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51/2023

2023

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## **Audit quality of the coal mining companies listed on the Indonesian stock exchange**

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**Abstract.** This study aims to determine the influence of audit fee, audit tenure, and audit rotation on audit quality in coal mining companies listed on the Indonesian Stock Exchange for the period 2017 to 2021. The population of this study totaled 47 companies and the purposive sampling method resulted in 12 companies or 60 firms-years for analysis. This research is a quantitative study using secondary data in the form of annual financial reports from sample companies. Based on the test results show that audit fee has a positive effect on audit quality, meanwhile audit tenure and audit rotation have no effect on audit quality.

**Keywords.** Audit Fee, Audit Quality, Audit Rotation, Audit Tenure

### **1. Introduction**

Audit quality is a feature or description of audit practice and quality based on auditing standards and quality control standards which are a measure of the implementation of the obligations and responsibilities of audit professionals. To produce good and quality information, good audit quality and independent auditors are needed. Independent auditors have an independent attitude, this is very important in gathering information because the information used in making the right decisions.

The independence of an auditor is important because an auditor must have a neutral nature, not taking sides with any party. Independence is a form of honesty possessed by an auditor when considering facts and expressing opinions with objective considerations (Agoes Sukrisno, 2016). Not only independence, the auditors must also have extensive knowledge of auditing and understanding of the auditor's professional code of ethics and auditing standards.

Audit quality is all possibilities where an auditor when auditing a client's financial statements finds violations that occur in the client's accounting system and reports them in audited financial statements. In carrying out these duties, the auditor must always be guided by auditing standards and the relevant code of ethics for public accountants (Watkins et al, 2004). Several factors into consideration of quality can be seen from the audit tenure, audit rotation and audit fees.

According to Mulyadi (2010), audit fees are the amount of money received by public accountants after carrying out audit services. Hoitash et al in Hartadi (2012) found evidence that when the auditor negotiates with management regarding the amount of the fee that must be

paid by management for the work of the audited report, it is highly likely that reciprocal concessions will occur which will reduce the quality of the audited report. This action leads to actions that undermine professionalism and will reduce audit quality.

Audit tenure is a period of engagement of an audit relationship with a client. Engagement that is carried out for a long time makes excessive closeness affecting the independence and objectivity of the auditor to decrease. When the auditor gets a new client, it takes a long time to get to know and understand the client and the client's business. According to Hamid (2013), short relationships can also have an impact on an auditor in obtaining limited evidence. Because this can lead to potential misstatements that are not detected by the auditor.

The application of government regulations regarding mandatory rotation is based on theoretical reasons that the theoretical application of mandatory rotation is for auditors and public accounting firms and is expected to increase auditor independence. Nuriantiati & Purwanto (2017) revealed that there is auditor rotation in auditing to prevent the relationship between the auditor and the client so that there is no excessive relationship and there is no escalation of the auditor's commitment to deviations committed by the client.

## **2. Literature Review**

### **2.1. Agency Theory**

Agency relationship is a contract where the principal orders the agent to perform a service on behalf of the principal and authorizes the agent to make the best decision for the principal (Jensen & Meckling, 1976). If the principal and agent have the same goal, the agent will support and carry out everything ordered by the principal. Conflicts can occur if the agent does not carry out what is ordered by the principal for his own interests. In this study, shareholders are principals while managers are agents. Principals instruct agents to carry out their work according to the agreed work contract.

Agency theory emphasizes the importance of company owners or shareholders handing over the management of the company to experts called agents in order to better understand running daily business. The greater the profit obtained by the company, the greater the benefits obtained by the agent. While the company owner only supervises and monitors the running of the company which is managed by management and develops an incentive system for management to ensure that management works in the interests of the company.

Agency theory also reveals that the need for services from an independent party to check what is done by management is in accordance with the interests of the principal and is considered capable of resolving the interests of the principal with the agent. In this agency relationship, problems sometimes arise between the interests of the principal (owner) and the interests of the agent (management). Management has responsibilities that conflict or contradict the interests of company owners so that this can cause problems (Arifin, 2005).

### **2.2. Audit Quality**

Audit quality is where the possibility of the auditor when auditing the client's financial statements can find violations that occur in the client's accounting system and report them in the audited financial statements (De Angelo, 1981). In carrying out their duties, an auditor must be guided by auditing standards and the relevant public accountant code of ethics. Audit quality is a characteristic or description of practice based on auditing standards and quality control standards that serve as a measure of the implementation of the duties and responsibilities of the auditor profession.

Audit quality relates to how well a job is completed compared to predetermined criteria. Audit quality is also related to the disclosure of accounting information in the form of company financial reports which are used to support investors in making the right estimates in assessing the company (Titman & Trueman, 1986). A quality can be seen from the clarity of the information on the results of the audit in the financial statements that have been audited by the auditor and in accordance with auditing standards.

Audit quality can also affect the reputation of the public accounting firm. Verdiana & Utama (2013) find that an auditor is responsible for maintaining public trust and maintaining the good name of the auditor himself and the public accounting firm by issuing opinions that are in accordance with the actual state of the company's financial statements. De Angelo (1981) revealed that larger public accounting firm can improve their audit quality better which will affect clients in choosing a public accounting firm. Audit quality is said to be of high quality, which can be seen in the big four group.

### **2.3. Audit Fee**

An auditor works to get a reward or wages in the form of an audit fee. In their research Hoitash et al in Hartadi (2012) found evidence that when the auditor negotiates with management regarding the amount of the fee that must be paid by management for the work of the audited report and this is agreed based on the work contract before starting the audit process, then this is likely to there is a reciprocal effect that will reduce the quality of the audited report. This action will lead to actions that undermine professionalism, and will reduce audit quality.

Determination of audit fees is no less important in accepting assignments, because the auditor will certainly work to earn adequate income. The amount of audit fees received is usually expected to affect audit quality. Therefore, the determination of the audit fee needs to be agreed upon by the client and the auditor, so that a tariff war does not occur which will undermine the credibility of the public accountant and the public accounting firm.

Agoes Sukrisno (2016) said that the amount of member fees varies depending on, among others: assignment risk, the complexity of the services provided, the level of expertise required to carry out these services, the cost structure of the public accounting firm concerned and other professional considerations. Public accounting firm members are not allowed to get clients by offering fees that can damage the image of the profession as an auditor.

### **2.4. Audit Tenure**

Audit tenure is the length of the relationship between the auditor and the client or company audited by the auditor which can be measured by the number of years. Audit tenure can be debated because tenure can have an impact on the performance of auditors and client companies such as the auditor's emotional relationship with clients, independence, and others. Short tenure when the auditor gets a new client takes a long time to get to know and understand the client and the client's business (Hamid, 2013).

A short relationship between the auditor and his client can have an impact on an auditor in terms of obtaining limited information and evidence. Because this can lead to potential misstatements that are not detected by the auditor. Therefore, a long-term relationship is needed so that the auditor can better understand the client's business and client risks. But in a long tenure it can also result in the relationship between the auditor and the client getting closer emotionally, so that this closeness can interfere with the auditor's independence in carrying out his duties.

Provisions regarding tenure audits in Indonesia have been regulated in the Decree of the Minister of Finance of the Republic of Indonesia No. 17/PMK.01/2008. The regulation states that the provision of services for a public accounting firm is for 6 consecutive years, while for the provision of services by a public accountant is for 3 consecutive years. This regulation was issued with the aim of preventing fraud due to the closeness between the auditor and the client.

### **2.5. Audit Rotation**

Auditor rotation is an auditor shift that occurs due to mandatory regulations and can occur voluntarily from the auditor and based on management decisions (Davidson et al, 2005). Leonora (2012) revealed that the audit rotation policy implemented in Indonesia has not been effective, bearing in mind that at the beginning of the audit assignment the level of auditor independence was high, but the level of familiarity with the cases and clients encountered was still low.

Starting from the occurrence of the Enron case involving the public accounting firm Arthur Anderson, regulations in Indonesia made mandatory auditor changes. With the stipulation of provisions regarding mandatory rotation with the aim of increasing auditor independence both in appearance and in fact. This mandatory rotation is expected to have a significant effect on auditing practices carried out by the auditors and to maintain an attitude of independence.

This provision regarding mandatory rotation was issued to maintain the attitude of auditor independence, and therefore the company is obliged to carry out audit rotation. Audit rotation is a rule regarding the change of auditors carried out by an entity. Therefore, the government issued regulations governing audit rotation based on Minister of Finance Decree No. 17/PMK.01/2008 where this regulation states that the provision of services by a public accounting firm is for 6 consecutive years, while for public accountants it is for 3 consecutive years. Therefore, the company must replace the public accounting firm and public accountant if the time specified for the contract period has expired.

### **2.6. Hypothesis**

Audit fee is an honorarium received by the auditor from the client for providing audit services in accordance with the agreement. Determination of audit fees is important in accepting assignments, because this relates to the resources that will be used by auditor in carrying out assignments. In general, auditors with higher quality will charge a higher audit fee as well. Research conducted by Qodriyah (2016) found that audit fees affect audit quality. While the results of research conducted by Tri & Dian (2020) found that audit fees have no effect on audit quality. Therefore, the hypothesis proposed in this study is as follows:

#### **H1: Audit fee have a positive effect on audit quality**

Audit tenure is the length of relationship (consecutive assignments) between the auditor and the client which can be measured by the number of years. Research conducted by Simatupang Linda (2019) found that tenure audits have no effect on audit quality. These results are also supported by research conducted by Tri & Dian (2020) which found that tenure audits have no effect on audit quality. Meanwhile, research conducted by Qodriyah (2016) and Jannah Raodatul (2020) found that tenure audits have a positive effect on audit quality. Therefore, the hypothesis proposed in this study is as follows:

**H2: Audit tenure have a positive effect on audit quality**

Audit rotation is a set of rules regarding the exchange or rotation of auditors by the client. Provisions regarding this exchange or rotation are made to maintain the attitude of auditor independence and therefore the company or client is obliged to carry out audit rotation according to regulations. The results of research conducted by Ninik (2017) found that audit rotation does not affect audit quality. The results of this study are supported by research conducted by Darmaningtyas (2018) and Tri & Dian (2020) who found that audit rotation has no effect on audit quality. Meanwhile, research conducted by Kurnianingsih & Rohman (2014) found that audit rotation has a positive effect on audit quality. Therefore, the hypothesis proposed in this study is as follows:

**H3: Audit rotation have a positive effect on audit quality****3. Methods****3.1. Sample**

The sample used in this research is coal mining companies listed on the Indonesian Stock Exchange (IDX) during the period 2017 to 2021. The method used in determining the sampling in this study is to use a purposive sampling method. In this method the sample is selected deliberately from the population studied and can represent the characteristics of the population with certain criteria.

**3.2. Operational Definition and Variable Measurement****3.2.1. Audit Quality**

Audit quality is the possibility that the auditor when auditing the client's financial statements can find violations that occur in the client's accounting system and report them in the audited financial statements. The audit quality variable is measured using the dummy method, where if the audit opinion issued by the auditor is an unqualified opinion, then it will be given a value of 1 and if the opinion is otherwise, it will be given a value of 0.

**3.2.2. Audit Fee**

Audit fee is the reward received by the Public Accounting Firm after carrying out its audit services in the form of money. The audit fee is measured as the natural logarithm of the audit fees (audit services) received by the Public Accounting Firm.

**3.2.3. Audit Tenure**

Audit tenure is the length of working relationship between the auditor and the client or company audited by the auditor, which can be measured by the number of years. Audit tenure is measured on an interval scale by counting the number of years of engagement in which the same auditor and auditor conduct an engagement. The first year of the audit engagement begins with number 1 and is added by one for the following engagement years.

**3.2.4. Audit Rotation**

Audit rotation is auditor rotation carried out by an entity which is generally due to rules or regulations. Audit rotation is measured using the dummy variable method, where a company that changes auditors will be given a value of 1 and otherwise given a value of 0.

### 3.3. Research Model

To measure the extent to which audit quality is affected by audit fee, audit tenure, and audit rotation for each time the following models are used:

$$\text{QUAL} = \beta_0 + \beta_1\text{FEE} + \beta_2\text{TEN} + \beta_3\text{ROT} + \varepsilon$$

Where:

QUAL = audit quality

FEE = audit fee

TEN = audit tenure

ROT = audit rotation

$\beta$  = regression coefficient

$\varepsilon$  = error term

## 4. Results and Discussion

### 4.1. Statistic Descriptive

Based on Table 4.1, it can be seen that the audit quality variable (QUAL) has an average value of 0.666667. This shows that the majority or 66.67% of the companies sampled in this study were audited by big four auditors. The minimum value of audit quality is 0.0000 while the maximum value is 1.0000. The standard deviation of 4.75383 which is greater than the average value indicates that the sample company's audit quality variable is not homogeneous and has high variability.

Based on Table 4.1, it can be seen that the audit fee (FEE) variable has an average value of 24.59933. This shows that the average Rupiah value of audit fees for the companies sampled in this study is the inverse of 25.59933. The minimum value is 18.51000 and the maximum is 27.47000. The standard deviation value is 2.167589 which is smaller than the average value, indicating that the sample company audit fee variable is homogeneous and has low variability.

Table 4.1 shows that the audit tenure (TEN) variable has an average value of 1.683333, meaning that the average length of relationship between a public accounting firm and the companies sampled in this study is around 1 – 2 consecutive assignments continuously. This shows that on average the audit tenure of the sample companies is shorter when compared to the maximum audit tenure value. The minimum value is 1.0000 and the maximum is 3.0000 indicating that the audit tenure of the companies sampled in this study, the lowest is 1 and the highest is 3. The standard deviation is 0.724666 which is smaller than the average value indicating that the sample company audit tenure variable is homogeneous and has low variability.

From Table 4.1 it can be seen that the audit rotation (ROT) variable has an average value of 0.483333. This shows that at least 48.33% of the companies sampled in this study carried out audit rotation during this research period. Meanwhile, the remaining 51.67% of sample companies did not carry out audit rotation during this research period. The minimum value is 0.0000 and the maximum is 1.0000. The standard deviation of 0.503939 which is greater than the average value indicates that the sample company audit rotation variable is not homogeneous and has high variability.

**Table 4.1 Statistic Descriptive**

	QUAL	FEE	TEN	ROT
Mean	0.666667	24.59933	1.683333	0.483333
Median	1.000000	25.14500	2.000000	0.000000

Maximum	1.000000	27.47000	3.000000	1.000000
Minimum	0.000000	18.51000	1.000000	0.000000
Std. Dev.	0.475383	2.167589	0.724666	0.503939
Observations	60	60	60	60

#### 4.2. Model Feasibility Test (Hosmer and Lemeshow)

Based on the test results, the chi-square probability value from Hosmer and Lemeshow's Goodness of Fit Test, which is shown by the Prob Chi-Sq(8) value in Table 4.2, shows a figure of  $0.0649 > 0.05$ . This means that there is no significant difference between the model and the data, and therefore it can be said that the model can be used to predict the observed values. Thus, it can be concluded that the logistic regression equation can be used to explain the relationship between the independent variable and the dependent variable.

**Table 4.2 Hosmer and Lemeshow's Goodness of Fit Test**

H-L Statistic	18.9897	Prob. Chi-Sq(8)	0.0649
Andrew's Statistic	28.9919	Prob. Chi-Sq(10)	0.0012

#### 4.3. Hypothesis Testing

##### 4.3.1. Effect of Audit Fee on Audit Quality

Based on the results of statistical tests in Table 4.3, it shows that the audit fee (FEE) coefficient is 0.501004. The beta sign or test result coefficient is in accordance with the hypothesis proposed in this study where audit fee has a positive effect on audit quality, so the significance test is continued. The test results show the probability of  $0.0027 < 0.05$  (alpha 5%), so  $H_1$  is accepted. Thus, it is concluded statistically that at the 95% confidence level, audit fee has a positive effect on audit quality.

The results showed that profitability has a positive effect on audit quality. Higher costs will improve audit quality, because the audit fees obtained in one year and the estimated operational costs required to carry out the audit process can improve audit quality. These results are in accordance with research conducted by Qodriyah (2016) which found that audit fees have a positive effect on audit quality.

**Table 4.3 Wald Test**

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-11.70424	4.164879	-2.810223	0.0050
FEE	0.501004	0.166726	3.004951	0.0027
TEN	0.114699	0.791596	0.144896	0.8848
ROT	-0.059542	1.137863	-0.052328	0.9583
McFadden R-squared	0.169195	Mean dependent var		0.666667
S.D. dependent var	0.475383	S.E. of regression		0.429054
Akaike info criterion	1.190971	Sum squared resid		10.308900
Schwarz criterion	1.330594	Log likelihood		-31.729130
Hannan-Quinn criter	1.245585	Deviance		63.458260
Restr. deviance	76.381700	Restr. log likelihood		-38.190850
LR statistic	12.92344	Avg. log likelihood		-0.528819
Prob(LR-statistic)	0.004805			

##### 4.3.2. Effect of Audit Tenure on Audit Quality

Based on the results of statistical tests in Table 4.3, it shows that the audit tenure (TEN) coefficient is 0.114699. The beta sign or test result coefficient is in accordance with the hypothesis proposed in this study where audit tenure has a positive effect on audit quality. The test results show the probability  $0.8848 > 0.05$  (alpha 5%), so  $H_2$  is rejected. Thus, it is concluded statistically that at the 95% confidence level, audit tenure has no effect on audit quality.

The results show that audit tenure has no effect on audit quality. This is because audit tenure cannot fully be used as a comparison or means of measuring audit quality. Long audit tenure does not always affect auditor independence so it cannot reduce audit quality. A short tenure also cannot always determine the reliability of audit quality, because the auditor may not have sufficient knowledge and experience to carry out an audit of the client company. The results of this research are in line with research conducted by Tri & Dian (2020) which found that audit tenure has no effect on audit quality.

#### **4.3.3. Effect of Audit Rotation on Audit Quality**

Based on the results of statistical tests in Table 4.3, it shows that the audit rotation (ROT) coefficient is -0.059542. The beta sign or test result coefficient is not accordance with the hypothesis proposed in this study where audit rotation has a positive effect on tax avoidance. The test results show the probability  $0.9583 > 0.05$  (alpha 5%), so  $H_3$  is rejected. Thus, it is concluded statistically that at the 95% confidence level, audit rotation has no effect on audit quality.

The research results show that audit rotation has no effect on audit quality. Changing auditors can indeed be refreshing, but auditors are not necessarily able to understand the current situation of their client's company and need time to understand the new environment in which they work. The market actually doesn't really care whether the auditor who expresses an opinion on the annual financial report has been rotated or not. The results of this research are in line with research conducted by Darmaningtyas (2018) which found that audit rotation had no effect on audit quality.

### **5. Conclusion**

Based on the test results, this study found that audit fee has a positive effect on audit quality. With greater funding, audit firms can recruit and retain more qualified auditors, provide auditors with better training, and invest in the latest audit technology. This can increase auditor competency and efficiency, which in turn can improve audit quality.

Audit tenure has no effect on audit quality. A long audit period can build a good working relationship between the audit firm and the client. These good relationships can support effective collaboration during the audit, but can also result in conflicts of interest or a lack of required independence.

Audit rotation has no effect on audit quality. During audit rotation, there is the potential for errors or deficiencies in understanding the client's business, which in turn can affect audit quality. New auditors may need time to adapt to the nuances of the client's business, which can result in temporary uncertainty in audit quality.

The results of this study cannot be generalized to all types of industries and countries. The results of this study only apply to coal mining industry listed on the Indonesian Stock Exchange during the observation period. This study uses secondary data from the company's annual report, so there is a possibility that the information obtained does not reflect the actual conditions.

Suggestions for further research are to increase the number of company samples for all industry categories other than the industries sampled in this study. Further research is also expected to broaden the research time horizon by using more comprehensive data in order to obtain better results.

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