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# Institutional investors' effects on audit quality from a UK perspective

Georgios C. Simitsis<sup>\*</sup>, Maria I. Kyriakou<sup>†</sup>

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## Abstract

The monitoring role of institutional investors and its effect on audit quality stimulates further research. The UK market, a well acknowledged market with a stringent regulatory environment and significant institutional investor base, attracted our interest. The purpose of this study is to ascertain the role of institutional investors on audit quality, in a UK setting. We adopt the auditor's opinion (modified vs unmodified) metric as a proxy for audit quality. Our empirical results support the beneficial role of institutional investors in audit quality. We also interpret the relationship of audit quality with audit fees and auditor tenure, when institutional investors are considered. The relationship between audit fees and audit quality seems to be interpreted differently by institutional investors, in contrast to ordinary shareholders. Institutional investors consider audit fees as an outcome of audit effort. In this vein, increased audit fees do not seem to deter auditor independence or suppress audit quality levels. The different perspectives of institutional investors are also witnessed in the case of auditor tenure, albeit not in a statistically significant manner. While tenure is considered as an impediment to auditor independence for the whole sample, institutional investors seem to value the beneficial effects resulting from a long tenure. The empirical results add on the growing body of literature on audit quality determinants. Simultaneously, they complement research on the UK market which receives relative inattention considering its magnitude in world capital markets.

**JEL Classifications:** M41, M42.

**Keywords:** Audit quality, institutional investors, corporate governance, modified audit opinion, auditor independence.

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# 1 Introduction

Auditing is an independent process that provides reasonable assurance on the integrity of firms' financial statements. This process supports resource allocation and efficiency in contracting (DeFond & Zhang, 2014). Audit failures caused serious market turmoil (European Commission, 2010). Market stakeholders were urged to undertake several initiatives oriented towards the improvement of audit quality levels.

Academic research on audit quality and its approximation fostered. DeFond and Zhang (2014), in a seminal work, presented critically the various metrics applied to the approach of audit quality. They suggested a broad categorization between input and output of audit quality measures. In the first category falls the investigation of the auditor/client relationship virtues. Such virtues are the level of the charged audit fees and the length of auditor/client relationship. Output based measures stem mainly from the financial statements and the auditor's report. The most straightforward and influential variable that can apply as an audit quality proxy is the auditor's opinion (Watts & Zimmerman, 1982). A going concern, or a modified audit opinion, is allegedly indicative of auditor independence and considered as a direct measure of audit quality. Similarly, this study adopts the auditor's opinion as an audit quality metric for drawing important inferences.

Market participants seem to value aspects that influence audit quality differently. Regulators impose auditor tenure restrictions, driven by concerns over loss of impartiality and independence (European Commission, 2010). In contrast, academic research overwhelmingly supports that longer auditor tenure is associated with incremental levels of audit quality (Lin & Hwang, 2010). In the same vein, small shareholders seem to oppose long tenures, whereas institutional investors do not share the same opinion (Tanyi et al., 2021).

Ownership virtues seem to be influential to audit quality (Hu et al., 2022). Institutional investors have strong incentives and more resources to monitor company's management (Shleifer & Vishny, 1986). Institutional investors are deemed to have a profound impact on corporate functions and, obviously, in the financial reporting process (Mitra & Cready, 2005). Bushee (1999) suggests that dedicated institutional investors adopt long-term investment strategies, acquire large shareholdings and monitor, closely, management actions.

The purpose of this study is to investigate the impact of major institutional ownership on audit quality. In the same context, empirical testing assesses the potentially different view of institutional investors on certain audit engagement features, namely audit fees and auditor tenure that also exert influence on audit quality. The UK market was opted due to the magnitude of the participation of institutional investors, and to the relative inattention that

it receives in relation to the US counterpart (Basioudis et al., 2008).

The rest of the study is organized as follows. In section 2 the literature review is presented and the research hypotheses are developed. Section 3 comprises the data and the applied methodology of empirical testing, while all results are presented in section 4. Finally, the conclusions are presented in section 5.

## **2 Literature review and hypotheses development**

Audit quality has some unobservable characteristics. Therefore, its approximation is based on a variety of proxies. DeFond and Zhang (2014) introduce a broad categorization into two groups, the input and output-based measures. Input based measures of audit quality are related to auditor features that are attached in the audit process. These comprise auditor size, specialization, tenure and audit fees. On the other hand, output based measures are related to the audit process deliverables such as the auditor's report, the auditor's opinion and market reactions to audit related events.

The auditor's opinion serves as a direct communication channel between the auditor and the market stakeholders. In the US, a going concern opinion reflects the auditor's doubts on the client's ability to continue as a going concern (SAS No 126, AICPA)<sup>[1]</sup>. This kind of opinion is undesirable to the firm (DeFond & Lennox, 2011; Tepalagul & Lin, 2015). In the UK context, a modified audit opinion is issued when the auditor (a) either concludes, based on sufficient audit evidence, that the financial statements as a whole have material misstatements, or (b) is unable to gather sufficient audit evidence to conclude that financial statements lack material misstatements (ISA UK 705, FRC)<sup>[2]</sup>. A modified opinion may cause loss of clients, impediments to financing opportunities and share price decline (Blay & Geiger, 2001). A modified opinion may also lead to auditor switch, a phenomenon referred as 'auditor opinion shopping' (Carey et al., 2008; Newton et al., 2016). The propensity to issue a modified audit opinion identifies a high-quality auditor who is independent, and this result in improved audit quality (Francis & Krishnan 1999; Reynolds & Francis 2001; Fan & Wong 2005).

The relationship between ownership structure and instances of modified opinions attracts research interest (Hu et al., 2022). Institutional investors represent a crucial market participant in capital markets (Dasgupta et al., 2021). Their intermediary role in investing third-party funds makes them be accountable to their clients. Therefore, it is anticipated that they invest in firms that actively monitor (Klettner, 2021). Institutional ownership functions as a monitoring mechanism that deters earnings manipulation (Chung et al., 2002). Institutional investors with large shareholdings and long-term horizon are normally linked to

intense firms' monitoring (Lu et al., 2018; Velte, 2024). Hence, our first hypothesis is formulated accordingly:

H<sub>1</sub>: Major institutional ownership is positively related to audit quality.

Audit quality is also researched under the lens of auditor fees. Audit fees reflect auditor effort. The latter is related to individual firm's characteristics, the sources of risk and business complexity (Knechel et al., 2020). Auditors will require additional compensation if additional auditor effort by them is needed. Hence, audit fees could serve as an independent variable in audit quality research (Engel et al., 2010). However, audit fees are an integral part of the auditor's income sources, and this fact challenges their independence and the quality of their work (Li & Lin, 2005; Abbott et al., 2006). Research indicates that audit fees are higher when institutional ownership increases in the share capital (Cassel et al., 2018). This leads to the second hypothesis:

H<sub>2</sub>: Institutional investors consider the level of audit fees to be positively related to audit quality.

Auditor tenure is another variable in the auditor-client relationship that challenges auditor independence. Auditor tenure is defined as the number of years that a firm's financial statement is audited by the same auditor (Myers et al., 2003). A long business relationship has normally a positive impact, accruing from the learning effect (Mansi et al., 2004). Consequently, auditor tenure and audit quality should be positively related (Lin & Hwang, 2010; Alzoubi, 2018). On the other hand, a long-lasting business relationship may lead to relaxation of auditor scepticism and independence, undermining audit quality levels (Gosh & Moon, 2005). Shareholders seem to be reluctant to vote in favour of extending an audit engagement when tenure is already long (Dao et al., 2008). However, institutional investors adopt a different perspective and do not consider long tenure as a reason to terminate an auditor engagement contract (Tanyi et al., 2021). Hence, the third hypothesis is formulated as follows:

H<sub>3</sub>: Institutional investors consider auditor tenure to be positively related to audit quality.

### 3 Sample and Methodology

#### 3.1 Sample

The sample comprises listed firms in the UK, on the FTSE All Share index. Data pertaining to financial institutions' shares were removed from the sample because they operate in a highly regulated environment and are forced to comply with strict provisions related to corporate governance and financial data disclosures (Fields et al., 2004). A panel data set, spanning the years 2012-2022 was processed. Financial variables were extracted from Datastream database, whereas institutional ownership data were derived from the Bureau Van Dijk Orbis database. We only considered major institutional ownership. In the UK, institutional ownership is considered as major when the institutional investors own at least 3% of the share capital (5% for non-UK issuers), according to the Financial Conduct Authority (FCA) guidelines. The sample selection process is depicted in Table 1.

**Table 1: Sample Selection Process**

	<b>Firms</b>	<b>No. of Observations</b>
Firms listed on FTSE All Share index for the period 2012-2022	2,707	29,777
Less: year observations without financial data		21,754
Less: year observations without data on institutional presence		5,816
Sample for assessing audit quality		2,207
<i>Notes: The sampling period covers the years 2012-2022, and the sample comprises non-financial firms. The financial data were derived from Datastream, whereas institutional shareholdings information was collected from the Bureau Van Dijk Orbis database. OECD (2023) methodology was adopted, to identify institutional investors. Major shareholdings (3% and above) were extracted for the following types of investors provided by Bureau Van Dijk Orbis database: 'A': Insurance, 'B': Bank, 'F': Financial company, 'J': Foundation/Research Institute, 'P': Private equity, 'V': Venture capital and 'Y': Hedge fund 'E': Mutual and pension fund/Nominee/Trust/Trustee.</i>		

#### 3.2 Model Specification & Methodology

Adopting prior literature (Kharuddin et al., 2021) we formulated a probit regression equation to test the three hypotheses. The regression equation is comprised of several control variables, firm and auditor specific, that exert influence on the dependent variable. The regression equation is presented below:

$$MAO = \beta_1 * INST_{j,t} + \beta_2 * AUDFEES_{j,t} + \beta_3 * AUDFEESINST_{j,t} + \beta_4 * AUDTENU_{j,t} + \beta_5 * TENUINST_{j,t} + \sum_{i=6}^n \beta_i * Controls \quad (1)$$

The variables that are included in the regression equation (1) are presented in Table 2.

**Table 2: Variable Description**

<b>Variables</b>	<b>Description</b>
<b>Dependent Variable</b>	
MAO	Dummy variable numbered 1 if the audit opinion is modified and 0 otherwise.
<b>Independent Variables</b>	
INST	Sum of major institutional shareholdings (percentage)
AUDFEES	Natural logarithm of auditor fees
AUFEESINST	Interaction term. Auditor fees on institutional ownership
AUDTENU	Auditor tenure – consecutive years
TENUINST	Interaction term. Auditor tenure on institutional ownership
<b>Control Variables</b>	
CFO	Net cash flow from operating activities scaled by total assets
INVREC	Inventories plus receivables scaled by total assets
LOSS <sub>t-1</sub>	Dummy variable numbered 1 if losses occur in the previous financial year and 0 otherwise.
ROA	Return on assets
FRSALES	Ratio of foreign to total sales
SQRTEMPL	Square root of the number of employees
AUDSIZE	Dummy variable numbered 1 if the auditor is a Big4 and 0 otherwise.

Interaction terms AUDFEESINST, TENUINST are inserted into the model aiming to capture the different perception of institutional investors on the level of audit fees and auditor tenure, respectively. Further, firm specific control variables closely related to risk attributes were imparted in the model. Firms with strong cash flows have lower incentives to engage in earnings management (Gul et al., 2009) and therefore less probability of recording a modified audit opinion. Inventories and receivables (scaled to total assets) and previous year's negative net income are considered as indicative of firm risk (Al-Qadasi, 2024; Sarhan et al., 2019). The foreign to total sales (Mitra et al., 2007) and the number of employees (Han et al., 2013) are variables that pertain to firm complexity and pose challenges to auditors. ROA captures firm profitability and is often included in estimation models (Sarhan et al., 2019). Big 4 auditors are concerned about their reputation and seem to be inclined to issue a modified opinion to secure themselves from litigation and reputational loss (DeFond et al., 1999).

## 4 Results

### 4.1 Descriptive Statistics

Table 3 presents central tendency and distributional metrics for the variables included in the model. The mean (median) value of major institutional ownership for the sample is 20.7% (15%). INST observations are positively skewed. The mean value of AUDFEES is 5.833, whereas there is considerable dispersion of observations as indicated by standard deviation of 1.698. Auditor tenure is measured by consecutive years. The mean (median) value is 8.42 years (8 years). Similarly to the auditor fees variable, there is increased variability in the observations. The standard deviation of AUDTENU is 5.24.

**Table 3: Descriptive Statistics**

	Mean	Median	Max	Min	Std. Dev.	Skewness	Kurtosis
MAO	0.016	0.000	1.000	0.000	0.125	7.751	61.073
INST	0.207	0.150	1.000	0.000	0.204	1.150	3.997
AUDFEES	5.833	5.525	15.710	0.693	1.698	0.697	3.633
AUDFEESINST	1.181	0.857	6.973	0.000	1.188	1.319	4.826
AUDTENU	8.421	8.000	21.000	1.000	5.240	0.308	2.029
TENUINST	1.755	0.885	19.000	0.000	2.378	2.497	11.406
CFO	0.043	0.074	0.639	-3.695	0.227	-7.173	92.378
INVREC	0.286	0.262	0.969	0.000	0.200	0.857	3.465
LOSS	0.284	0.000	1.000	0.000	0.451	0.960	1.922
ROA	0.151	4.800	329.750	436.500	25.164	-4.054	75.559
FRSALES	45.142	43.520	100.000	0.000	39.536	0.090	1.323
SQRTEMPL	63.901	29.967	418.330	0.000	82.232	2.118	7.100
AUDSIZE	0.683	1.000	1.000	0.000	0.465	-0.788	1.621

Correlations are presented in Table 4. Major institutional ownership and auditor tenure are negatively related to modified audit opinion ( $r=-0.031$  and  $r=-0.017$  respectively), although insignificantly. A statistically significant negative relationship occurs between MAO and AUDFEES ( $r=-0.066$ ) questioning auditor independence. Strong cash flows (CFO), profitability (ROA), and the proportion of inventories and receivables on total assets (INVREC) are negatively related to MAO, indicating their beneficial role in firms' fundamentals. On the other hand, negative income is found to be positively related to a firm that receives a modified audit opinion ( $r=0.105$  p value  $<0.01$ ). AUDSIZE is positively related to INST, indicating that firms with major shareholdings seem to prefer the appointment of a Big 4 auditor. This can be either the result of management willingness, or alternatively the institutional investors, through their decisive votes, may direct audit committees towards a Big 4 audit engagement. A strong positive correlation coefficient between AUDSIZE and



AUDFEES ( $r=0.631$   $p$  value  $<0.01$ ) reinforces the argument that Big 4 auditors charge a fee premium.

## **4.2 Regression results**

The results of a probit regression are presented in Table 5. A significant negative coefficient ( $\beta_1=-4.584$ ) for variable INST ( $p$  value  $<0.01$ ) indicates that the more the institutional ownership grows, the less likely for a modified audit opinion to occur. This relationship can be attributed to institutional investor's monitoring role and is consistent with similar findings (Alzoubi, 2016). The first research hypothesis is validated by empirical findings.

In the same vein, the more the auditor fees the less probable is the issuance of a modified audit opinion. The AUDFEES coefficient is negative and statistically significant at all conventional levels ( $p$  value  $<0.01$ ). This finding supports the notion that auditors' independence could be impaired when auditor fees increase. This suggestion is in line with the assertions of Li and Lin (2005) and Abott et al. (2006). However, when institutional ownership is considered in the regression, this relationship changes. The interaction term AUDFEESINST unveils a different perspective for firms with an increase in major institutional ownership. Audit fees are positively related to MAO at all conventional significance levels ( $p$  value  $<0.01$ ). The positive relationship implies that a modified audit opinion requires additional auditor effort (Basioudis et al., 2008). A positive relationship between AUDFEESINST and MAO indicates that auditors are independent and reinforce audit quality. This empirical evidence supports the second research hypothesis.

**Table 4: Spearman Correlation Matrix**

	MAO	INST	AUDFEES	AUDFEES INST	AUDTENU	TENU INST	CFO	INVREC	LOSS	ROA	FRSALES	SQRT EMPL	AUDSIZE
MAO	1.000												
INST	-0.031	1.000											
AUDFEES	-0.066***	-0.016	1.000										
AUDFEESINST	-0.040*	0.973***	0.168***	1.000									
AUDTENU	-0.017	0.007	0.207***	0.047**	1.000								
TENUINST	-0.035*	0.844***	0.081***	0.845***	0.441***	1.000							
CFO	-0.055***	0.010	0.317***	0.059***	0.081***	0.052**	1.000						
INVREC	-0.043**	-0.019	0.025	-0.013	0.067***	0.016	0.047**	1.000					
LOSS	0.105***	-0.009	-0.391***	-0.073***	-0.107***	-0.065***	-0.482***	-0.249***	1.000				
ROA	-0.081***	-0.014	0.305***	0.032	0.071***	0.033	0.730***	0.226***	-0.572***	1.000			
FRSALES	0.010	0.053**	0.196***	0.094***	0.050**	0.066***	0.057***	-0.057***	0.042**	-0.005	1.000		
SQRTEMPL	-0.093***	-0.041*	0.855***	0.114***	0.165***	0.044**	0.390***	0.133***	-0.509***	0.404***	0.056***	1.000	
AUDSIZE	-0.054**	0.051**	0.631***	0.163***	0.187***	0.124***	0.244***	0.075***	-0.319***	0.258***	0.031	0.589***	1.000

Notes: \*\*\* Significant at 0.01 level, \*\* Significant at 0.05level, \* Significant at 0.10 level

Furthermore, AUDTENU is negatively related to MAO, indicating that longer tenures are associated with fewer instances of modified audit opinions. The AUDTENU coefficient ( $\beta_4 = -0.031$ ) implies that individual investors are related with long auditor tenure negatively. This reaction can be attributed to arguments that link long tenure to a loss of auditor's impartiality and independence, and it aligns to regulatory provisions on tenure restrictions (European Commission, 2010). However, when major institutional ownership is considered, the sign of the relevant coefficient changes to positive ( $\beta_5 = 0.095$ ). Institutional investors seem to accept auditor tenure as a variable that does not affect auditor independence and, consequently, audit quality. This conclusion adds to the mainstream literature that supports the positive effects of tenure on audit quality (Lin & Hwang, 2010). Further, it supports the different view of institutional investors when it is compared to common shareholders which is consistent with the findings of Tanyi et al. (2021). Nevertheless, the third hypothesis is not supported at conventional significance levels (p value 0.15).

**Table 5: Regression results – Period 2012-2022**

Variables	Coefficient	Std. Error	z Statistic	Prob.
INST	-4.584***	1.284	-3.570	0.000
AUDFEES	-0.376***	0.057	-6.540	0.000
AUDFEESINST	0.639***	0.243	2.635	0.008
AUDTENU	-0.031	0.022	-1.446	0.148
TENUINST	0.095	0.066	1.439	0.150
CFO	0.480	0.459	1.045	0.296
INVREC	-0.684*	0.398	-1.718	0.086
LOSS	0.194	0.164	1.183	0.237
ROA	-0.004	0.004	-1.017	0.309
FRSALES	0.002	0.002	1.106	0.269
SQRTEMPL	0.001	0.002	0.427	0.669
AUDSIZE	0.171	0.176	0.973	0.331

Notes: \*\*\* Significant at 0.01 level, \*\* Significant at 0.05 level, \* Significant at 0.10 level

The common relationship between financially distressed companies and the increased probability to receive modified audit opinion (Chu et al., 2024) was captured by the model. However, the CFO and LOSS coefficients lack statistical significance. Risk features were

captured by INVREC, which is statistically significant (p value 0.086). Finally, the auditor size variable was imported in the model to capture big auditors' suggested inclination to adopt extreme conservatism and favor modified opinions. This behavior safeguards reputation and minimizes litigation risk (Kaplan & Williams, 2013). However, the empirical results do not support Big 4's extreme conservatism.

## **5 Conclusions**

Research contends that market participants may value variables pertaining to audit quality differently. Institutional investors are a crucial market segment. Their incremental significance is supported by the flourishing asset management industry (Dasgupta et al., 2021). Institutional investors that are characterized by long-term investment horizon and significant values of shareholdings are presumably active monitors of management (Lu et al., 2018; Velte, 2024). Auditing is a monitoring mechanism that provides assurance on the integrity of financial statements. Market stakeholders place great emphasis on audit quality levels. Since audit quality has unobserved virtues, it can only be approximated by various metrics. This study adopts the auditor's opinion proxy for investigating the interaction between audit quality and major institutional ownership. The UK market was chosen due to its significant institutional investor base and importance in terms of capitalization.

Empirical testing was based on a large sample of UK listed firms on the FTSE All Share index, for an eleven-year period (2012-2022). The modified audit opinion was the dependent variable reflecting auditor independence and ultimately, audit quality. Major institutional ownership was calculated according to UK standards (3% of share capital and above). The empirical results support the monitoring role of institutional investors. Major institutional ownership does not seem to coincide frequently with modified audit opinions. Active monitoring leads to better financial reporting and assists auditors in forming their opinion.

The interaction terms employed in the regression equation unveiled the different perspective of institutional investors on the level of audit fees and auditor tenure. While audit fees are perceived to be a threat to independence for the undiversified investor base, institutional investors adopt a different perspective. According to this perspective, the level of audit fees divulges analogous effort and increased audit fees are positively associated with instances of modified audit opinions. This finding reinforces the auditor independence argument and supports ultimately the asserted beneficial implications on audit quality.

Auditor tenure is also differently approached by market participants. While, in general, a

modified audit opinion is less probable as tenure increases, this is not the case when major institutional ownership is considered. Institutional investors seem to advocate the positive effects stemming from longer audit engagements. These effects lead to better audit quality and the auditor's opinion seems to be unbiased. However, this argument does not find statistically significant support.

This study has some limitations. The monitoring role of institutional investors should not be accepted a priori. Self-selection strategies should be considered when we want to link audit quality to institutional ownership. Further research could be oriented towards the inclusion of other corporate governance variables that also exert influence on audit quality levels.

## Notes

[1] American Institute of Certified Public Accountants (AICPA). (2012, December) Statement of Auditing Standards (SAS) No. 126, *The Auditor's Consideration of an Entity's Ability to Continue as a Going Concern*.

[2] Financial Reporting Council (FRC). (2016, June) International Standard on Auditing (UK) (ISA) 705, *Modifications to the Opinion in the Independent Auditor's Report*.

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