The Role of Competition in the Audit Market on Audit Quality and Audit Fees in the Iraqi Stock Exchange

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Abstract

This study examines the impact of competition in the audit market on audit quality and audit fees within the Iraqi Stock Exchange. Audit market competition has been a subject of extensive debate, with conflicting perspectives on whether increased competition enhances or compromises audit quality. Some researchers argue that competition in the audit market lowers audit fees due to economies of scale and intense price competition among audit firms. Others contend that market concentration ensures auditor independence and improves audit quality. This study investigates these claims by analyzing financial data from 34 listed Iraqi companies between 2017 and 2023. Using multiple linear regression models, the study finds a significant inverse relationship between competition in the audit market and audit fees, confirming that increased competition leads to lower audit costs. However, results also indicate that greater competition negatively affects audit quality, suggesting that reduced auditor independence and fee pressure may lower audit rigor. These findings align with studies that highlight the potential risks of excessive market fragmentation in auditing. The study contributes to the literature by addressing gaps in empirical research on Iraq's audit market, which has undergone significant structural changes following market liberalization. Policymakers and regulatory bodies, such as the Iraqi Board of Supreme Audit, should consider mechanisms to balance market competition with maintaining high audit quality. Encouraging consolidation among smaller audit firms and enhancing regulatory oversight may mitigate the adverse effects of excessive competition. Future research should explore the broader implications of audit market competition on corporate governance, financial reporting quality, and investor confidence in emerging markets.

Keywords: Auditor independence, audit market competition, audit fees, audit quality

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1. Introduction

Competition in the audit market means reducing market concentration in the audit sector. Market concentration in auditing refers to the dominance of one or a few audit firms in the audit market. In developed countries, auditing markets are dominated by four major audit firms. This has led to concentration in the audit market [1]. In recent years, policymakers in some developed countries have expressed concerns about the potential effects of market concentration on audit fees, audit quality, and consequently its economic implications [2]. These concerns prompted the U.S. Treasury (2006) and the European Commission (2010) to publish reports recommending a reduction in market concentration in the audit market. They also encouraged audit firms to compete with the four major audit firms. In 2010, the European Commission warned about the excessive dominance of these four firms. This warning led to the implementation of several regulatory mechanisms [3]. Contrary to policymakers' concerns, some researchers believe that market concentration in the audit market leads to a decrease in audit fees and an increase in audit quality. Ernstberger et al. (2023) argue that market concentration in auditing leads to economies of scale and intense competition among other audit firms, resulting in reduced audit fees [4]. Research has shown that there is an inverse relationship between competition in the audit market and audit quality [5]. However, as stated by Florou et al. (2023), the more reputation and market penetration an auditor has, along with greater bargaining power in determining audit fees, the higher their audit fees will be. Based on these findings, there are different perspectives on the impact of competition in the audit market on audit fees and audit quality [6]. However, in some countries, the audit market is highly competitive and consists of small firms. The existence of these small firms incentivizes auditors to offer greater fee discounts to clients for competition. A reduction in audit quality is a consequence of such a competitive environment [2, 7]. Given the contradictory findings of previous research, understanding the relationship between competition in the audit market, audit fees, and audit quality is crucial. Additionally, Duh et al. (2020) have demonstrated that increased competition in the audit market results in higher audit fees [8].

Market concentration in most countries has increased following the consolidation of large audit firms. In Iraq, the market share of the Iraqi Board of Supreme Audit (IBSA) has declined in recent years, and most characteristics of large

auditors do not hold true, according to the institutional theory of audit firm size. Therefore, there is a need for research examining the effect of market structure and concentration on audit markets. In recent years, the Iraqi Board of Supreme Audit (IBSA) has acted as a major auditing institution in the Iraqi audit market. However, competition among other auditing institutions is also observed. Saeed et al. (2023) believe that the monopoly of the auditing market in Iraq has been broken, and intense competition among auditors has emerged. According to Salehi et al. (2022), before the liberalization of the audit market, the IBSA dominated the Iraqi audit market [9]. Wahab et al. (2023) have shown that the level of market concentration in the Iraqi audit market has decreased after the liberalization of the audit market, leading to a significant decrease in the market share of the auditing organization [10]. Several studies have been conducted on market concentration in the audit market, yielding contradictory results and indicating empirical evidence gaps. Wang et al. (2023) demonstrated that there is no significant relationship between competition indicators in the audit market and audit quality [11]. According to Willekens et al. (2023), competition in the audit market has a significant negative relationship with audit fees. They concluded that there is no significant relationship between competition indicators in the audit market and audit quality [1]. van Raak (2020) found that increasing the market share of auditing institutions does not improve audit quality [12]. Suwarno (2020) showed that increasing competition in the audit market leads to a decrease in auditor independence [13]. Pan's (2023) findings indicate a significant relationship between audit quality and the size of auditing institutions [14].

Based on the conducted research, positive, negative, or no relationship between market concentration in the audit market and audit fees is possible. Several examples of the positive impact of market concentration on audit fees are mentioned. Frino et al. (2023), through a study conducted in Australia between 1996 and 2007, concluded that audit fees increased during periods when only four or five large auditing institutions operated in the audit market compared to periods when six large institutions were active, with the increase being more significant for smaller clients [15]. Some researchers have shown that after the collapse of the Arthur Andersen auditing firm, the market power of the remaining four large auditing institutions increased. This led to a decrease in competitive motivation among clients through price competition, indirectly indicating a positive

relationship between market concentration in the audit market and audit fees [16]. Barua et al. (2020) found an inverse relationship between audit market competition and audit fees using a sample of companies from 17 countries. They also demonstrated that after the collapse of the Arthur Andersen auditing firm, audit fees for all clients experienced a significant increase [17]. According to Calderon et al. (2021), following the Enron scandal in 2002, audit fees and the ratio of audit fees to clients' assets increased [18]. Wen et al. (2023) argued that despite previous studies providing contradictory evidence on the relationship between audit market competition and audit fees, their research showed a significant relationship between audit market competition and audit fees [19]. Other research results indicate a positive impact of audit market competition on audit fees. From the perspective of classical microeconomic theory, increased competition in the audit market strengthens the bargaining power of service providers and increases audit fees [20]. Additionally, market concentration in the audit market reduces auditors' risk of losing clients, increases their bargaining power, and enables them to set audit service prices [21].

In sum, given the presence and dominance of auditing organizations in the Iraqi audit market and the large number of small auditing firms, the aim of this study is to investigate the impact of competition in the audit market on audit fees and audit quality considering the existing competitive conditions in the audit market. The motivation of this research is to expand the theoretical foundations related to competition in the audit market and clarify its impact on audit fees and audit quality using other quality measurement criteria, which have not been examined in previous domestic studies [9]. It is expected that the results of this study could provide insights for regulators, especially the Securities and Exchange Commission, encourage small auditing firms in Iraq to consolidate, and medium-sized auditing firms to engage in activities that enable them to compete with large firms and enhance audit quality. According to what has been discussed, the following hypotheses were considered:

H1: Audit market competition affects audit fees.

H 2: Audit market competition affects audit quality.

2.   Methodology

The present research is applied in terms of its objective and semi-experimental in terms of research methodology. The reasoning method in this study is comparative and inductive. The current research, theoretically, belongs to the category of confirmatory research, and statistically, it falls under descriptive and correlational research types, utilizing multiple linear regression for hypothesis testing. In order to test the hypotheses, data related to the financial reports of companies have been extracted from the Iraq Stock Exchange website, the final statistical sample was established based on the information in Table 1.

Table 1. The number of companies

Companies Listed on the Iraqi Stock Exchange	Number of Companies
Total number of companies	136
Companies or Banks for which the required information for this research is not available.	(52)
Companies or Banks that became members of the Iraq Stock Exchange after 2017	(26)
Banks	(24)
Total sample	34

Basic information and basic data for hypothesis testing are acquired using the Iraqi Stock Exchange database. The data analysis approach is cross-sectional and year-to-year (e.g., data panel). The multivariate linear regression method has been utilized to test the hypotheses, and descriptive and inferential statistical methods have been employed to examine the produced data. Therefore, the frequency distribution table is exploited to describe the data. At the inferential level, the F-Limer test, the Hussmann test, the normality test, and the multiple linear regression tests are employed to test the research hypotheses.

The 34 samples, resulting in a total of 238 observations for company years, considering the research period.

Equation (1) was used to test Hypothesis 1, and Equation (2) tested Hypothesis 2.

Model 1.

$LN\_AF_{it} = \beta 0 + \beta 1 COM_{it} + \beta 2 SIZE\_it + \beta 3 LEV_{i,t} + \beta 4 STD\_RET_{i,t} + \beta 5\ RECTA_{it} + \beta 6\ ADJ\_RET_{it} + \beta 7\ ROA_{it\,it} + \beta 8\ BIG_{it} + \beta 9\ SPFIRM_{it} +$

$\beta 10$ FIRM TENURE $_{it} + \beta 11$ LOSS $_{it} + \beta 12$ INVTA $_{it} + \sum year + \sum IND + \varepsilon_{i,t}$

Model 2:

$AudQulity_{it} = \beta 0 + \beta 1 COM_{it} + \beta 2 LN\_MV\_it + \beta 3 BM_{i,t} + \beta 4 BETA_{i,t} + \beta 5\ CFO_{it} + \beta 6\ OWNER_{it} + \beta 7\ LEV_{it\,it} + \beta 8\ BIG_{it} + \beta 9\ SPFIRM_{it} +$

$\beta 10$ FIRM TENURE $_{it} + \beta 11$ B_IND $_{it} + \beta 12$ LOSS $_{it} + \sum year + \sum IND + \varepsilon_{i,t}$

(1)

(2)

Table 2. Research variables

Variable name	variable symbol	Variable type	measure
Audit market competition	COM	Independent	$-\left(\frac{Audit\ fees}{The\ total\ audit\ fees\ in\ the\ industry}\right)^2$
Audit fees	LnAF	Dependent	The natural logarithm of company audit fees
AudQulity	Dacc	Dependent	Negative absolute value of accruals (adjusted Jones model)
Firmsize	SIZE	Control	Natural logarithm of total assets at the end of the year
Leverage	LEV	Control	The ratio of total liabilities to total assets at the end of the year
standard deviation of returns	STD_RET	Control	Standard deviation of daily stock returns
accounts receivable to assets	RECTA	Control	The ratio of accounts receivable to total assets at the end of the year
Annual return	ADJ_RET	Control	The annual return on the owner's stock minus the annual market return
Return on assets	ROA	Control	
Big audit institute	BIG	Control	Auditing or from auditors with the Iraqi Court of Accounts, number 1 and otherwise, number zero
Auditor industry expertise	SPFIRM	Control	If the special audit institute in a specific industry is more than 10% of the total assets of all the owners in this industry, the number is 1, and otherwise, the row number
Auditor tenure	FIRM TENURE	Control	The number of years the auditor has been in charge of auditing the company
loss	LOSS	Control	It is a dichotomous variable. If the employer has recognized a loss for two consecutive years, the number is 1, otherwise, the number is zero
inventory to assets	INVTA	Control	The ratio of inventories to total assets at the end of the year
Market value	LN_MV	Control	The natural logarithm of the market value of equity at the end of the year
Book value on the market	BM	Control	Book value of shares divided by market value of shares at the end of the year
Systematic risk	BETA	Control	Systematic risk that is calculated using the CAPM model
Operating cash flow	CFO	Control	Operating cash flow divided by total assets at the end of the year
Concentration of ownership	OWNER	Control	Ownership percentage of institutional shareholders
board Independence	B_IND	Control	The number of non-commissioned directors in the board of directors divided by the total number of board directors

3. Findings and Results

This study employed two models to analyze the relationship between Audit market competition and audit fees and audit quality. The panel data consists of 34 Iraqi

companies from 2017 to 2023. The following variables are utilized to estimate the models. The variables include Audit market competition, audit fees, audit quality and other control variables.

Tables below presents descriptive statistics related to the quantitative variables of the study indicate descriptive parameters for each variable separately. If the calculated Herfindahl index is close to 1, it indicates a higher concentration in the audit market, and if it is close to 0, it indicates the absence of concentration in the audit market.

The lower the value of this index, the more competition there is in the market, so its value is multiplied by negative one to have a direct relationship with competition in the market. In this regard, the mean and median of the audit market concentration variable are equal to -0.278 and -0.165, respectively. The minimum value of this variable is -1.0000. In other words, during the study period, there were companies whose audit firms had the highest market concentration

Table 3. Descriptive statistics of main variables companies

Variable	Mean	Std.dev	Median	Min	Max
COM	-0.278	0.260	-0.165	-1.000	-0.075
LnAF	9.437	0.691	9.406	8.094	11.844
Dacc	-0.112	0.092	-0.082	-0.347	-0.007
SIZE	21.456	1.202	21.056	19.546	26.898
LEV	0.331	0.231	0.255	0.012	1.135
STD_RET	0.029	0.040	0.012	0.013	0.062
RECTA	0.223	0.146	0.167	0.007	0.572
ADJ_RET	0.187	0.654	0.029	-0.633	1.924
ROA	0.056	0.102	0.043	-0.345	0.898
FIRM TENURE	3.613	3.431	3.000	1.000	7.000
INVTA	0.246	0.126	0.225	0.076	0.508
LN_MV	20.432	1.356	20.352	18.502	27.023
BM	0.489	0.202	0.432	0.087	1.086
BETA	0.690	0.792	0.600	-0.594	2.340
CFO	0.1505	0.040	0.143	-0.085	0.469
OWNER	0.604	0.306	0.699	0.000	0.789
B_IND	0.671	0.172	0.600	0.000	1.000

Table 4. Descriptive statistics of qualitative variables

Variable(`Companies)	Status	Frequency	Percentage %
Loss	0	153	64.29
	1	85	35.71
	Total	238	100.00
BIG	0	104	43.70
	1	134	56.30
	Total	238	100.00
	0	161	67.64

SPFIRM	1	77	32.36
	Total	238	100.00

Table 5 presents the Levin, Lin Vecho's unit root test for the analysis of stability. All variables are stable, as illustrated by the fact that the significance level is less than 0.05 in the table above.

Table 5. The results of Levin, Lin Vecho's unit root

Variable	p-value
COM	0.000
LnAF	0.000
Dacc	0.023
$SIZE$	0.000
LEV	0.000
STD_RET	0.000
RECTA	0.000
ADJ_RET	0.000
ROA	0.000
FIRM TENURE	0.000
INVTA	0.034
LN_MV	0.000
BM	0.000
$BETA$	0.000
CFO	0.000
OWNER	0.000
B_IND	0.000
Loss	0.016
BIG	0.000
SPFIRM	0.000

This study employed the Durbin and Wu–Hausman test to test endogeneity. The results of this test for research equations are reported in Table 6. Since the p-value is larger than 0.05, there is no endogeneity for the all models.

Table 6. Results of Durbin–Wu–Hausman test

Equation	Test	X^2	p-value	Result
1	Durbin	$\chi^2 = 1.789$	0.453	H0 is rejected (there is no endogeneity)
	Wu-Hausman	F=0.921	0.522	H0 is not rejected (there is no endogeneity)
2	Durbin	$\chi^2 = 0.389$	0.796	H0 is rejected (there is endogeneity)
	Wu-Hausman	F=0.224	0.812	H0 is rejected (there is endogeneity)

In accordance with the integration test results in Table 7, the null hypothesis of data integration at the 99% confidence level is rejected. Therefore, a panel data model should be utilized to estimate the coefficients of these models.

Table 7. The results of pooling.

Equation	F Statistic	p-value
1	2.998	0.000

2	6.334	0.000

In Table 8 the Hausman test statistic is 42.541 and 36.102. For the both research model, since the table's is less than and the null hypothesis (i.e., the proper model is the random effect model) is rejected, the efficient model is the Fixed-effects model.

Table 8. The results of the Hausman test

Equation	χ^2 Statistic	p-value
1	42.541	0.000
2	36.102	0.000

Table 9. The results of the first model

Variable (BF)	Equation (1):				
	Companies				
	Coef	Std. Err	Statistic t	Prob	VIF
COM	-0.226***	0.002	-4.162	0.000	1.424
SIZE	0.563***	0.022	18.999	0.000	1.321
Lev	-0.178***	0.003	-2.895	0.004	1.231
STD_RET	-0.001	0.003	-0.219	0.826	1.367
RECTA	0.050	0.018	0.743	0.457	1.083
ADJ_RET	0.024***	0.033	8.432	0.000	1.137
ROA	-0.873***	0.032	-11.792	0.000	1.231
BIG	-0.061***	0.001	-7.639	0.000	1.069
SPFIRM	-0.006***	0.012	-0.231	0.812	1.083
FIRM TENURE	-0.005	0.023	-0.159	0.873	1.089
LOSS	0.129***	0.004	3.454	0.000	1.148
INVTA	0.331	0.004	3.316	0.000	
_cons	0.400	1.180	0.340	0.735	----
FStatistic	69.26(0.000)				
R^2	0.954				
Adjusted R^2	0.945				
Durbin-Watson Statistic	2.412				
AIC	768.21				

*, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

As Table 9, the coefficient and probability values of the competition variable in the audit market model (1) are equal to -0.2266 and 0.0000 respectively. The negative sign of this variable's coefficient indicates an inverse relationship between the competition variable in the audit market and audit fees. This coefficient value implies that for a unit increase in the competition variable in the audit market, audit fees decrease by 0.2266 units. Additionally, the probability value indicates the significance of this relationship; therefore, the first hypothesis of the research is confirmed. In other words, market concentration in the audit market reduces audit fees. Furthermore, the probability value of the F statistic is equal to 0.0000, indicating the overall significance of model (1). The determination coefficient and adjusted determination coefficient for model (1) are 0.9543 and 0.9405 respectively. Hence, it is concluded that

approximately 94% of the variation in the dependent variable (audit fees) is explained by the independent variables in model (1). According to the results of the

Variance Inflation Factor (VIF) test, there is no linear relationship among the independent variables.

Table 10. The results of the second model

Variable (BF)	Equation (1):				
	Companies				
	Coef	Std. Err	Statistic t	Prob	VIF
COM	-0.031***	0.002	-2.428	0.015	1.183
LN_MV	-0.010***	0.022	-3.104	0.002	1.261
BM	-0.068***	0.003	-6.322	0.000	1.231
BETA	-0.017	0.003	-0.737	0.461	1.367
CFO	0.004	0.018	1.033	0.301	1.083
OWNER	0.011	0.033	1.328	0.184	1.137
LEV	0.007	0.032	0.398	0.690	1.231
BIG	0.019	0.001	3.265	0.001	1.069
SPFIRM	-0.010	0.012	-1.414	0.158	1.083
FIRM TENURE	0.001	0.023	0.191	0.848	1.089
B_IND	-0.002	0.004	-0.132	0.894	1.148
LOSS	0.004	0.004	1.043	0.297	1.548
_cons	0.400	1.180	0.340	0.735	----
FStatistic	6.045(0.000)				
R^2	0.339				
Adjusted R^2	0.316				
Durbin-Watson Statistic	1.960				
AIC	567.33				

*, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

As Table 10 ,The results of the second hypothesis test of the research are presented in figure (7). The coefficient value and probability of the competition variable in the audit market model (2) are -0.031 and 00.015 respectively. Since the probability value of this variable is less than 0.05, this variable will have a significant effect on the dependent variable (audit quality). Additionally, the negative sign of this variable's coefficient indicates that competition in the audit market has an inverse effect on audit quality. Specifically, when competition in the audit market increases by one unit, audit quality decreases by 0.031 units. Consequently, the second hypothesis of the research is confirmed. In other words, market concentration in the audit market reduces audit quality. The probability value of the F statistic indicates the overall significance of the model. The adjusted determination coefficient for this model is 0.316, representing the amount of explanation of the dependent

variable (audit quality). According to the results of the Variance Inflation Factor (VIF) test, there is no linear relationship among the independent variables.

4. Discussion and Conclusion

In the early years of the last decade, the monopoly of the auditing labor market was broken, intense competition among auditors emerged, and the market share of auditing organizations decreased. It is possible that the concentration of the audit market in Iraq on the Court of Audit of Iraq and one or two other institutions leads to reduced competition among these large institutions, increasing their market share. This may lead to non-competitive audit fees and ultimately a decline in audit quality. Therefore, this study examines the impact of audit market competition on audit fees and audit

quality considering the competitive conditions in the audit market. In this regard, two perspectives have been proposed.

In the first perspective, increased competition in the audit market leads to economies of scale and intensified competition among other auditing institutions, resulting in lower audit fees and increased audit quality. This perspective aligns with the prior findings [2, 3, 9, 15, 20-24].

Examining the second hypothesis, competition in the audit market leads to a reduction in audit quality. This finding is consistent with the prior research [1, 2, 7, 8, 10-12, 15, 16, 18-20, 22, 25]. Given the results of studies indicating a decrease in audit fees and audit quality due to competition in the audit market, regulators, including the Court of Audit of Iraq, are recommended to monitor and ensure auditor independence, ethical competition, and audit quality. Additionally, formal accounting bodies and auditing organizations are advised to establish mechanisms to reduce the likelihood of audit market disruptions. Furthermore, company boards and shareholders are urged to prioritize auditor independence, quality, and reputation when selecting auditors, rather than solely focusing on audit fees, to safeguard the company's interests and ensure the quality of financial reporting.

Considering the limited research on audit market competition in Iraq, it is recommended to investigate the impact of audit market competition on auditor turnover, selection of industry-specialized auditors, internal control quality of companies, performance, and corporate reputation, including corporate social responsibility disclosures.

Authors' Contributions

Authors equally contributed to this article.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

All procedures performed in this study were under the ethical standards.

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