision-making (Al-Shetwi et al., 2011). For example, Time magazine in 2002 named Chyntia Cooper, an internal auditor, as a "Person of the Year" for reporting on a fraudulent scandal by the WorldCom company (Lacayo & Ripley, 2002). In this case, internal auditors can play a role in mitigating the practice of accounting manipulation carried out by managers (Prawitt et al., 2009). In addition, Stewart and Kent (2006) in his research added that companies that are committed to improving corporate governance will employ internal audits at a greater level.

In addition to the presence of internal audits, various governance mechanisms are also applied to oversee the relationship between company managers and shareholders. One of them is the presence of external auditors, where external auditors provide a significant supervisory role in testing the credibility of financial statements provided by management on behalf of shareholders (Lin & Liu, 2009). Furthermore, Lin and Liu (2009) added that external auditors also have a role to increase transparency, external supervision, and minimize the existence of asymmetric information. Therefore, Singh and Newby (2010) state that the relationship between internal auditors and external auditors greatly influences the strength of corporate governance.

Companies with strong governance want high audit quality and are willing to pay high audit fees to create good corporate value (AlQadasi & Abidin, 2018). Some previous studies also show that companies that have effective governance as a result of the existence of adequate internal auditor functions will hire big-name auditors or Big4 (Cassell et al., 2012) and tend to pay high audit fees (DeFond & Zhang, 2014). The aim is to increase the value of the company so that it has an impact on the guarantee of security for investors to invest in the company (AlQadasi & Abidin, 2018; Singh & Newby, 2010; Stewart & Kent, 2006). However, there are studies that state that good corporate

governance can reduce the auditor's work intensity, thereby reducing audit fees (Hay et al., 2008). In this scenario, supervision by the company's internal mechanisms substitutes the work of auditors thereby reducing demand for quality audits. On the other hand, research conducted by Srinidhi and Firth (2014) provides consistent evidence that good corporate governance is positively related to quality audit requests, raising audit fees. Companies that invest in the functions of internal auditors tend to invest also in external audit functions. This is due to the complementary concept that investment into a mechanism will have an impact on additional investment into other mechanisms (Abbott & Parker, 2000; Beasley & Salterio, 2001).

This study is motivated by the rise of financial scandals occur in companies that make the role of internal auditors important in carrying out internal controls and minimizing information asymmetry for stakeholders. The purpose of this study is to analyze the relationship of the characteristics of the internal auditor team (internal audit functions) on audit outcomes: the level of audit fees, the likelihood of choosing big four auditors, audit quality, and audit opinion. This study predicts that companies with a reliable internal audit function tend to pay high audit fees and choose auditors with big names to produce high audit quality. This study uses the measurement of the number of internal audit employees as the main measurement tool in determining the effectiveness of the internal audit function (Stewart & Kent, 2006). In addition, this study also uses supporting measurements such as basic accounting skills and certification from internal auditor personnel (Prawitt et al., 2009). The analysis in this study used 722 observations from all non-finance companies listed on the Indonesia Stock Exchange for two periods from 2016 to 2017. This study used a multiple linear regression analysis model with ordinary least square (OLS) method to examine the effect of the internal audit function on the amount of audit fees, the tendency to choose auditors with big names (Big4) and their relationship to audit quality.

The findings of this study indicate that companies with large-scale internal audits tend to pay higher audit fees and hire auditors with big names or Big4, compared to companies that have smaller-scale internal audits. These results are in accordance with the findings of previous research (Singh & Newby, 2010; Stewart & Kent, 2006). While the results of internal audit testing using a measure of accounting expertise and internal audit certification do not have a significant relationship to the amount of audit fees. The next test found a significant relationship that companies with internal auditor functions were sufficiently seen from a large scale and certified personnel, tending to choose auditors with big names such as Big4 which is in accordance with previous research (Cassell et al., 2012; Srinidhi & Firth, 2014).

Furthermore, this study also found a significant positive relationship between the internal audit function and audit quality. In this study, audit quality is measured by considering the existence of earnings management practices carried out by the company. The more companies have a tendency to practice earnings management, the more it shows the low audit quality of the company (Davidson & Neu, 1993; Habib, 2011; Soliman & Ragab, 2014). Audit quality is a negative value of earnings management as measured by the absolute value of discretionary accruals (Liu et al., 2017). The results of this research test are in line with the results of previous studies (Al-Muhtadi et al., 2012; Prawitt et al., 2009).

This study also conducted additional testing by examining the relationship of the internal audit function to the tendency of companies to accept going concern audit opinions. Going concern is an assumption that states that a company can maintain its life for an unlimited period of time. Previous research states that companies that receive modified audit opinions have a relationship to the level of total accruals (Bradshaw et al., 2001). The higher the company's accruals, the more likely the company receives a modified opinion. Supported by Shireenjit et al. (2007) found that companies that have a high level of accrual accounting reflect uncertainty about the condition of the company in the future and the possibility of earnings manipulation by management. So that on the basis of audit risk, auditors tend to report modified opinions in companies that have aggressive accrual rates. Furthermore, Prawitt et al. (2009)

state that total accruals are closely related to earnings management practices. In this case, internal auditors can play a role in mitigating the practices of accounting manipulation carried out by managers (Prawitt et al., 2009). Supported by Brown and Pinello (2007) which states that qualified internal auditors can contribute as third parties in supervising manager activities. Furthermore, internal auditors can provide credible detection of earnings management practices. (Al-Muhtadi et al., 2012; Al-Rassas & Kamardin, 2016; Prawitt et al., 2009). The test results show that the internal audit function has a negative and significant influence on the tendency of companies to accept going concern audit opinions. With the existence of an adequate internal audit function, the oversight mechanism for corporate governance is maximized to increase transparency and effectiveness of management performance. In accordance with Berglund, Herrmann and Lawson (2018), which states the effectiveness of management performance can improve managerial capabilities so that there is no doubt about the company's ability to maintain its life in the future.

This study contributes to the internal audit literature by providing support on the benefits of having a good quality of internal auditors for the company. This study also indicates that companies with an adequate internal audit function tend to pay greater external auditor fees, choose auditors with big names (Big4) to produce high audit quality and receive going concern audit opinions. This study help companies have a better performance through an effective internal audit function that can enable various business partners such as shareholders, personnel, state financial institutions to obtain certainty about the quality and reliability of the information provided by the company.

Furthermore, this research will be outlined with the arrangement as follows: Section 2 contains an explanation of the development of the research hypothesis; Section 3 contains an explanation of the variables and samples as well as the research model; Section 4 contains empirical analysis and results of hypothesis testing and sensitivity test results; and Section 5 contains a summary or conclusion from the research, including the suggestions for further research.

## 2. Literature review and hypotheses development

The existence and quality of an internal audit in a company is one of the keys to support the best practices of good corporate governance (Prawitt et al., 2009). Prior study from Al-Shetwi et al. (2011) suggests that the internal audit functions as a significant internal control of the effectiveness of corporate governance. In addition, according to Gay and Simnett (2007), the internal audit function plays an important role in creating a sense of security against fraudulent use of company assets and contributes to the trustworthy presentation of financial statements. Therefore, the presence of internal audits in encouraging good corporate governance is important. Therefore, one of the measurement to check the corporate governance quality in a company is by checking whether the company has reliable and competent internal audit team or not.

Prior studies have found that the characteristics of an internal audit team of the company affect the audit fees. Thornton and Moore (1993) conducted testing in several countries found there were similarities in variables that could have an impact on the size of the audit fees, namely company size, company internal control, business risk, and audit complexity. García et al. (2019) also explain that the existence of an internal audit function is positively related to audit fees, which shows that internal audit and external audit are not alternative mechanisms but act as complementary mechanisms. In terms of the company's internal supervision, internal auditors are the parties that greatly contribute to it (Felix et al., 2001). In this case, this study tries to relate how the internal audit function influences the amount of audit fees paid by the company to the external auditor. Previous research shows that companies that have effective governance due to the existence of adequate internal auditor functions will dare to pay high audit fees (DeFond & Zhang, 2014; Singh & Newby, 2010; Stewart & Kent, 2006). Hence, based on the above discussion, we formally proposed the hypothesis as follows:

### **H1: Internal audit has a positive effect on audit fees.**

The second type proxy audit outcomes is the audit quality. Davidson and Neu (1993) in his research revealed that audit quality is described as having a relationship with earnings management practices carried out by company management on financial statements that will later be examined by the auditor. Habib (2011) states that quality audit results are very closely related to low earnings management. Soliman and Ragab (2014) also stated that companies audited by big4 public accounting firms that are quality auditors tend to report lower earnings management. Hence, it can be said that companies that carry out minimum earnings management practices tend to have high audit quality. Companies that have good corporate governance tend to reduce the likelihood of management to do earnings management resulting in better financial reporting quality (Klein, 2002). One of the criteria of practicing a good corporate governance is indicated by an adequate corporate operational oversight mechanism supported by the presence of internal auditor functions (Boynton et al., 2006; Felix et al., 2001; Moeller, 2009; Stewart & Kent, 2006). Al-Shetwi et al. (2011) in his research stated that the function of internal auditors had a significant influence on the course of the company's internal oversight mechanism. This study assumes that an adequate internal audit function in the corporate governance mechanism will encourage the presentation of quality and minimal financial reports on earnings management practices so as to have a quality audit report. The logic is in line with previous research also states that investment in the functions of internal auditors will encourage the creation of quality financial reports than companies that do not have the function of internal auditors (Adiguzel, 2013; Al-Muhtadi et al., 2012; Al-Rassas & Kamardin, 2016; Prawitt et al., 2009). Hence, based on the above discussion, we propose the formal hypothesis as follows:

### **H2: Internal audit has a positive effect on audit quality**

In regards to auditor choice, Srinidhi and Firth (2014) found that companies with good internal mechanism governance tended to choose auditors with big names and good quality like Big4. The reason is to increase the value of the company and attract the investors to invest in the company because it has a reasonable assurance of adequate financial statements. Farkas et al. (2019) evaluate the internal audit function from the perspective of related parties, such as the audit committee, external auditors, and management. The results show that internal audit reports can be utilized by external auditors from Big 4 companies to ensure the consistency of their reports with company terminology. In addition, AlQadasi and Abidin (2018) found that companies that invest more in internal audit functions tend to invest also in external audit functions. This is due to the complementary concept that investment into a mechanism will have an impact on additional investment into other mechanisms (Abbott & Parker, 2000; Beasley & Salterio, 2001). This study predicts that companies that have an adequate internal audit mechanism tend to choose a big-name auditor (Big4) to carry out an independent audit task. These findings are consistent with several previous research (Cassell et al., 2012; Srinidhi & Firth, 2014). Therefore, we propose the

### **H3: Internal audit function has a positive effect on auditor choice**

Finally, this study examines the effect of the internal audit function on the tendency of companies to accept modified going concern audit opinions. The latest rules regarding business continuity in Auditing Standard 570, IAPI (2017) state that the auditor has the responsibility to ascertain whether there is material uncertainty related to the continuity of the company's business. If the auditor finds significant doubts related to uncertainty that the company can maintain its business in the future, the auditor is required to issue modification of opinion, namely going concern modification opinion (IAPI, 2017). In the research of Caramanis and Spathis (2006) found companies tend to accept modified going concern opinion if the financial condition is unstable, seen from



the low growth ratio of the company, the ratio of capital to total assets, and the number of employees who continue to decline. Furthermore, Shireenjit et al. (2007) added that companies that have a high level of accrual accounting reflect uncertainty about the condition of the company in the future and the possibility of earnings manipulation by management. So that on the basis of audit risk, auditors tend to report modified opinions in companies that have aggressive accrual rates. Furthermore, Prawitt et al. (2009) state that total accruals are closely related to earnings management practices. In this case, internal auditors can play a role in mitigating the practices of accounting manipulation carried out by managers (Prawitt et al., 2009). Supported by Brown and Pinello (2007) which states that qualified internal auditors can contribute as third parties in supervising manager activities. Furthermore, internal auditors can provide credible detection of earnings management practices (Al-Muhtadi et al., 2012; Al-Rassas & Kamardin, 2016; Prawitt et al., 2009). With the existence of an adequate internal audit function, the oversight mechanism for corporate governance is maximized so as to increase transparency and effectiveness of management performance. In accordance with Berglund et al., (2018), which states the effectiveness of management performance can improve managerial capabilities so that there is no doubt about the company's ability to maintain its life in the future. Based on the above discussion, we propose the formal hypothesis as follows:

**H4: Internal audit function has a negative effect on modified going concern audit opinion**

### **3. Data and method**

#### **3.1. Sample and data sources**

The sample in this study consist of all non-financial companies listed on the Indonesia Stock Exchange in the period of 2016 and 2017. The data sources in this study were obtained through company financial reports and OSIRIS database. All financial data, totaling 1,096 data, were obtained through the OSIRIS database. Data on the Internal Audit Function which includes the number of personnel, basic accounting skills, and certification of 828 data, obtained through financial statements. Data related to audit fees of 428 data, obtained through the company's financial statements. Data related to discretionary accrual is 611 data, obtained through company financial statements. Data related to opinion audits as many as 889 data, obtained through the company's financial statements. Audit choice-related data as many as 1077 data, obtained through financial statements of data companies. Of the 1096 data available after merging (except audit fee data). This study applied the sample selection criteria by deleting some missing data. After applying the sample selection criteria, finally, 722 observations were obtained as the main sample in this study.

#### **3.2. Variable definition**

Audit fee is the dependent variable in this study. Audit fees are a number of honorariums that are billed by a public accountant to a company related to audit services performed. Audit Quality is the second dependent variable in this study. This study uses the calculation of the level of earnings management with the modified Jones technique (Dechow et al., 1995) as an approach in calculating how much quality the audit is given. Audit choice is the third dependent variable in this study. The company audit choice uses measurements using the Dummy variable method, which is to give Points 1 if the company is audited by Big4 KAP and vice versa, if the company is not audited by Big4, it will be given 0. In accordance with previous studies supporting the use of audit quality measurement methods (Big4) (Al-Rassas & Kamardin, 2016; Fan & Wong, 2005). While the fourth dependent in this study was an audit opinion. In this study, the author uses the audit proxy of going concern opinion in determining the opinion audit value given by the auditor. By using a dummy variable with a value of "1" if the company gets a modified going concern opinion and a value of "0" if the company does not get modified going concern opinion. The independent variable in this study is the internal audit function. Internal audit in this study was measured by

the number of internal auditors (Stewart & Kent, 2006). This study also added the characteristics of internal audit calculations in addition to using the number of internal audits, namely basic accounting expertise and internal auditor personnel certification. These characteristics are in accordance with the calculations carried out in the study of Prawitt et al. (2009). See Table AI for a summary of the definition of variables and control variables in this study. All control variables refer to previous studies (AlQadasi & Abidin, 2018; Al-Rassas & Kamardin, 2016; Berglund et al., 2018; Prawitt et al., 2009; Shireenjit et al., 2007; Singh & Newby, 2010; Stewart & Kent, 2006). Table A1 shows the description of the variables used in this study.

### 3.3. Methodology

This study uses multiple linear regression models, namely ordinary least square (OLS). Multiple linear regression analysis is used to test the magnitude of the influence between two or more between independent variables on the independent variable accompanied by control variables if needed. There are four regression models used in this study based on the amount of the number of independent variables tested.

To test the first hypothesis in this study, the following regression model was used. We expect one of the coefficients of IASIZE, IACERTIFIED, and IAEXPERT to be significantly positive.

$$AFEE_{i,t} = \beta_0 + \beta_1 IASIZE_{i,t} + \beta_2 IACERTIFIED_{i,t} + \beta_3 IAEXPERT_{i,t} + \beta_4 AUDICOM_{i,t} + \beta_5 BIG4_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 ROA_{i,t} + \beta_8 LEVERAGE_{i,t} + \beta_9 FIRMSIZE_{i,t} + \varepsilon_{i,t}$$

To test the second hypothesis in this study, the following regression model was used. We expect one of the coefficients of IASIZE, IACERTIFIED, and IAEXPERT to be significantly positive.

$$AQUALITY_{i,t} = \beta_0 + \beta_1 IASIZE_{i,t} + \beta_2 IACERTIFIED_{i,t} + \beta_3 IAEXPERT_{i,t} + \beta_4 CFO_{i,t} + \beta_5 BIG4_{i,t} + \beta_6 LOSS_{i,t} + \beta_7 ROA_{i,t} + \beta_8 LEVERAGE_{i,t} + \beta_9 FIRMSIZE_{i,t} + \varepsilon_{i,t}$$

To test the third hypothesis in this study, the following regression model was used. We expect one of the coefficients of IASIZE, IACERTIFIED, and IAEXPERT to be significantly positive.

$$BIG4_{i,t} = \beta_0 + \beta_1 IASIZE_{i,t} + \beta_2 IACERTIFIED_{i,t} + \beta_3 IAEXPERT_{i,t} + \beta_4 INVENTORIES_{i,t} + \beta_5 LOSS_{i,t} + \beta_6 ROA_{i,t} + \beta_7 LEVERAGE_{i,t} + \beta_8 FIRMSIZE_{i,t} + \varepsilon_{i,t}$$

To test the fourth hypothesis in this study, the following regression model was used. We expect one of the coefficients of IASIZE, IACERTIFIED, and IAEXPERT to be significantly negative.

$$GOINGCONERN_{i,t} = \beta_0 + \beta_1 IASIZE_{i,t} + \beta_2 IACERTIFIED_{i,t} + \beta_3 IAEXPERT_{i,t} + \beta_4 BIG4_{i,t} + \beta_5 INVENTORIES_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CFO_{i,t} + \beta_8 LEVERAGE_{i,t} + \varepsilon_{i,t}$$

## 4. Empirical result and discussion

### 4.1. Descriptive statistics and univariate comparisons

Table 1 contains sample distribution based on the research industry. The number of observations in this study is 722 observations covering 375 companies in 2016, 347 companies in 2017.

Table 2 shows the results of descriptive statistics. In this study, the descriptive statistics table consists of two panels to simplify the description of the existing variable arrangement. Panel A shows description statistics related to the independent variable regression model, internal audit function, and its relationship to the dependent variable, audit quality, and audit opinion, as well as additional variable control number of audit committees (AUDCOM). While Panel B is a statistical description of the arrangement of variables incorporated in the regression model of the relationship between the independent variable, internal audit function, of the dependent variable, audit choice.



**Table 1. Sample distribution**

SIC	Internal auditor certification					
	Without certification	%	With certification	%	Total	%
0	22	75.86	7	24.14	29	100
1	83	76.15	26	23.85	109	100
2	168	87.5	24	12.5	192	100
3	114	87.69	16	12.31	130	100
4	75	73.53	27	26.47	102	100
5	68	87.18	10	12.82	78	100
7	56	90.32	6	9.68	62	100
8	14	70	6	30	20	100
Total	600	83.1	122	16.9	722	100

First row has frequencies and second row has row percentages.

**Table 2. Descriptive statistics**

Variable	Total (N)	Mean	Median	Minimum	Maximum
<b>Panel A</b>					
AFEE	407	1,898,000,000	755,500,000	46,750,000	43,700,000,000
AUDCOM	679	2.9	3	0	6
KOTHARI	550	-0.055	-0.04	-0.79	0
JONES	550	-0.055	-0.041	-0.669	0
MODJONES	550	-0.053	-0.041	-0.651	0
LARCKER	550	-0.058	-0.039	-1.386	0
GOINGCONCERN	719	0.095	0	0	1
<b>Panel B</b>					
BIG4		0.386	0	0	1
IASIZE		3.924	1	0	78
IAEXPERT		0.795	1	0	1
IACERTIFIED		0.169	0	0	1
LOSS		0.226	0	0	1
FIRMSIZE		9,426,000,000	2,562,000,000	10,579,214	295,600,000,000
ROA		0.056	0.056	-0.421	0.503
LEVERAGE		0.538	0.49	0.023	4.431
INVENTORIES		0.132	0.097	0.001	0.491

*n* = 722.

The mean values for the audit fee are IDR 1,898,000,000. The average number of the audit committee is 2.9. The average earnings management variables (KOTHARI, JONES, MODJONES, LARCKER) range between 5.5–5.8%. This result shows that the average audit quality ranges from 94.2–94.5%. The average number of internal auditor personnel is 3,924. Of the firms, 79.5% have an internal auditor with accounting expertise and 16.9% have an internal auditor who are certified auditors (CPA/CIA). Furthermore, the average number of companies that get a going concern audit opinion is 9.5%. The average number of companies that hire Big4 auditors is 38.6% and 22.6% suffered loss. The average company has total assets of IDR 9,426,000,000, ROA of 0.056, leverage of 53.8%, and inventory of 13.2%.

Table 3 shows the results of the Pearson correlation test using four different panels. Each panel shows the relationship between variables based on four dependent variables in this study. The four panels are divided into Panel A which describes the relationship between the internal audit function variable and the audit fee variable, Panel B describes the internal audit function variables on audit quality variables, Panel C shows the internal audit function variable for the choice audit variable, while panel D shows the variable internal audit function of audit opinion variables.

The Pearson correlation test Panel A addresses a significant positive relationship between the independent variable internal audit function and the dependent variable audit fee. The independent variable, internal audit function, is measured using three proxies, namely amount (IASIZE), expertise (IAEXPERT), and certification (IACERTIFIED) of internal audit personnel. Each proxy of the internal audit function has a significant positive relationship to the dependent variable, audit fee, with a significance level of 1%.

Table 3 of panel B's Pearson correlation test shows that there is a significant positive relationship between the independent variables of the number of internal auditor personnel (IASIZE) on audit quality (MODJONES) with a significance level of 10%. This indicates that the greater the number of internal auditors produce high audit quality. In addition, there is a significant positive relationship between the independent variables of the basic expertise of internal auditors (IAEXPERT) on audit quality variables (JONES) with a significance level of 5%. This means that if the company has internal auditor personnel who have basic accounting expertise, it can affect the higher probability of quality audit results. From the table, it can also be seen that there is a non-significant positive relationship between the variable internal auditor certification (IACERTIFIED) and audit quality (MODJONES) which indicates that the more companies have certified internal auditor personnel, the more likely the company has adequate audit quality.

In the Pearson Correlation Test, Panel C shows a significant positive relationship between the independent variable, internal audit function, and the dependent variable, audit choice. The variable number of internal auditor personnel (IASIZE) has a significant positive relationship with auditor selection (BIG4) with a significance level of 1%. While the expertise variable of internal auditor personnel (IAEXPERT) also has a significant positive relationship to auditor selection (BIG4) with a significance level of 1%. The variable internal auditor personnel certification (IACERTIFIED) also has a positive relationship to auditor selection (BIG4) with a significance level of 1%. Hence, it concludes that the better the internal auditor's function can be seen from the amount, expertise, and adequate certification can influence the tendency of companies to choose auditors with big names (BIG4).

The Pearson correlation test's Panel D shows a significant positive relationship between the independent variable, internal audit function, and the dependent variable, audit opinion. The variable number of internal auditor personnel (IASIZE) has a significant negative relationship with audit opinion (GOINGCONCERN) with a significance level of 1%. While the expertise variable of internal auditor personnel (IAEXPERT) also has a significant negative relationship to audit opinion (GOINGCONCERN) with a significance level of 1%. The variable internal auditor personnel certification (IACERTIFIED) also has a significant negative relationship to audit opinion (GOINGCONCERN) with a significance level of 5%. Hence, it concludes that the better the internal auditor function, as seen from the amount, expertise, and adequate certification, can affect the tendency of companies not to get a going concern audit opinion (GOINGCONCERN) from an independent auditor.

#### **4.2. Main analysis**

The analysis model in this study uses the Ordinary Least Square (OLS) model with the help of STATA 14.0 software. This study was conducted with the aim of examining the relationship between internal audit function and the amount of fee audit, audit quality and its relationship to audit choice and audit opinion on non-finance companies listed on the Indonesia Stock

**Table 3. Pearson correlation test**

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
<b>Panel A</b>							
[1] KOTHARI	1.000						
[2] JONES	0.874*** (0.000)	1.000					
[3] MODJONES	0.874*** (0.000)	0.958*** (0.000)	1.000				
[4] LARCKER	0.919*** (0.000)	0.841*** (0.000)	0.838*** (0.000)	1.000			
[5] IASIZE	0.037 (0.386)	0.076* (0.075)	0.071* (0.096)	0.039 (0.361)	1.000		
[6] IAEXPERT	0.006 (0.893)	0.095** (0.026)	0.058 (0.175)	0.002 (0.968)	0.202*** (0.000)	1.000	
[7] IACERTIFIED	-0.033 (0.441)	0.019 (0.658)	0.015 (0.732)	-0.022 (0.600)	0.369*** (0.000)	0.215*** (0.000)	1.000

n=407, p-values in parentheses, \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

(Continued)

**Table 3. (Continued)**

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
<b>Panel B</b>							
[1] KOTHARI	1.000						
[2] JONES	0.874*** (0.000)	1.000					
[3] MODJONES	0.874*** (0.000)	0.958*** (0.000)	1.000				
[4] LARGKER	0.919*** (0.000)	0.841*** (0.000)	0.838*** (0.000)	1.000			
[5] IASIZE	0.037 (0.386)	0.076* (0.075)	0.071* (0.096)	0.039 (0.361)	1.000		
[6] IAEXPERT	0.006 (0.893)	0.095** (0.026)	0.058 (0.175)	0.002 (0.968)	0.202*** (0.000)	1.000	
[7] IACERTIFIED	-0.033 (0.441)	0.019 (0.658)	0.015 (0.732)	-0.022 (0.600)	0.369*** (0.000)	0.215*** (0.000)	1.000

	BIG4	IASIZE	IAEXPERT	IACERTIFIED
<b>Panel C</b>				
BIG4	1.000			
IASIZE	0.250*** (0.000)	1.000		
IAEXPERT	0.128*** (0.001)	0.218*** (0.000)	1.000	
IACERTIFIED	0.272*** (0.000)	0.373*** (0.000)	0.229*** (0.000)	1.000
n=722, p-values in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.01				
<b>Panel D</b>				
GOINGCONCERN	1.000			
IASIZE	-0.108*** (0.004)	1.000		
IAEXPERT	-0.118*** (0.002)	0.219*** (0.000)	1.000	
IACERTIFIED	-0.094** (0.012)	0.377*** (0.000)	0.228*** (0.000)	1.000
n=719, p-values in parentheses, * p < 0.1, ** p < 0.05, *** p < 0.01				

Exchange for the period of 2016–2017. In this study, regression analysis was carried out twice, the first using Ordinary Least Square (OLS) regression analysis which is a regression model that minimizes the number of squared errors (Makarti & Karim, 2017). The second analysis uses Ordinary Least Square (OLS) with Robust. Robust regression is used when the distribution of errors is abnormal or there are outliers that influence the model (Ryan, 1997). By using the robust model can test variables by analyzing data without throwing out outliers so they can overcome OLS's weaknesses against the influence of outliers.

**4.2.1. The first stage of regression: testing the relationship between the internal audit function and audit fees**

To test the first hypothesis in this study, the author uses the following regression model:

$$AFEE_{it} = \beta_0 + \beta_1 IASIZE_{it} + \beta_2 IACERTIFIED_{it} + \beta_3 IAEXPERT_{it} + \beta_4 AUDICOM_{it} + \beta_5 BIG4_{it} + \beta_6 LOSS_{it} + \beta_7 ROA_{it} + \beta_8 LEVERAGE_{it} + \beta_9 FIRMSIZE_{it} + \epsilon_{it}$$

Table 4 shows the results of Regression (1) above, can be seen in the AFEE column with OLS, the IASIZE coefficient is 0.023 with a t-value of 5.07 and a significance level at the level of 1%. This means that every 1 point increase in IASIZE has an effect on rising AFEE of 0.023. In the AFEE column with OLS Robust, the IASIZE coefficient is 0.023 with a t-value of 3.93 and a significance level of 1%. This implies that every 1 point increase in IASIZE has an effect on rising AFEE of 0.023. This result is consistent with the first hypothesis that companies with adequate internal audit functions tend to pay higher audit fees. The value of  $r^2$  in the AFEE variable shows that the regression model is able to explain the relationship between the dependent and independent variables at 65.1%.

**4.2.2. The second stage of regression: testing the relationship between the internal audit function and audit quality**

To test the second hypothesis in this study, the author uses the following regression model:

$$AQUALITY_{it} = \beta_0 + \beta_1 IASIZE_{it} + \beta_2 IACERTIFIED_{it} + \beta_3 IAEXPERT_{it} + \beta_4 CFO_{it} + \beta_5 BIG4_{it} + \beta_6 LOSS_{it} + \beta_7 ROA_{it} + \beta_8 LEVERAGE_{it} + \beta_9 FIRMSIZE_{it} + \epsilon_{it}$$

Table 5 displays the results of Regression (2), it can be seen in the MODJONES column with OLS Robust, the IASIZE coefficient is 0.001 with a t-value of 2.25 and a significance level of 5%. This means that every 1 point increase in IASIZE has an effect on the increase in MODJONES variable by

**Table 4. Internal audit and audit fees**

Variable	Predicted directions	AFEE	
		OLS	OLS robust
IASIZE	+	0.023*** (5.07)	0.023***(3.93)
IAEXPERT	+	0,113(0.94)	0,113(1.03)
IACERTIFIED	-	-0.125(-1.29)	-0.125(-1.39)
AUDCOM	+	0.071(1.07)	0.071(1.00)
BIG4	+	0.752***(8.79)	0.752***(9.43)
LOSS	+	0,132(1.14)	0,132(1.19)
ROA	+	0.901**(2.17)	0.901**(2.08)
LEVERAGE	+	0.304** (2.20)	0.304**(2.12)
FIRMSIZE	+	0.389***(12.34)	0.389***(13.45)
_cons	+	8.383***(9.37)	8.383***(9.89)
Year dummy		Included	Included
Industry dummy		Included	Included
$r^2$		0,651	0,651
N		407	407

t statistics in parentheses \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .



**Table 5. Internal audit and audit quality**

Variable	Direction predictions	KOTHARI		JONES		MODJONES		LARCKER	
		OLS	robust	OLS	robust	OLS	robust	OLS	robust
IASIZE	+	0.000**	(2.23)	0.000*	(1.65)	0.001**	(2.25)	0.001**	(2.50)
IAEXPERT	-	-0.006	(-0.75)	0.004	(0.52)	-0.000	(-0.06)	-0.008	(-0.81)
IACERTIFIED	-	-0.006	(-1.11)	-0.005	(-0.96)	-0.002	(-0.35)	-0.009	(-1.37)
BIG4	+	0.001	(0.27)	0.004	(1.02)	0.004	(0.94)	0.002	(0.45)
LOSS	+	0.018**	(2.36)	0.001	(0.18)	0.007	(0.97)	0.025**	(2.46)
FIRMSIZE	+	0.002	(0.86)	0.005**	(2.17)	0.003	(1.30)	0.006	(1.33)
LEVERAGE	-	-0.022**	(-2.21)	-0.021**	(-2.33)	-0.017*	(-1.88)	-0.018*	(-1.74)
ROA	+	0.040***	(2.92)	0.001	(0.03)	0.043***	(2.94)	0.047***	(2.79)
CFO	-	-0.000	(-1.12)	-0.000*	(-1.71)	-0.000**	(-2.29)	-0.000	(-1.64)
_cons	-	-0.095	(-1.26)	-0.182***	(-2.61)	-0.118*	(-1.80)	-0.208*	(-1.65)
Year dummy		Included		Included		Included		Included	
Industry dummy		Included		Included		Included		Included	
r <sup>2</sup>		0,193		0,237		0,217		0,113	
N		550		550		550		550	

t statistics in parentheses \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

0.001. In the LARCKER column with OLS Robust, the IASIZE coefficient is 0.001 with a t-value of 2.50 and a significance level of 5%. This implies that every 1 point increase in IASIZE affects the increase in the LARCKER variable by 0.001. This result is consistent with the second hypothesis that companies with adequate internal audit functions tend to produce good audit quality. The value of  $r^2$  in the MODJONES variable shows that the regression model is able to explain the relationship between the dependent and independent variables at 21.7%.

#### 4.2.3. The third stage of regression: testing the relationship between internal audit function and audit choice

To test the third hypothesis in this study, the author uses the following regression model:

$$BIG_{it} = \beta_0 + \beta_1 IASIZE_{it} + \beta_2 IACERTIFIED_{it} + \beta_3 IAEXPERT_{it} + \beta_4 INVENTORIES_{it} + \beta_5 LOSS_{it} + \beta_6 ROA_{it} + \beta_7 LEVERAGE_{it} + \beta_8 FIRMSIZE_{it} + \varepsilon_{it}$$

Table 6 displays the results of Regression (3). It shows that in the BIG4 column with OLS Robust, the IASIZE coefficient is 0.003 with a t-value of 1.69 and a significance level at the level of 10%. This means that every 1 point increase in IASIZE has an effect on the increase in BIG4 of 0.003. Then, the IACERTIFIED coefficient is 0.185 with a t-value of 3.72 and a significance level of 1%. This implies that every 1 point increase in IACERTIFIED has an effect on the increase in BIG4 of 0.185. This result is consistent with the third hypothesis that companies with adequate internal audit functions tend to choose big-name auditors or Big4 to conduct independent audits. The value  $r^2$  on the BIG4 variable indicates that the regression model is able to explain the relationship between the dependent and independent variables at 26.5%.

#### 4.3. Additional testing

This study aims to examine the effect of the internal audit function on the tendency of companies to accept modified going concern audit opinions. Therefore, additional testing is carried out related to the relationship of the internal audit function variable and GOINGCONCERN variables. Regarding the GOINGCONCERN variable data, it uses dummy data that gives a value of 0 (zero) if the company does not accept a going concern audit opinion and gives a value of 1 (one) if the company receives a going concern audit opinion from an independent auditor. In additional testing, this study conducted a regression analysis performed twice, the first using Ordinary Least Square (OLS) regression analysis. The second analysis uses Ordinary Least Square (OLS) with Robust.

**Table 6. Internal audit and audit choice**

Variable	Predicted directions	BIG4	BIG4
		OLS	OLS robust
IASIZE	+	0.003(1.24)	0.003*(1.69)
IAEXPERT	-	-0.051(-1.19)	-0.051(-1.22)
IACERTIFIED	+	0.185***(3.88)	0.185***(3.72)
LOSS	+	0.096*(1.92)	0.096*(1.95)
FIRMSIZE	+	0.109***(8.76)	0.109***(9.39)
ROA	+	0.879***(4.61)	0.879***(5.30)
LEVERAGE	-	-0.008(-0.22)	-0.008(-0.25)
INVENTORIES	+	0.063(0.43)	0.063(0.43)
_cons	-	-2.795***(-7.71)	-2.795***(-8.56)
Year dummy		Included	Included
Industry dummy		Included	Included
$r^2$		0,265	0,265
N		722	722

t statistics in parentheses \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

#### 4.3.1. The fourth stage of regression: testing the internal audit function relationship and audit opinion

To test the fourth hypothesis in this study, the author used a regression model:

$$GOINGCONCERN_{i,t} = \beta_0 + \beta_1 IASIZE_{i,t} + \beta_2 IACERTIFIED_{i,t} + \beta_3 IAEXPERT_{i,t} + \beta_4 BIG4_{i,t} + \beta_5 INVENTORIES_{i,t} + \beta_6 ROA_{i,t} + \beta_7 CFO_{i,t} + \beta_8 LEVERAGE_{i,t} + \varepsilon_{i,t}$$

Table 7 shows the regression (8) results, which states that the GOINGCONCERN column with OLS Robust, the IASIZE coefficient is -0.002 with a t-value of -2.25 and a significance level at the level of 1%. This shows that every 1 point increase in IASIZE has an effect on the decrease in GOINGCONCERN by 0.002.

The Robust model regression results show that the IASIZE variable which is the number of the company's internal audit personnel has a significant negative relationship to the GOINGCONCERN variable which is the result of the audit opinion received by the company by an external auditor either going concern or non-going concern. These results are consistent with the fourth hypothesis in this study, that companies with adequate internal audit functions are less likely to receive going concern audit opinions. The value of  $r^2$  on the GOINGCONCERN variable indicates that the regression model is able to explain the relationship between the dependent and independent variables at 30.2%.

#### 4.4. Discussion

##### 4.4.1. Relationship between the internal audit function and audit fees

Good corporate governance has transparent oversight of the company's operations. An effective oversight mechanism in reducing risk due to agency problems can be carried out by the internal audit and external audit functions (Felix et al., 2001). OLS regression analysis results show that the internal audit function is positively and significantly related to the amount of audit fees incurred by the company to hire an external auditor. This indicates that companies with a good internal audit function tend to try to increase the supervision of the company through the role of external auditors and are willing to pay an audit fee high enough to obtain quality audit results. The results of this study are in line with AlQadasi and Abidin (2018) which explains that companies with strong internal governance want high audit quality and willing to pay high enough audit fees to create

**Table 7. Internal audit and audit opinion**

Variable	Predicted directions	GOINGCONCERN	GOINGCONCERN
		OLS	OLS robust
IASIZE	-	-0.002(-1.46)	-0.002***(-2.75)
IAEXPERT	-	-0.013(-0.53)	-0.013(-0.47)
IACERTIFIED	-	-0.006(-0.23)	-0.006(-0.29)
BIG4	-	-0.062***(-2.93)	-0.062***(-3.52)
CFO	+	0.339*** (2.73)	0.339*** (2.91)
INVENTORIES	-	-0.237***(-2.80)	-0.237***(-3.18)
LEVERAGE	-	0.213*** (10.22)	0.213*** (9.26)
ROA	+	-0.819***(-7.34)	-0.819***(-5.58)
_cons	+	0.217*** (4.03)	0.217*** (2.79)
Year dummy		Included	Included
Industry dummy		Included	Included
$r^2$		0,302	0,302
N		719	719

t statistics in parentheses \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

good corporate value. In addition, Singh and Newby (2010) also address the same results, companies that have a strong internal audit mechanism will hire reliable auditors and pay more audit fees with the aim of increasing the company's internal control.

#### *4.4.2. Relationship between the internal audit function and audit quality*

In this study, audit quality is measured using consideration of the existence of earnings management practices carried out by companies. Companies that have a tendency to practice earnings management are increasingly showing the low quality of audit firms (Davidson & Neu, 1993; Habib, 2011; Soliman & Ragab, 2014). The results showed that the internal audit function had a positive and significant effect on the quality of the resulting audit. Al-Shetwi et al. (2011) explained that the internal audit function had a significant influence on the company's internal control mechanism. Thus, the existence of an internal audit mechanism will increase oversight of corporate governance, which in turn will impact the decline in earnings management practices and improve the audit quality. These results are in line with the previous studies which stated that the internal audit function has a positive relationship with the audit quality produced (AlQadasi & Abidin, 2018).

#### *4.4.3. Relationship between the internal audit function and audit choice*

One of the benchmarks commonly used to measure audit quality is the size of a public accounting firm (DeAngelo, 1981). The greater the public accounting firm, the greater the possibility of the auditor providing reliable and quality audit procedures. OLS regression analysis results show that the internal audit function has a positive and significant influence on the tendency of companies to choose external auditors with big names (Big4). These results are in line with research conducted by Srinidhi and Firth (2014) who found that companies with good internal governance mechanisms tend to choose auditors with big names and good quality such as Big4. It is done to increase the value of the company and attract investors to invest in the company because it has adequate financial statement assurance.

#### *4.4.4. Relationship between the internal audit function and audit opinion*

Previous research explains that companies that receive modified audit opinions related to the level of total accruals, which is an indication the company is earnings manipulation (Bradshaw et al., 2001). The higher the company's accruals, the more it allows the company to accept modified opinions. Shireenjit et al. (2007) show that high levels of accrual accounting reflect uncertainty about the condition of the company in the future. On the basis of audit risk, the auditor as an appraisal body tends to report modified opinions on companies that have an aggressive accrual rate. The results of this study indicate that the internal audit function has a negative and significant influence on the tendency of companies to accept modified going concern audit opinions. With an adequate internal audit function, the oversight mechanism for corporate governance is maximized thereby increasing transparency and effectiveness of management performance. In accordance with Berglund et al., (2018), the effectiveness of management performance can improve managerial ability so that there is no doubt about the corporate sustainability.

## **5. Conclusion**

This study aims to analyze the influence of internal audit on audit fees, audit quality, audit choice, and audit opinion of all non-financial companies listed on the Indonesia Stock Exchange for two periods from 2016 to 2017. This study found that internal auditors as a corporate oversight mechanism have a positive and significant relationship to the audit fee and audit choice, which means that companies with adequate internal audit functions tend to choose external auditors with big names (Big4) and pay higher audit fees. The internal audit function also has a positive and significant effect on the audit quality variable. This means that companies with adequate internal audit functions tend to produce good audit quality by encouraging the presentation of quality financial statements and minimum earnings management practices so that they have quality audit reports. In addition, this study found that internal audit also has a negative and significant influence on the tendency of companies to accept going concern audit opinions. Companies with adequate internal audit functions tend to have a going concern audit opinion. This is due to the existence of an adequate internal audit function can

increase transparency and effectiveness of management performance, so that there is no doubt about the company's ability to maintain its life in the future.

This study has several limitations because it does not include several other factors in calculating internal audit functions, such as experience, training, and investment issued by the company for internal audit costs, due to the limited disclosure of information provided by the company regarding the internal audit function in financial statements. However, this research gives consideration to shareholders to improve corporate governance to make supervision of management operations adequate and minimal practice of profit manipulation. This study also helps companies have a better performance through an effective internal audit function that can enable various business partners such as shareholders, personnel, state financial institutions to obtain certainty about the quality and reliability of information provided by the company. This research has implications for decision makers in the company as a consideration in maximizing the functions of internal auditors.

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## Appendix A

**Table A1. Variable definitions**

	<b>Variable</b>	<b>Proxy</b>	<b>Source</b>
Dependent: audit fee	AFEE	Natural logarithms of Auditor fee	ORBIS
Audit quality	MODJONES	Using the level of earnings management to look for discretionary accruals.	ORBIS
Audit choice	BIG4	Dummy variable, given the value of 1 (one) if the company is audited by Big4 public accounting firms, and 0 (Zero) if the company is not audited by Big4 public accounting firms.	FS
Audit opinion	GOING CONCERN	Dummy variable, given the value 1 (one) if the company receives the “Going Concern” audit opinion and 0 (Zero) if the company does not receive the “Going Concern” audit opinion	FS
Independent: number of internal auditors	IASIZE	The number of internal auditor personnel recorded in the company’s financial statements for the current year	FS
Expertise of internal auditors	IAEXPERT	Dummy variable, given the value of 1 (one) if the company has internal audit personnel who are graduates of S1 (Bachelor Degree) in Accounting and given 0 (zero) if the company does not have internal audit personnel who are graduates of S1 in Accounting.	FS
Certifications of internal auditors	IACERTIFIED	Dummy variable, given the value of 1 (one) if the company has internal audit personnel who are certified auditors (CPA/CIA) and given a value of 0 (zero) if the company does not have internal audit personnel who are certified auditors (CPA/CIA)	FS
Control: audit committee	AUDCOM	Number of audit committees in the company	FS
Total debt	LEVERAGE	Total debt divided by total assets	ORBIS
Firm size	FIRMSIZE	Natural logarithm of total assets	ORBIS
Cash flow from operating activity	CFO	Net cash flow from operating activities divided by total assets	ORBIS
Inventory	INVENTORIES	Total inventory divided by total assets	ORBIS
Loss	LOSS	Dummy variable, given 1 (one) point if the company in the current year experiences a loss, and is given a value of 0 (zero) if the company in the current year does not experience a loss	FS
Return on asset	ROA	Total EBIT divided by total assets	ORBIS



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