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THE IMPACT OF OWNERSHIP STRUCTURE ON EXTERNAL AUDIT QUALITY: A COMPARATIVE STUDY BETWEEN EGYPT AND SAUDI ARABIA

Abstract

This study aims to compare the impact of the ownership structure as one of the essential internal mechanisms of governance on the proxies of external audit quality on a sample of 82 listed Egyptian companies and 77 listed Saudi companies from 2014 to 2021, employing the OLS regression analysis. The current study found mixed results according to the type of ownership and indicators of the external audit quality, both in Egyptian and Saudi companies. The results showed a significant effect of board ownership, management ownership, and family ownership on audit quality. However, the direction of this effect varied between positive or negative in Egyptian or Saudi companies, and the effect was sometimes insignificant. On the contrary, the results showed an insignificant effect of government ownership on audit quality in Egyptian and Saudi companies, or the effect was sometimes significant. The study results may help investors and stakeholders understand the ownership structure's role as one of the internal governance mechanisms on audit quality. Studies show the effectiveness of governance mechanisms, whether internal or external, according to the institutional environment from one country to another. It also contributes to the use of various indicators to measure the quality of auditing and the quality of financial reports, such as returning the financial statements as an indicator of financial reports and an indicator of audit quality at the same time.

Keywords

ownership structure, audit fees, Big 4, restatement, specialization, external audit quality

JEL Classification

M40, M41, M42, M48

INTRODUCTION

Corporate governance is a meaningful way to limit the opportunistic behavior of management and protect the interests of shareholders. Firms' failures have led to many fundamental corporate governance and audit quality issues. External auditors perform an essential function within corporate governance systems because they should fill the gap between managers and shareholders. It is also considered a management control mechanism because it enhances the quality of financial reports and protects the interests of investors (Qawqzeh et al., 2021). More specifically, the types of ownership structure determine the levels of control and monitoring in firms and affect the risk environment, since different types of ownership have different levels of control based on the objectives and voting rights of those shareholders.

On the other hand, investors need to be sure that their decisions are based on reliable information, whereas an external auditor plays a role in providing this assurance. Thus, the demand for audit quality is a consequence of the information asymmetry between owners and managers (Khairallah et al., 2014). Since the nineties of the previous

century, the failure of many firms and the collapse of global markets led to the emergence of corporate governance with internal and external mechanisms. One of the essential factors of failure in these firms is the weakness of internal control, which led to more manipulation and fraud in these firms, where auditing had a large share in the collapse of these firms due to the poor audit quality. One of the most critical internal governance mechanisms is the ownership structure, which has a significant impact on the firm's management and decisions that can be in the firm's interest or the interest of certain parties.

On the other hand, external auditing is one of the most critical external mechanisms of governance, limiting the opportunity for management to manipulate, as an independent external source of control and monitoring and an intermediary party between the management and all stakeholders. Several studies in the accounting literature dealt with the internal and external mechanisms of governance, which generally aim to reduce the opportunistic behavior of management. The external auditors are considered one of the most critical external mechanisms of governance that reduce conflict of interests between managers and owners. Those studies have indicated that audit quality reduces conflict between management and shareholders (e.g., Mustapha & Ahmad, 2011; Kheirollahet al., 2014). On the other hand, the ownership structure is an essential internal mechanism for governance that reduces the conflict of interests between managers and shareholders. Several studies concluded that the dispersion of the ownership structure among many shareholders leads to an increase in the conflict between management and shareholders, thus increasing the influence of managers on the decision-making process – conflict of interest between management and shareholders (e.g., Akhidime, 2015; Qawqzeh et al., 2021; Guizani & Abdalkrim, 2021). In addition, some studies revealed that the concentration of ownership for large shareholders leads to personal relationships between management and significant shareholders, which helps managers manage earnings for the benefit of significant shareholders at the expense of small shareholders. Thus, ownership concentration is considered an internal governance mechanism that affects audit quality (e.g., Al Rassas & Kamardin, 2016; Guizani & Abdalkrim, 2021).

Many studies investigated the relationship between the structure of ownership and the quality of external audits. However, the results were mixed, whether conducted in developed or developing countries or according to the extent of legal protection for investors in each country.

Therefore, this study attempts to answer the following questions:

1. Does the impact of the ownership structure on audit quality differ according to the prevailing type of ownership?
2. Does the impact of the ownership structure on audit quality differ in Egyptian firms from Saudi firms?
3. Does the impact of the ownership structure on audit quality differ according to the indicator used to measure audit quality?

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

1.1. Corporate governance

Egypt has begun establishing rules that maintain the implementation of corporate governance practices. The Egyptian Stock Exchange issued rules obligating listed companies with guidelines related to members

of a company's Board of directors and audit committees. It announced the decision issued in 2011 obligating Egyptian companies to disclose information about the Board of directors and ownership structure every three months. In addition, in 2014, the listing rules required each company to publish information regarding forming an audit committee, directors' Board, and the ownership structure in the annual management report (El-Dyasty & Elamer, 2021). In Saudi Arabia, the concept of governance began to appear clearly when the Saudi Capital Market

Authority issued a decision that companies should follow the standards of corporate governance.

On the other hand, a corporate governance regulation provides the rules and standards that ensure compliance with the best corporate governance practices and protect the rights of shareholders and stakeholders. So, The Saudi Arabian Monetary Agency has regulations for corporate governance listed for the banking and insurance sectors, including the insurance companies' rule issued by the General Department for Supervision of Insurance Companies in the Corporation, as well as the main principles of corporate governance in banks operating in the Kingdom of Saudi Arabia issued by the General Department for Banking Supervision. The Capital Market Authority revealed that the Kingdom had achieved remarkable progress in the indicators related to the financial market in the Global Competitiveness Report issued by the World Economic Forum for 2019. However, the Kingdom ranked 36th this year compared to 39th in the 2018 report. The complexity of the relationship between the ownership structure and audit quality is clear from the above, as indicated by the results of the conflicting and inconclusive studies (Awsat, 2020).

1.2. Audit quality

Several studies investigate the determinants and consequences of audit quality. The commonly used proxies for audit quality can be output-based and input-based. Output-based measures typically cover material restatements, going concern opinions, financial reporting characteristics, perception-based measures, such as the earnings response coefficient, stock price reactions to auditor-related events, and cost of capital measures. Input-based proxies refer to auditor-specific characteristics and auditor fees (Rajgopal et al., 2021). Thus, Audit fees are used as a proxy for the level of auditor effort. Fees capture both demand and supply factors associated with audits. The other proxy is when a company is audited by an extensive firm audit (Big 4) because it can provide higher quality than a small firm audit.

1.3. Board ownership

Agency theory recognizes that the ownership of board members reduces the conflict of interests between management and shareholders, given that

board ownership is a motive for effective control of management activities and the financial process in general. So, the members of the Board of Directors will be more effective in their demand for more disclosure and transparency in the financial statements. Therefore, it is expected that the ownership of board directors will improve the quality of financial reports by requesting a high-quality audit (Qawqzeh et al., 2021). Therefore, this form of ownership can improve the quality of financial reporting by increasing the demand for higher-quality external audits. Despite this, the results of the studies were mixed. Some studies have found that board ownership positively affects audit quality (e.g., Sori & Mohamad, 2008; Akhidime, 2015). Other studies found that the boards' ownership negatively affects the quality of the audit (e.g., O'Sullivan, 2000). In another study, Soliman and Abd Elsalam (2012) showed that the ownership of board members has an impact on audit quality.

1.4. Managerial ownership

The ownership held by managers can align the current interests between agents and owners. This ownership of executives reduces the conflict of interest between managers and shareholders, as personal interests are parallel between the two parties. On the other hand, management ownership can reduce the independence of the Board by focusing managers on their interests and reducing the effectiveness of corporate governance mechanisms, as it reduces the monitoring role of the Board and thus leads to the use of lower quality external auditors. However, previous studies have revealed different and mixed evidence on the relationship between management ownership and audit quality. For example, Mustapha and Ahmad (2011) found a negative impact on overall monitoring and control costs. Thus, the greater the managers' ownership, the lower the audit quality because those managers can obtain private information and maintain the firm's resources appropriately. More specifically, O'Sullivan (2000) and Park (2019) reported a negative impact of the ownership by the managers on the audit quality.

Contrary to the previous study, Qawqzeh et al. (2019) found that managerial ownership negatively affects financial reporting quality because high managers' ownership increases earnings management and reduces audit quality.

1.5. Family ownership

Family owners play an essential role in reducing agency problems, assuming no conflict of interest between them and other owners. On the other hand, family owners can play an adverse role that can harm the interests of other owners and increase conflict of interest and agency costs, which increases the need for a quality audit that protects the interests of other owners (Qawqzeh et al., 2021). When family ownership increases, family owners dominate higher positions and seek to achieve their interests opportunistically (Azoury and Bouri, 2015; Niskanen et al., 2010). There is a broad argument about the effect of the ownership structure as one of the internal mechanisms of corporate governance on audit quality.

There are mixed results in the literature regarding the effect of family ownership on audit quality. Some studies have shown a negative effect on audit quality. For example, Eulaiwi et al. (2016) clarified that the family owners use their influence to enhance their voting power and interfere in board selection and members. This weakens the quality and effectiveness of governance, leading to low-quality external auditors, which leads to a decrease in the quality of financial reports to hide their opportunistic behavior. Niskanen et al. (2011) indicated that family firms do not want to monitor their behavior, so they are not keen on hiring a high-quality external auditor.

On the other hand, Cascino et al. (2010) and Gaaya et al. (2017) revealed a positive association between family ownership and audit quality. However, Ho and Kang (2013) emphasized that family firms incur lower fees than non-family firms, as they do not tend to pay high audit fees, especially since the owners of these firms monitor the firm's activities themselves. They showed an insignificant relationship between family ownership and audit quality.

1.6. Government ownership

Government ownership can play a vital role in the effectiveness of the Board of directors, as the function of the Board of governmental firms dif-

fers from private firms, where governmental firms focus on achieving goals whereas private firms focus on profits (Guizani & Abdalkrim, 2021). Some studies indicated that governance characteristics are ineffective in governmental firms (e.g., Guizani & Abdalkrim, 2021). Boards of directors are less independent, as governments focus on achieving political goals at the expense of maximizing profits. Chen et al. (2011) argued that the directors nominated by the government control all aspects of decision-making without proper monitoring, and thus those directors choose non-independent board members. Guizani and Abdalkrim (2021) indicated that firms with high government ownership have a greater incentive to maintain their political interests and thus hire low-quality auditors.

According to the preceding, this study aims to investigate the impact of the diversity of the ownership structure on the quality of the external audit and compare this effect on two Arab countries on two different continents, namely Egypt and Saudi Arabia.

The following research hypotheses can be derived as follows:

H1: Board ownership positively affects audit quality in Egyptian and Saudi firms.

This hypothesis can be divided into four sub-hypotheses:

H1a: Board ownership positively affects audit fees in Egyptian and Saudi firms.

H1b: Board ownership positively affects audit firm size in Egyptian and Saudi firms.

H1c: Board ownership negatively affects restatement reporting in Egyptian and Saudi firms.

H1d: Board ownership positively affects industry specialization in Egyptian and Saudi firms.

H2: Managerial ownership negatively affects audit quality in Egyptian and Saudi firms.

This current hypothesis can be divided into four sub-hypotheses:

H2a: Managerial ownership negatively affects audit fees in Egyptian and Saudi firms.

H2b: Managerial ownership negatively affects audit firm size in Egyptian and Saudi firms.

H2c: Managerial ownership positively affects restatement reporting in Egyptian and Saudi firms.

H2d: Managerial ownership negatively affects industry specialization in Egyptian and Saudi firms.

H3: Family ownership negatively affects audit quality in Egyptian and Saudi firms.

This current hypothesis can be divided into four sub-hypotheses:

H3a: Family ownership negatively affects audit fees in Egyptian and Saudi firms.

H3b: Family ownership negatively affects audit firm size in Egyptian and Saudi firms.

H3c: Family ownership positively affects restatement reporting in Egyptian and Saudi firms.

H3d: Family ownership negatively affects industry specialization in Egyptian and Saudi firms.

H4: Government ownership positively affects audit quality in Egyptian and Saudi firms.

This current hypothesis can be divided into four sub-hypotheses:

H4a: Government ownership positively affects audit fees in Egyptian and Saudi firms.

H4b: Government ownership positively affects audit firm size in Egyptian and Saudi firms.

H4c: Government ownership negatively affects restatement reporting in Egyptian and Saudi firms.

H4d: Government ownership positively affects industry specialization in Egyptian and Saudi firms.

2. DATA DESCRIPTION AND METHODOLOGY

2.1. Research design

The study sample was drawn from firms listed on the Egyptian and Saudi Stock Exchanges in various sectors, excluding the banking and insurance sectors due to their different nature, conditions, and characteristics. The study's final sample consisted

Table 1. Distribution of the sample

Sector	Observations	Percentage
Egyptian observations		
Basic Resources	64	9.76%
Food, Beverages, and Tobacco	112	17.07%
Health Care & Pharmaceuticals	96	14.63%
Industrial Goods, Services, and Automobiles	32	4.88%
I.T., Media & Communication Services	32	4.88%
Real Estate	96	14.63%
Travel & Leisure	48	7.32%
Utilities	8	1.22%
Energy & Support Services	8	1.22%
Trade & Distributors	16	2.44%
Shipping & Transportation Services	16	2.44%
Education Services	16	2.44%
Contracting & Construction Engineering	32	4.88%
Textile & Durables	24	3.66%
Building Materials	40	6.10%
Paper & Packaging	16	2.44%
Total	656	100%

Table 1 (cont.). Distribution of the sample

Sector	Observations	Percentage
Saudi observations		
Energy	16	2.60%
Materials	144	23.38%
Capital Goods	56	9.09%
Commercial & Professional Svc	16	2.60%
Transportation	24	3.90%
Consumer Durables & Apparel	24	3.90%
Consumer Services	40	6.49%
Media and Entertainment	16	2.60%
Retailing	40	6.49%
Food & Staples Retailing	32	5.19%
Food & Beverages	64	10.39%
Health Care Equipment & Svc	48	7.79%
Software & Services	16	2.60%
Telecommunication Services	24	3.90%
Utilities	16	2.60%
Real Estate Mgmt & Dev't	40	6.49%
Total	616	100%

of 82 Egyptian firms with 656 observations and 77 Saudi firms with 616 observations from 2014-to 2021. Table 1 shows the various industry sectors that were included in the sample. The study focused on the income statement, the balance sheet, and the statement of cash flows. This annual data matching in different periods were adopted from Guizani and Abdalkrim (2021), Qawqzeh et al. (2020), and Rajgopal et al. (2021). Table 1 shows the sample distribution over

the period 2014–2021. The study sample consisted of 16 different sectors of Egyptian or Saudi firms.

2.2. The study variables and research models

This study used SPSS software to verify the study variables and examine the developed hypotheses. The dependent variable is audit quality, measured

Table 2. The study variables and measurement of each variable

Variable	Measurement	Supporting literature
Dependent variables		
Audit fees	Natural logarithm of audit fees	Qawqzeh et al. (2020)
Audit firm size	An indicator variable that = one if the audit firm is a Big 4 firm and = 0 otherwise.	Rajgopal et al. (2021)
Restatement	An indicator variable that = one if the financial statement for the alleged audit-deficient firm-year was restated and = 0 otherwise.	Rajgopal et al. (2021)
Industry specialization	An indicator variable that = 1 if auditor is specialized, and = 0 otherwise	Qawqzeh et al. (2020)
Independent variables		
Board ownership	Percentage of members' ownership on the Board	Qawqzeh et al. (2020) and Guizani et al. (2021)
Managerial ownership	Percentage of top managers' ownership	Qawqzeh et al. (2020) and Guizani et al. (2021)
Family ownership	Percentage of shares owned by families	Qawqzeh et al. (2020) and Guizani et al. (2021)
Government ownership	Percentage of shares owned by the government	Guizani et al. (2021)
Control variables		
Size	L.N. of the firm's total assets.	Qawqzeh et al., (2020) and Rajgopal et al., (2021)
Return on assets	Return on assets is calculated as net income before taxes and extraordinary items divided by total assets.	Qawqzeh et al., (2020) and Rajgopal et al., (2021)
Industry	An indicator variable that = one if industrial firm, 0 if service firm.	Qawqzeh et al., (2020) and Rajgopal et al., (2021)
loss	An indicator variable that = one if a firm's net income is negative and zeroes otherwise	Qawqzeh et al., (2020) and Rajgopal et al., (2021)

The main model
Audit Quality = $\beta_0 + \beta_1$ Ownership types + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
The basic model is divided into four models to measure the dependent variable, and each model is divided into five equations as follows
The first model (Audit fees)
1. Audit Fees = $\beta_0 + \beta_1$ Board Ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
2. Audit Fees = $\beta_0 + \beta_1$ Managerial ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
3. Audit Fees = $\beta_0 + \beta_1$ Family ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
4. Audit Fees = $\beta_0 + \beta_1$ State ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
5. Audit Fees = $\beta_0 + \beta_1$ Board ownership + β_2 Managerial ownership + β_3 Family ownership + β_4 State ownership + β_5 Size + β_6 Return on assets + β_7 Industry + β_8 loss + ϵ
The second model (Big 4)
1. Big4 = $\beta_0 + \beta_1$ Board Ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
2. Big4 = $\beta_0 + \beta_1$ Managerial ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
3. Big4 = $\beta_0 + \beta_1$ Family ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
4. Big4 = $\beta_0 + \beta_1$ State ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
5. Big4 = $\beta_0 + \beta_1$ Board ownership + β_2 Managerial ownership + β_3 Family ownership + β_4 State ownership + β_5 Size + β_6 Return on assets + β_7 Industry + β_8 loss + ϵ
The third model (Restatement)
1. Restatement = $\beta_0 + \beta_1$ Board Ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
2. Restatement = $\beta_0 + \beta_1$ Managerial ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
3. Restatement = $\beta_0 + \beta_1$ Family ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
4. Restatement = $\beta_0 + \beta_1$ State ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
5. Restatement = $\beta_0 + \beta_1$ Board ownership + β_2 Managerial ownership + β_3 Family ownership + β_4 State ownership + β_5 Size + β_6 Return on assets + β_7 Industry + β_8 loss + ϵ
The fourth model (Industry Specialization)
1. Industry Specialization = $\beta_0 + \beta_1$ Board Ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
Industry Specialization = $\beta_0 + \beta_1$ Managerial ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
3. Industry Specialization = $\beta_0 + \beta_1$ Family ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
4. Industry Specialization = $\beta_0 + \beta_1$ State ownership + β_2 Size + β_3 Return on assets + β_4 Industry + β_5 loss + ϵ
Industry Specialization = $\beta_0 + \beta_1$ Board ownership + β_2 Managerial ownership + β_3 Family ownership + β_4 State ownership + β_5 Size + β_6 Return on assets + β_7 Industry + β_8 loss + ϵ
$\beta_0 - \beta_8$ = Regression coefficients
ϵ = Error term

Figure 1. Research models

through four proxies: the natural log of audit fees, audit firm size, restatement of financial reporting, and industry specialization. The explanatory variables (ownership types) contain members' ownership, family ownership, managerial ownership, and state ownership. The study used various control variables that may potentially affect the dependent variables. The control variables include firm size, return on assets, industry, and loss. Table 2 displays the variables of this study and the measuring of each variable.

This study is based on four separate models (Figure 1).

3. RESULTS

3.1. Descriptive statistics

Table 3 shows the descriptive statistics of the study variables. For Egyptian firms, the mean of each dependent variable is 10.31 in terms of the

Ln of audit fees, 0.62 for the audit firm size (Big4), which reflects that Big4 audit firms audit 62% of the Egyptian firms in the sample. The firms that have reissued their financial statements have a mean of 0.12, reflecting that 12% of the Egyptian firms in the sample restated the financial statements. The industry specialization has a mean of 0.35. Likewise, this result implies that the industry specialist auditors audited 35% of the sample. The variables disperse: Audit fees from 5.3 to 11.8, Big4, Restatement, and Specialization disperses from 0 to 1. In Saudi firms, the mean of each dependent variable is 9.99 in terms of the Ln of audit fees, 0.87 for the audit firm size (Big4), which reflects that Big4 audit firms audit 87% of the Saudi firms in the sample. The firms that have reissued their financial statements have a mean of 0.18, reflecting that 18% of the Saudi firms in the sample restated the financial statements. The industry specialization has a mean of 0.22. Likewise, this result implies that the industry specialist auditors

Table 3. Descriptive statistics

Egyptian firms	N	Min	Max	Mean	SD	Saudi firms	N	Min	Max	Mean	SD
Audit Fees	656	5.3	11.8	10.31	2.59	Audit Fees	616	6.4	12.5	9.99	3.043
Big 4	656	0	1	0.62	0.47	Big 4	616	0	1	0.87	0.26
Restatement	656	0	1	0.12	0.32	Restatement	616	0	1	0.18	0.45
Specialization	656	0	1	0.35	0.48	Specialization	616	0	1	0.22	0.325
Board own	656	0	56	12.5	9.59	Board own	616	0	76	18.141	11.69
Managerial own	656	0	56	6.27	4.12	Managerial own	616	2	45	9.44	3.912
Family own	656	2	56	19.5	8.25	Family own	616	2	56	45.59	8.113
State own	656	2	65	21.22	8.57	State own	616	2	70	23.42	9.47
Size	656	0.5	12	8.06	2.4	Size	616	0.5	12	8.03	2.40
ROA	656	0.12	56	20.11	7.41	ROA	616	-0.15	40	16.57	12.04
Industry	656	0	1	0.6	0.49	Industry	616	0	1	0.58	0.32
Loss	656	0	1	0.91	0.29	Loss	616	0	1	0.45	0.82

audited 22% of the sample. The variables disperse: Audit fees from 6.4 to 12.5, Big 4, Restatement, and Specialization disperses from 0 to 1.

As for the independent variables, the mean in Egyptian firms was 12.5% for board ownership, 6.27% for managerial ownership, 19.5% for family ownership, and 21.22% for government ownership. These results reveal that the government’s ownership and the family’s ownership are the common types in the Egyptian environment representing 21.22% and 19.5%, respectively. For Saudi firms,

the means are 18.4% for board ownership, 9.44% for managerial ownership, 45.59% for family ownership, and 23.42% for government ownership. These results reveal that the ownership by family and the ownership by the government are the common types in the Egyptian environment representing 45.59% and 23.42%, respectively.

3.2. Correlation analysis

The current study conducts collinearity diagnostics to ensure the lack of multicollinearity among

Table 4. Correlation matrix

Egyptian firms	Audit Fees	Big 4	Restatement	Specialization	Board own	Managerial own	Family own	Government own	Size	ROA	Industry	Loss
Audit Fees	1											
Big 4	-.576** 0.000	1										
Restatement	-.156** 0.000	.102** 0.009	1									
Specialization	-.397** 0.000	.113** 0.004	.132** 0.001	1								
Board own	-.451** 0.000	.507** 0.000	0.062 0.114	.274** 0.000	1							
Managerial own	-.324** 0.000	.282** 0.000	.088* 0.024	.293** 0.000	.328** 0.000	1						
Family own	.312** 0.000	-.285** 0.000	-.220** 0.000	-.331** 0.000	-.174** 0.000	-.166** 0.000	1					
State own	.275** 0.000	-.294** 0.000	-.197** 0.000	-0.041 0.295	-.103** 0.008	-.126** 0.001	.413** 0.000	1				
Size	.111** 0.005	-0.021 0.596	-0.020 0.616	-0.021 0.599	0.022 0.578	.152** 0.000	.082* 0.036	0.017 0.660	1			
ROA	.330** 0.000	-.259** 0.000	-.230** 0.000	-.261** 0.000	-0.063 0.105	-.177** 0.000	.472** 0.000	.436** 0.000	0.047 0.224	1		
Industry	.244** 0.000	-.137** 0.000	-.142** 0.000	-.228** 0.000	-.241** 0.000	-.302** 0.000	.337** 0.000	.187** 0.000	0.032 0.410	.320** 0.000	1	
loss	-.105** 0.007	.457** 0.000	-0.061 0.116	-.392** 0.000	.224** 0.000	-.084* 0.031	-.133** 0.001	-.297** 0.000	0.012 0.751	-.123** 0.002	.167** 0.000	1

Table 4 (cont.). Correlation matrix

Saudi firms	Audit Fees	Big 4	Restatement	Specialization	Board own	Managerial own	Family own	Government own	Size	ROA	Industry	Loss
Audit Fees	1											
Big 4	-.504** 0.000	1										
Restatement	-.685** 0.000	.259** 0.000	1									
Specialization	-.341** 0.000	0.056 0.166	.264** 0.000	1								
Board own	.677** 0.000	-.337** 0.000	-.527** 0.000	-.262** 0.000	1							
Managerial own	-.208** 0.000	.083* 0.038	.126** 0.002	.106** 0.008	-.170** 0.000	1						
Family own	.293** 0.000	-.278** 0.000	-.142** 0.000	-.327** 0.000	.246** 0.000	-.112** 0.005	1					
State own	.242** 0.000	-.277** 0.000	-.156** 0.000	-0.043 0.287	.280** 0.000	-0.042 0.294	.391** 0.000	1				
Size	.082* 0.042	-0.002 0.969	-.083* 0.039	-0.022 0.593	0.045 0.260	-0.041 0.315	0.059 0.143	0.002 0.067	1			
ROA	.368** 0.000	-.262** 0.000	-.220** 0.000	-.226** 0.000	.317** 0.000	-.114** 0.005	.444** 0.000	.405** 0.000	0.040 0.321	1		
Industry	.215** 0.000	-.085* 0.034	-.090* 0.025	-.178** 0.000	.175** 0.000	-.087* 0.030	.316** 0.000	.143** 0.000	0.015 0.717	.263** 0.000	1	
loss	-.175** 0.000	.496** 0.000	.166** 0.000	-.333** 0.000	-.145** 0.000	0.028 0.484	-.142** 0.000	-.215** 0.000	-0.007 0.864	-.136** 0.001	.118** 0.003	1
	616	616	616	616	616	616	616	616	616	616	616	616

the explanatory variables. Two tests were performed: the pairwise correlation matrix among the variables and the variance inflation factor (VIF). “If a multicollinearity problem exists among the independent variables, the regression results will not provide correct results. If the correlation between the independent variables is greater than or equal to 0.80, then a multicollinearity problem exists” (Qawqzeh et al., 2020, p10). (Table 4) presents the correlations among all variables.

For Egyptian firms, the correlation between the variables ranges from 2 % to 57.6%. However, for Saudi firms, the correlation between the vari-

ables ranges from .2% to 68.5%. Furthermore, the existence of multicollinearity is investigated by calculating the VIF. As shown in Table 5, all VIF values are less than 3, supporting the previous conclusion that there is no multicollinearity in the data (Qawqzeh et al., 2020).

3.3. Multivariate analysis

3.3.1. The effect of ownership structure on audit quality (Audit fees)

This study used four proxies as a measurement for audit quality (audit fees, audit firm size, reissuing

Table 5. Variance inflation factors

Explanatory variables	Egyptian firms (VIF)	Saudi firms (VIF)
Board own	1.286	1.195
Managerial own	1.274	1.041
Family own	1.476	1.431
State own	1.435	1.343
Size	1.041	1.007
ROA	1.490	1.433
Industry	1.383	1.188
Loss	1.299	1.102

the financial statements, and industry specialization). Table 6 shows the model results that present the relationship of the ownership structure with the audit fees. For Egyptian firms, R^2 , as shown in Table 6, is 33.88, and F-statistic is 0.000. Therefore, these results indicate that all independent variables explain 33.88% of the variance in the dependent variable, which is statistically significant. The results reveal a significant positive association between board ownership, government ownership, and audit fees. However, the results also reveal a significant negative association between managerial ownership, family ownership, and audit fees. In Saudi firms, R^2 , as shown in Table 6, is 49.80, and F-statistic is 0.000. Therefore, these results indicate that all independent variables explain 49.80% of the variance in the dependent variable. However, the results reveal a significant positive association between board ownership and audit fees. The results also reveal a significant negative association between managerial ownership, family ownership, and audit fees. However, the results reveal an insignificant association between government ownership and audit fees ($p > 5\%$).

Table 6. Regression for ownership types and audit quality (Audit fees)

Variable	Egyptian firms		Saudi firms	
	t	P-value	t	P-value
Constant	5.087	0.000	5.434	0.000
Board own	10.392	0.000	18.955	0.000
Managerial own	-4.464	0.000	-2.653	0.008
Family own	-2.147	-0.032	-1.724	-0.045
Government own	2.832	0.005	-0.794	0.427
Size	3.868	0.000	1.457	0.146
ROA	5.006	0.000	3.716	0.000
Industry	-0.394	0.694	2.082	0.038
Loss	0.924	0.356	-2.474	0.014
F.statistic	42.96	0.000	77.27	0.000
Adj R2	33.88%		49.80%	

3.3.2. The effect of ownership structure on audit quality (Big4)

Table 7 shows the model results that present the relationship of the ownership structure with the audit firm size. For Egyptian firms, R^2 , as shown in Table 7, is 44.35, and F-statistic is 0.000. Therefore, these results indicate that all independent variables explain 44.35% of the variance in the dependent variable. The results reveal a significant

positive association between board ownership and audit firm size. The results reveal a significant negative association between managerial ownership and audit firm size. However, the results reveal a significant negative association between family ownership and audit firm size. The results reveal an insignificant association between government ownership and audit firm size ($p > 5\%$). For Saudi firms, R^2 , as shown in Table 7, is 34.10, and F-statistic is 0.000. Therefore, these results indicate that all independent variables explain 34.10% of the variance in the dependent variable. However, the results reveal a significant positive association between board ownership and audit firm size. The results reveal an insignificant association between managerial ownership and audit firm size. However, the results reveal a significant negative association between family ownership and audit firm size. The results reveal an insignificant association between government ownership and the audit firm size ($p > 5\%$).

Table 7. Regression for ownership types and audit quality (Big 4)

Variable	Egyptian firms		Saudi firms	
	t	P-value	t	P-value
Constant	2.013	0.045	4.355	0.000
Board own	10.619	0.000	5.747	0.000
Managerial own	-5.107	0.000	0.375	-0.708
Family own	-2.149	0.032	-2.683	0.007
Government own	-1.628	0.104	-1.428	0.154
Size	-1.561	0.119	0.624	0.533
ROA	-2.920	0.004	-1.443	0.149
Industry	0.311	0.756	-1.236	0.217
Loss	10.566	0.000	12.710	0.000
F. Statistic	66.24	0.000	40.80	0.000
Adj R2	44.35%		34.10%	

3.3.3. The effect of ownership structure on audit quality (Restatement)

Table 8 shows the model results that present the relationship of the ownership structure with the incidence of financial Restatement. For Egyptian firms, R^2 , as shown in Table 8, is 8.19, and F-statistic is 0.000. Therefore, these results indicate that all independent variables explain 8.19% of the variance in the dependent variable. However, the results reveal an insignificant negative association between board ownership, government, and the incidence of financial Restatement. The results

reveal a significant positive association between family ownership and financial restatement incidence. The results reveal an insignificant positive association between managerial ownership and financial restatement incidence. For Saudi firms, R^2 , as shown in Table 8, is 28.4, and F-statistic is 0.000. Therefore, these results indicate that all independent variables explain 28.4% of the variance in the dependent variable. However, the results reveal a significant negative association between board ownership and the incidence of financial Restatement. The results reveal an insignificant positive association between managerial ownership, family ownership, government ownership, and the incidence of financial Restatement.

Table 8. Regression for ownership types and audit quality (Restatement)

Variable	Egyptian firms		Saudi firms	
	t	P-value	t	P-value
Constant	7.935	0.000	5.000	0.000
Board own	-1.232	0.219	-13.298	0.000
Managerial own	0.004	0.997	0.947	0.344
Family own	2.483	0.013	0.481	0.631
Government own	2.854	0.004	0.521	0.603
Size	-0.029	0.977	-1.677	0.094
ROA	-2.953	0.003	-1.463	0.144
Industry	-0.011	0.992	-0.104	0.917
Loss	-3.344	0.001	2.557	0.011
F.statistic	8.31	0.000	31.42	0.000
Adj R2	8.19%		28.40%	

3.3.4. The effect of ownership structure on audit quality (Industry specification)

Table 9 shows the model results that present the relationship of the ownership structure with the auditor's industry specification. For Egyptian firms, R^2 , as shown in Table 9, is 43.89, and F-statistic is 0.000. Therefore, these results indicate that all independent variables explain 43.89% of the variance in the dependent variable. However, the results reveal a significant positive association between the board ownership, managerial ownership, and auditor's industry specification. The results reveal a significant negative association between family ownership and auditor's industry specification. Finally, the results reveal an insignificant association between managerial ownership and auditor's industry specification. In Saudi firms, R^2 , as shown in Table 9, is 31.4, and F-statistic is 0.000.

Therefore, these results indicate that all independent variables explain 31.4% of the variance in the dependent variable. However, the results reveal a significant positive association between board ownership, government ownership, and auditor's industry specification. The results reveal a significant negative association between family ownership and auditor's industry specification. Finally, the results reveal an insignificant positive association between managerial ownership and auditor's industry specification.

Table 9. Regression for ownership types and audit quality (Specialization)

Variable	Egyptian firms		Saudi firms	
	t	P-value	t	P-value
Constant	15.099	0.000	14.062	0.000
Board own	10.022	0.000	6.449	0.000
Managerial own	2.980	-0.003	1.061	0.289
Family own	-8.029	0.000	-8.148	0.000
Government own	0.902	0.367	2.657	0.008
Size	-0.252	0.801	0.319	0.750
ROA	-5.809	0.000	-2.729	0.007
Industry	3.722	0.000	0.863	0.389
Loss	-15.990	0.000	-11.728	0.000
F. statistic	65.27	0.000	36.25	0.000
Adj R2	43.98%		31.40%	

4. DISCUSSION

It is clear that the board ownership (Board own) has a significant positive impact on the three indicators of audit quality (Audit fees, audit firm size, and specialization), whether in Egyptian or Saudi firms, so the hypotheses *H1a*, *H1b*, and *H1d* are accepted. On the other hand, board ownership has a significant adverse effect on the incidence of financial restatements as a reverse indicator of the audit quality in Saudi firms. In contrast, it has a negative and insignificant effect on Egyptian firms, so hypothesis *H1c* is accepted for Saudi firms and rejected for Egyptian firms. The previous results indicate that the owners of the Board play a vital role in the high level of the external audit quality. The members of the Board among the owners make a great effort to choose the big audit firms and pay high audit fees, and are keen to select the auditors specialized in the sector that the firm operates.

On the other hand, the board ownership reduces the possibility of financial restatements, which reduces financial reports quality and, at the same time, the audit quality. Several previous studies have supported these results, including Sori and Mohamad (2008) Hasnan et al. (2017), and Qawqzeh et al. (2021).

For the managerial ownership (Managerial own), the results showed a significant negative effect of the ownership by the management with audit fees and audit firm size. This type of ownership leads managers to attempt to reduce audit fees and less reliance on big audit firms, which reduces audit quality in Egyptian and Saudi firms; consequently, *H2a* and *H2b* are accepted. The results also indicated that insignificant positive effect of managerial ownership on the incidence of financial restatements, so hypothesis *H2c* is rejected for Egyptian and Saudi firms. Again, this reflects that managers' ownership allows managers to manipulate and achieve their interests, reducing the quality of financial reports and thus reducing audit quality. Finally, the results showed a significant negative effect of the ownership by management to hire a specialized auditor, so hypothesis *H2d* is accepted for Egyptian firms, while the association was an insignificant positive in Saudi firms, so hypothesis *H2d* is rejected for Saudi firms. In this regard, several previous studies have supported these results, including Niskanen et al. (2011), Hasnan et al. (2017), Qawqzeh et al. (2019), and Qawqzeh et al. (2021).

Regarding family ownership (family ownership), the results significantly negatively affected family owners with audit fees, audit firm size, and industry specialization; thus, *H3a*, *H3b*, and *H3d* are accepted for Egyptian and Saudi firms. These results indicate that family owners try to reduce audit fees and are less likely to hire one of the big audit firms and specialized auditors. These results are consistent with the entrenchment assumption that in the event of an increase in family ownership, the chances of abuse of power increase, which harms the interests of other owners and thus increases the conflict of interests and agency costs (Qawqzeh et al., 2021). On the other hand, the study found a positive and significant effect of family ownership on the incidence of Restatement of financial statements in Egyptian firms, which indicates a decrease in the quality of financial reports in the event of an increase in family ownership, and then the quality of audit decreases. However, this effect was positive but not significant in Saudi firms, and accordingly, hypothesis *H3c* is accepted for Egyptian firms and rejected for Saudi firms. These findings are consistent with Hasnan et al. (2017) and Qawqzeh et al. (2021).

The government ownership (Government own) showed mixed results with audit quality indicators. More specifically, it has a significant and positive effect on the audit fees in Egyptian firms, but it has an insignificant effect in Saudi firms; thus, *H4a* is accepted for Egyptians and rejected

Table 10. Summary of the study's hypotheses testing results

Hypothesis	Independent variable	Dependent variable	Hypothesis	Accept / Reject	
				Egyptian firms	Saudi firms
H1a	Board ownership	Audit fees	Positive	Accept	Accept
H1b		Audit firm size	Positive	Accept	Accept
H1c		Restatement	Negative	Reject	Accept
H1d		Industry specialization	Positive	Accept	Accept
H2a	Managerial ownership	Audit fees	Negative	Accept	Accept
H2b		Audit firm size	Negative	Accept	Reject
H2c		Restatement	Positive	Reject	Reject
H2d		Industry specialization	Negative	Accept	Reject
H3a	Family ownership	Audit fees	Negative	Accept	Accept
H3b		Audit firm size	Negative	Accept	Accept
H3c		Restatement	Positive	Accept	Reject
H3d		Industry specialization	Negative	Accept	Accept
H4a	Government ownership	Audit fees	Positive	Accept	Reject
H4b		Audit firm size	Positive	Reject	Reject
H4c		Restatement	Negative	Accept	Reject
H4d		Industry specialization	Positive	Reject	Accept

for Saudi firms. It also has an insignificant negative effect on firm audit size; thus, *H4b* is rejected for Egyptian and Saudi firms. These results indicate that the government owners are not interested in selecting big audit firms in Egyptian and Saudi firms. However, they are interested in paying high audit fees to audit their financial statements in Egyptian firms. The findings showed a significant positive effect of the ownership by the government on the incidence of financial restatements in Egyptian firms, but this effect is insignificant in Saudi firms; thus, *H4c* is accepted for Egyptian firms and rejected in Saudi firms. The results indicate that in firms owned by the Egyptian govern-

ment, the opportunity for managers to manipulate increases by restating the financial statements, which lowers the quality of financial reports and thus lowers the quality of auditing, but there are no such opportunities in Saudi firms. The results also indicated that government ownership has an insignificant positive effect on selecting specialized auditors for Egyptian firms. On the other hand, it significantly positively affects the selection of specialized auditors for Saudi firms; thus, *H4d* is accepted and rejected for Egyptian firms.

Table 10 summarizes the study's hypotheses and results compared to Egyptian and Saudi firms.

CONCLUSION

Many studies focused on different types of ownership structures. This study contributes to the existing literature by investigating different forms of ownership in two Arab countries, Egypt and Saudi Arabia. Therefore, this study investigated whether the different types of ownership affect external audit quality. More specifically, this study investigated the effect of ownership structures on audit quality indicators in two Arab countries under two different environments: Egypt and Saudi Arabia. The study used some familiar indicators to measure audit quality, particularly the audit fees, audit firm size, the restatement of the financial statements, and industrial specialization. The most important results were that the ownership of the boards of directors has a vital role in ensuring the quality of auditing in Saudi firms if the audit fees are an indicator of the quality of the audit or the firm reissues its financial statements as an indicator of the quality of the audit.

On the contrary, the ownership of the Board of directors does not have a quality assurance role in the auditing of Egyptian firms. The study results also showed that management ownership negatively affects audit quality due to managers focusing on their opportunistic interests, whether in Egyptian or Saudi firms, when using audit fees as an indicator of audit quality. However, the results were different due to the impact of management ownership when using other measures of audit quality. According to the indicator used to measure audit quality, the study showed that family ownership had no apparent impact on audit quality, as the results were positive or negative. Finally, the study showed that government ownership does not affect the audit quality of Egyptian and Saudi firms.

These outcomes also have implications for several bodies. For example, they provide an effective mechanism for controlling and monitoring firms through the high levels of ownership of the Board of Directors. In addition, investors can take advantage of these results when making investment decisions and ensure their interests are protected.

AUTHOR CONTRIBUTIONS

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