

## **Do BIG-4 auditors perform a corporate governance role in the Moroccan context? Evidence from accounting and market-based performance measures.**

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## **Abstract**

The research on external audit quality has attracted flourishing interest from several scholars following financial scandals and corporate failures, Nonetheless, results and empirical findings regarding the effect of audit quality on firm performance are still inconclusive. Our study is designed to investigate the impact of external audit quality on financial performance using both accounting and market-based performance indicators. Based on a sample of 38 listed firms in the Casablanca stock exchange, covering the period 2011-2021, this study employed a pooled OLS model to assess the effect of audit quality on accounting and market-based performance measures. For robustness check, we employed the Feasible Generalized Least Square (FGLS) estimator to account for potential issues of heteroskedasticity and autocorrelation. Our findings support the main hypothesis and the agency's theoretical foundations, indicating that audit brand name reputation and audit quality change exhibit significant positive impacts on financial performance and firm valuation. To the best of our knowledge, our study is the first to examine the effect of audit quality on firm performance and valuation in the Moroccan context and use audit quality change as a robustness proxy for audit quality. Nevertheless, our research suffers from some limitations, related to the methodological approach, possible omissions of some variables, econometric issues related to endogeneity concerns and external validity of our results due to the limited number of observations.

**Keywords:** Corporate governance, External audit quality, Firm performance, Agency theory, Morocco.

## **Introduction**

Research on the relationship between corporate governance mechanisms and firm performance has garnered considerable attention from multiple researchers. Most studies have focused on internal governance mechanisms, such as ownership structure, board of directors' attributes and audit committee characteristics (Detthamrong et al., 2017; Jermias & Gani, 2014; Mollah et al., 2012; Zhou et al., 2018), however, research on external audit quality is still limited in emerging markets (Alfraih, 2016). The firm is considered a deep black box where relationships and interests between managers and shareholders tend to be complex and divergent, as a consequence, firms need to establish a set of internal and external governance mechanisms to deter the discretionary power of managers and limit the probability of corporate bankruptcy and fraud (Jhunjhunwala & Bavirishetty, 2009). External auditors are perceived as gatekeepers and the crux of the corporate governance system through their capability and skills to detect anomalies, material weaknesses and monitor the application of accounting choices and standards (Coates, 2007; J. R. Francis, 2023). Drawing from different theoretical backgrounds, starting by the agency theory, audit quality is considered an effective governance mechanism that aligns interests between different shareholders, an oversight monitoring mechanism to reduce opportunistic behavior and testify the correctness of financial reporting or malfeasance from managers (Jensen, 1986). On the other hand, external auditors enforce managers to respond to other stakeholders' interests, by increasing corporate risk disclosures and detecting internal control weaknesses, in other words, external auditors constitute a crucial oversight mechanism to discipline and monitor the manager's contracts (Coates, 2007; Watts & Zimmerman, 1983). Audit quality is defined as the probability that an auditor can detect anomalies, misconducts, and discover a breach, violation or material misstatements in the accounting information produced by managers (DeAngelo, 1981; Tran et al., 2019). Furthermore, the stakeholders' theory extends the debate on the role of audit quality; its function is not restricted only on the contractual relationship between managers and shareholders, but connects a wide range of neglected stakeholders, in this regard, the quality of audit services gives insurance to other stakeholders, increase their confidence towards corporates' financial reporting and reduce the information asymmetry, as a consequence, stakeholders can make accurate decisions based on reliable information (Manita et al., 2020). Moreover, the literature on audit quality points out that large auditors have more resources and high technology compared to small auditing firms (Husnin et al., 2016), as a consequence, high auditing firms can face and bear the managerial pressure and act as an independent monitoring

device for stakeholders (Piot & Janin, 2007). In spite of what has been mentioned, there is no consensus on the results and empirical findings regarding the effect of audit firm size (Al-Ajmi, 2009). Our study aims to test the effect of audit quality, precisely audit firm size on financial performance. Our research design is based on positivism, a paradigm that isolates the researcher from personal values, satisfying the main criteria of objectivity and independence, following a hypothetico-deductive reasoning (Walliman, 2016; Žukauskas et al., 2018). The structure of our study is presented as follows: first of all, we will present the empirical relevant literature linking audit quality to firm performance and formulate our hypothesis. Next, we briefly describe the regression model specification, sampling, data collection and definitions of the variables. Then, we will present, interpret and discuss our findings. Finally, we conclude the study by presenting its limitations and future research avenues.

### **1. Literature review and hypothesis development:**

Our research aims to investigate the theoretical underpinning of audit quality and firm performance. External auditors are perceived as an effective governance mechanism that has incentives for reducing agency costs between shareholders and managers, a monitoring device used to reduce the bonding costs, guarantee the accuracy, detect misleading information, minimize fraud actions and ensure financial statements' sincerity (Jensen & Meckling, 1976). A first strand of literature confirms that audit quality tends to impact financial performance, firm valuation and value creation significantly. Drawing from an agency perspective, auditors through their competence, reputation and skills are considered as a supervisory mechanism that guarantees the credibility of financial reports, attenuates opportunistic management behavior, detects internal control weaknesses and constrains earnings management practices (El Mir & Seboui, 2008). Other studies have tackled the literature gap by examining the effect of audit quality on firm's earnings management practices, cost of equity and financial reporting quality (Alves, 2013; Le & Moore, 2023). The information asymmetry between managers and shareholders suggests the request and the demand of external auditors as a robust device for controlling deviated and deleterious management decisions (Alzoubi, 2016). Using different empirical proxies of audit quality, the results assess that auditor tenure and specializations have a significant negative impact on the magnitude of accounting manipulation using discretionary accruals as a proxy (Houmes et al., 2013). The role of audit quality is not limited to providing high audit services only, through their specific knowledge, high technology, professional skepticism and their competence but also an oversight mechanism that assures investors about the strategic decisions made by management. Since auditors are concerned about preserving

and protecting their reputation and independence, managers are very cautious regarding firms' capital expenditures, the reasons why audit quality can be viewed as a crucial monitoring tool that impacts the strategic innovative decisions by managers, as a consequence, firm's performance and future market valuation increase upward (Boubaker et al., 2018; Mahrani & Soewarno, 2018). Prior studies have documented robust results indicating that the role of BIG-4 auditing firms is multidimensional, it can help detect anomalies, foster firm valuation (Buachoom, 2018), increase investors' confidence towards financial reporting quality and reinforce the corporate governance system by affecting corporate voluntary disclosures as a response to other stakeholders' interests (Dakhli, 2022). Another strand of literature casts light on the relationship between demanding high audit quality and investment efficiency, the results of different studies have relied excessively on measuring audit quality by audit firm size following the famous work of (DeAngelo, 1981). Using a panel data approach for 125 French-listed firms over eight years, the results confirm that audit quality exhibits a significant positive impact on investment efficiency, thereby, auditor brand reputation and industry specializations are associated with efficient investment compared to firms with Non-BIG-4 auditors (Boubaker et al., 2018). An enormous number of studies confirms the main hypothesis that audit brand name reputation is associated with firms having high investment opportunities and organizational market valuation using Tobin's Q as a proxy (Al Farooque et al., 2019; Al-Ahdal et al., 2023; Alfraih, 2016; Asghar et al., 2020; Boshnak, 2023; Conheady et al., 2015; Diab et al., 2024; Jaffar & Abdul-Shukor, 2016; Jermias & Gani, 2014; Kalita & Tiwari, 2023; Meah et al., 2021; Mohapatra & Pattanayak, 2024; Nazir & Afza, 2018; Ntim, 2015; Sarhan et al., 2019; Sarker & Hossain, 2023; Shan, 2019; Singla & Singh, 2019). In a similar vein, (Rompotis & Balios, 2023) have examined the effect of audit quality on firm performance and firm risk, for 75 companies listed in the Athens stock exchange covering 4 years. Using panel data techniques and relying on seven different proxies of corporate performance and firm risk, the authors' results confirm and meet the hypothesis expectations, in other words, audit firm size enhances firm performance and exhibits a negative effect on corporate risk-taking. Based on manufacturing firms in Pakistan as a sample for investigation, this study has explored the link between audit quality and firm performance, two proxies computed the dependent variable; sustainability in growth rate and return on assets. To deal with potential endogeneity concerns, the authors used the dynamic panel data approach (GMM) and the empirical outcomes provide convincing evidence that auditor experience and audit pricing are determinants of corporate performance (Sattar et al., 2020). To address the literature gap in emerging countries, a model

was developed by (Al-ahdal & Hashim, 2022) to test the hypothesis that connects audit committee attributes and external audit quality to firm performance in the Indian context. Unlike prior studies, the authors utilize a different proxy by computing audit quality as an index composed of 10 items, inspired by the implementation of the Companies Act law of Indian firms. The study adds valuable knowledge to the literature on audit quality, however, it fails to provide strong evidence and robust results supporting and defending our main hypothesis (Al-ahdal & Hashim, 2022). Large well-known audit firms' main objective is to protect their reputation and independence, in this regard, the competence of profile members, knowledge of audit practices and processes, gives insurance to stakeholders about the reliability and transparency of financial statements, responding to international high-quality auditing and reporting standards, as a result, corporate reputation, firm valuation and investors' confidence increase (Zahid et al., 2022). Furthermore, external auditors constitute the most valuable control mechanism of the external corporate governance system, audit quality is perceived as a signal of legitimacy and trustworthiness, in this vein, auditors help the board members and managers by establishing a strong internal control system with accurate information facilitating the decision-making process (Hewa Wellalagea et al., 2023). In contrast to previous empirical findings, a considerable number of studies have failed to record a strong linkage between audit firm size and financial performance, precisely studies using accounting-based performance measures (Aljifri & Moustafa, 2007; Alkurdi et al., 2021; Alodat et al., 2023; Bakri, 2021; Bhuiyan et al., 2020; Boshnak, 2023; Elamer & Benyazid, 2018; Ferraz et al., 2018; Kamaludin et al., 2023; Nag & Chatterjee, 2020; Nguyen & Nguyen, 2024, 2024; Sri & Solimun, 2019; Zhou et al., 2018).

**Based on the preceding theoretical foundations and empirical literature findings, we present our research hypothesis:**

**Hypothesis 1:** External audit quality has a significant positive impact on financial performance and firm valuation.

**H1 a:** Audit firm size has a significant positive impact on financial performance and firm valuation.

**H1 b:** Audit quality change has a significant positive impact on financial performance and firm valuation.

## **2. Data and methodology:**

### **2.1 Sample selection:**

Our study began in 2011, following the 2008 financial crisis. The initial sample of our study consisted of all firms listed in the Casablanca Stock Exchange. Due to specific accounting standards, reporting and regulations, firms belonging to the banking sector were excluded from our sample, also companies with missing data on variables or not satisfying the criteria of being listed during the whole period were eliminated. Our final usable balanced data consisted of 38 firms, with a total of 418 observations covering the period of 2011-2021. Our study relies on two main sources of data: financial statements and annual reports, based on the Casablanca Stock Exchange (BVC) and the Moroccan Authority of Capital Market (AMMC) websites.

### **2.2 Model specification and variable measurements:**

This study adopts a pooled OLS model with the Newey-West (NWS) robust standard errors to deal with heteroscedasticity and autocorrelation problems (Alfraih, 2016; White, 1980). To explore the effect of audit quality on firm performance, we estimate our model by the following equations:

$$\text{Firm performance}_{it} = \beta_0 + \beta_1 \text{BIG4}_{it} + \sum_{j=1}^7 \beta_{jit} \text{Control}_{jit} + \text{YEAR}_t + \varepsilon_{it} \quad (1)$$

$$\text{Firm performance}_{it} = \gamma_0 + \gamma_1 \text{UPBIG}_{it} + \sum_{j=1}^7 \gamma_{jit} \text{Control}_{jit} + \text{YEAR}_t + \zeta_{it} \quad (2)$$

### **2.3 Variables measurements:**

#### **Dependent variable:**

For our analysis, firm performance is measured by using both accounting-based measures (i.e. return on assets and return on equity) and market-based indicators (i.e. market to book ratio and Tobin's Q). The use of market-based performance measures is justified in literature by its power to capture relevant information and thus overcome the limitation of accounting-based performance proxies (Gentry & Shen, 2010). According to previous studies, **Return on assets** is the ratio of net income divided by the book value of total assets (Agyei-Mensah, 2018; Elamer & Benyazid, 2018; Ferraz et al., 2018; Zhou et al., 2018).

**Return on equity** is the ratio of net income scaled by the book value of equity (Abu Afifa et al., 2023; Al-ahdal & Hashim, 2022; Boshnak, 2023; Buallay et al., 2017; Elmashtawy et al.,



2023; Khan & Abdul Subhan, 2019; Mahrani & Soewarno, 2018). For market-based indicators, we calculate **Tobin's Q** as the sum of the market value of equity and total debt divided by the book value of total assets which is consistent with several studies (Al Farooque et al., 2019; Alkurdi et al., 2021; Badriyah et al., 2015; Dakhli, 2022; Jermias & Gani, 2014; Kalita & Tiwari, 2023, 2023). **The market-to-book** ratio is measured by the market value of equity scaled by the book value of equity (Kao et al., 2019; Vieira, 2018).

### **Independent variable:**

Following prior literature, our independent variable "Audit quality" is defined as a dummy variable that equals one if the firm is audited by one of the "BIG-4" auditing firms (Deloitte, Price Waterhouse Coopers, Earnst and Young and KPMG) and zero otherwise (Abu Afifa et al., 2023; Agyemang-Mintah & Schadewitz, 2018; Alodat et al., 2023; Bakri, 2021; Boubaker et al., 2018; DeAngelo, 1981; Diab et al., 2024; Natalia & Isnalita, 2023; Nekhili & Cherif, 2009; Owusu & Weir, 2016; Rompotis & Balios, 2023; Saleh Aly et al., 2023; Sayed et al., 2024, 2024; Vintilă et al., 2015; Zahid et al., 2023).

### **Control variables:**

To isolate the effect of audit quality and control for firm characteristics, we follow extant literature by incorporating several control variables that are supposed to influence firm performance. Firm size is defined as the natural logarithm of firm's total assets (Khan & Abdul Subhan, 2019; Sattar et al., 2020). Firm age is measured by the natural logarithm of the number of years since firm's incorporation (Kao et al., 2019; Meah et al., 2021). Liquidity stands for the ratio of current assets to current liabilities (Alkurdi et al., 2021; Boshnak, 2023). Leverage represents the ratio of total debt to total assets (Vintilă & Gherghina, 2014; Yun et al., 2021; Zahid et al., 2022). Dividend is a dummy variable taking the value of one if the firm paid ordinary dividend and zero otherwise (Ofori-Sasu et al., 2019). Furthermore, we included asset turnover ratio as a proxy of agency costs defined as the ratio of total sales to total assets (Ahmed et al., 2023; Rompotis & Balios, 2023; Sattar et al., 2020). Finally cash holdings is calculated as the ratio of cash and cash-equivalents to total assets (Hewa Wellalagea et al., 2023; Yun et al., 2021). Lastly, we control for year fixed effects.



**Table I : Description of variables**

Variable	Label	Definition
<b>Dependent variable</b>		
<b>Financial performance</b>		
Accounting-based performance measures	ROA-1	Operating income/ Total assets
	ROA-4	Net income/ Total assets
	ROE-1	Operating income/ Book value of equity
	ROE-4	Net income/ Book value of equity
Market-based performance measures	MTB	Market value of equity / Book value of equity
	TQ	(Market value of equity + book value of debt)/Book value of total assets
<b>Independent variable</b>		
<b>Audit quality</b>		
Audit firm size	BIG4	Dummy variable that equals one if the firm is audited by one of the “Big-4” auditing firm, and zero otherwise. Big 4 auditors include “Deloitte, PwC, EY and KPMG”
Audit quality change	UPBIG	Dummy variable that equals one if the firm switched from a Non-BIG4 to a BIG-4 auditor and zero otherwise.
<b>Control variables</b>		
Firm size	SIZE	Natural logarithm of firm’s total assets
Firm age	AGE	Natural logarithm of the number of years since firm’ incorporation
Liquidity	LIQ	Currents assets/ Current liabilities
Leverage	LEV	Total debt/ Total assets
Dividend	DIV	Dummy variable that equals one if the firm paid ordinary dividend and zero otherwise
Asset Turnover Ratio	ATR	Total sales/ Total assets
Cash-Holdings	CASH	Cash and cash equivalents/ Total assets

**Source : Authors**

### 3. Results and discussion :

#### 3.1 Descriptive statistics

**Table II : Descriptive statistics**

Variables	Mean	SD	Min	Median	Max
<b>ROA4</b>	0,070	0,069	-0,134	0,064	0,280
<b>ROE4</b>	0,134	0,140	-0,319	0,126	0,530
<b>MTB</b>	2,809	2,104	0,328	2,358	10,448
<b>TQ</b>	1,845	1,014	0,461	1,656	5,731
<b>BIG4</b>	0,596	0,491	0,000	1,000	1,000
<b>UPBIG</b>	0,038	0,192	0,000	0,000	1,000
<b>SIZE</b>	7,333	1,391	4,855	7,171	10,630
<b>AGE</b>	3,773	0,527	2,600	3,757	4,617
<b>LIQ</b>	0,281	0,218	-0,241	0,311	0,742
<b>LEV</b>	0,445	0,173	0,099	0,473	0,786
<b>DIV</b>	0,775	0,418	0,000	1,000	1,000
<b>ATR</b>	0,750	0,446	0,025	0,700	1,881
<b>CASH</b>	0,044	0,052	0,000	0,023	0,236

#### Source : Authors

Table II reports the summary statistics of dependent, independent and control variables employed in the study for the full sample. All variables are defined in Table I. Starting with our dependent variable, **ROA4** of sample firms ranges from (-1,34) to (0,28) with a mean of 0,07. The mean (Median) values of **ROE4** are 0,13 (0,126). For market-based performance proxies, the maximum values of **MTB** and **TQ** are (10,44) and (5,73) respectively, **MTB** has the largest variation, with a mean of 2,80 and a standard deviation of 2,10 indicating that market-based performance measures (MTB-TQ) have more variability than accounting-based performance proxies (ROA4-ROE4). Concerning our main independent variable, 59,6% of our sample firms are audited by one of the **BIG-4** auditing firms, these results confirm the dominance of BIG-4 auditors in the Moroccan audit market. Concerning control variables, the variable (**Size**) indicates that our sample firms have on average a natural logarithm of total assets value of 7,33 and a maximum value of 10,63. The mean (median) values of liquidity (**LIQ**) are 0,28 (0,31). Furthermore, the average debt ratio (**LEV**) is 0,44 with a standard deviation of 0,17.

The statistics indicate that ordinary dividend (**DIV**) is distributed by 77,5 % of our sample firms. In addition, the mean value of asset turnover ratio (**ATR**) and cash-holdings (**CASH**) is 0,75 and 0,04, respectively. **Table III** and **Table IV** report the repression results for Equation (1), where we regress accounting and market-based performance measures on audit quality and other control variables of our model.

**Table III: Pooled OLS regression results of accounting-based performance measures on audit quality and control variables**

VARIABLES	(1) <b>ROA1</b>	(2) <b>ROA4</b>	(3) <b>ROE1</b>	(4) <b>ROE4</b>
<b>BIG4</b>	0.0459*** (0.0069)	0.0275*** (0.0055)	0.0894*** (0.0149)	0.0570*** (0.0122)
<b>SIZE</b>	-0.0048* (0.0027)	-0.0032 (0.0023)	-0.0120* (0.0066)	-0.0092* (0.0054)
<b>AGE</b>	-0.0176*** (0.0068)	-0.0115** (0.0056)	-0.0691*** (0.0134)	-0.0458*** (0.0114)
<b>LIQ</b>	-0.0538*** (0.0188)	-0.0353** (0.0156)	-0.2475*** (0.0401)	-0.1748*** (0.0327)
<b>LEV</b>	-0.1247*** (0.0188)	-0.1467*** (0.0174)	0.0038 (0.0365)	-0.0919*** (0.0323)
<b>DIV</b>	0.0732*** (0.0082)	0.0691*** (0.0072)	0.1537*** (0.0171)	0.1519*** (0.0144)
<b>ATR</b>	0.0474*** (0.0084)	0.0142** (0.0060)	0.0775*** (0.0180)	0.0230* (0.0133)
<b>CASH</b>	0.1651** (0.0699)	0.1511*** (0.0467)	0.4382*** (0.1633)	0.3550*** (0.1176)
<b>Constant</b>	0.1374*** (0.0351)	0.1260*** (0.0329)	0.3606*** (0.0757)	0.2888*** (0.0675)
<b>Observations</b>	418	418	418	418
<b>R-squared</b>	0.4125	0.4327	0.4495	0.4408
<b>Adjusted R-squared</b>	0.3876	0.4086	0.4261	0.4171
<b>F-stat</b>	23.9843***	20.2243***	18.5686***	14.2510***
<b>Years FE</b>	Yes	Yes	Yes	Yes

Note (s): \*, \*\*, \*\*\* denote the statistical significance at 10%, 5% and 1%, respectively. Robust standard errors in parentheses.  
Source: Authors' estimation results

**Table IV: Pooled OLS Regression results of market-based performance measures on audit quality and control variables**

VARIABLES	(1) TQ	(2) MTB
<b>BIG4</b>	0.4083*** (0.0816)	0.8964*** (0.1822)
<b>SIZE</b>	0.1147*** (0.0345)	0.2376*** (0.0733)
<b>AGE</b>	0.1098 (0.0901)	-0.2508 (0.1757)
<b>LIQ</b>	-0.8490*** (0.2311)	-3.1012*** (0.4412)
<b>LEV</b>	-1.3429*** (0.2504)	-0.0409 (0.4619)
<b>DIV</b>	0.6097*** (0.1009)	1.1455*** (0.2072)
<b>ATR</b>	0.1984** (0.0922)	0.3449* (0.1884)
<b>CASH</b>	0.7386 (0.7329)	2.5431 (1.6316)
<b>Constant</b>	0.7666* (0.4360)	1.6371* (0.9071)
Observations	418	418
R-squared	0.3079	0.3782
Adjusted R-squared	0.2785	0.3518
F-stat	13.5415***	17.9551***
Years FE	Yes	Yes

Note (s): \*, \*\*, \*\*\* denote the statistical significance at 10%, 5% and 1%, respectively. Robust standard errors in parentheses.

Source: Authors' estimation results

### **3.2 Presentation and interpretation of results:**

Hypothesis H1-a predicts a significant positive effect of audit firm size on firm performance, using both accounting and market-based measures of performance. Table III reports the results of the link between audit quality and firm performance by estimating the first equation using a pooled OLS model. Consistent with our expectations, the results support the main hypothesis and indicate that audit firm size has a significant positive impact on the four proxies of accounting-based performance measures. All The coefficients of audit quality are significant

at the 1 percent level, ( $t= 6,6$ ,  $p<0,01$ ), ( $t=4,97$ ,  $p<0,01$ ), ( $t=6$ ,  $p<0,01$ ), ( $t= 4,66$ ,  $p<0,01$ ), respectively, which means that financial performance is associated with audit firm size. The results from Table IV indicate that all coefficients of audit firm size are significant at 1 percent level, ( $t= 5$ ,  $p<0,01$ ), ( $t=4,92$ ,  $p<0,01$ ). These results lead us to accept and validate our hypothesis. Our results align with the empirical findings of multiple scholars, supporting the agency and stakeholders' theories, suggesting that audit quality is a crucial external supervisory mechanism for stakeholders. The results can be explained by the fact that well-reputed external auditors have a brand to protect, moreover, audit services provided by BIG-4 audit firms give assurance to stakeholders, hamper managerial discretionary power, and push managers to a better allocation of resources, as a consequence, firms' investment efficiency increases (Boubaker et al., 2018). The empirical results are consistent with the notion that auditor firm size enhances firm valuation in the market and potentially boosts the confidence of stakeholders, helping firms get access to financing from borrowers, through the auditor's independence, competence and reputation (Boubaker et al., 2018; Dakhli, 2022). In line with findings of prior studies, BIG-4 auditors are perceived as a robust mechanism to align interest between different stakeholders, reduce agency costs and information asymmetry, and transmit green signals to investors about the transparency and quality of financial reporting (Asghar et al., 2020; Sattar et al., 2020; Schäuble, 2018).

### **Robustness check:**

To ensure the robustness and efficiency of our results, we replace our main independent variable (i.e. audit firm size) with the proxy of audit quality change, defined as a dummy variable that equals one if the firm changed from a Non-BIG4 auditor to a BIG-4 auditor, following previous studies (B. B. Francis et al., 2017; Mansi et al., 2004). **Table V** presents the last set of the regression results of our baseline model, by estimating the second equation. Using another proxy of audit quality (**UPBIG**), the results remain robust and consistent with our predictions, all the coefficients are significant at the 1% level except for (**ROE4**) at the five percent level. A comparison of coefficients' magnitude leads us to observe that the effect of audit quality change (**UPBIG**) on market-based performance measures (i.e. **MTB AND TQ**) is two times that of audit firm size (BIG-4), ( $t=2,86$ ,  $p<0,01$ ), ( $t=3,30$ ,  $p<0,01$ ), indicating that a change from a non-BIG4 auditor to a BIG-4 auditor (Upgrade) enhances firm performance, supporting the size or reputation theory of audit firms (DeAngelo, 1981; Huang et al., 2020). The results obtained from **Table V** and **Table VI** are robust and the coefficients meet the same significance level.

**Table V: Robustness regression results (Audit quality change)**

VARIABLES	(1) ROA4	(2) ROE4	(3) MTB	(4) TQ
UPBIG	0.0542*** (0.0185)	0.0847** (0.0347)	1.9533*** (0.6818)	0.9583*** (0.2905)
SIZE	0.0012 (0.0022)	-0.0004 (0.0051)	0.3797*** (0.0708)	0.1799*** (0.0344)
AGE	-0.0044 (0.0053)	-0.0311*** (0.0108)	-0.0196 (0.1592)	0.2151** (0.0841)
LIQ	-0.0411*** (0.0155)	-0.1877*** (0.0339)	-3.2860*** (0.4512)	-0.9312*** (0.2308)
LEV	-0.1484*** (0.0177)	-0.0971*** (0.0325)	-0.0875 (0.4673)	-1.3603*** (0.2544)
DIV	0.0638*** (0.0069)	0.1422*** (0.0140)	0.9623*** (0.2008)	0.5229*** (0.0984)
ATR	0.0144** (0.0061)	0.0229* (0.0138)	0.3572* (0.1917)	0.2056** (0.0923)
CASH	0.1608*** (0.0480)	0.3680*** (0.1215)	2.9075* (1.6010)	0.9223 (0.7012)
Constant	0.0868*** (0.0313)	0.2112*** (0.0628)	0.3386 (0.8267)	0.1667 (0.4082)
Observations	418	418	418	418
R-squared	0.4270	0.4249	0.3774	0.3116
Adjusted R-squared	0.4026	0.4005	0.3510	0.2824
F-stat	21.2412***	14.4993***	17.6034***	14.0306***
Years FE	Yes	Yes	Yes	Yes

Note (s): \*, \*\*, \*\*\* denote the statistical significance at 10%, 5% and 1%, respectively.

Robust standard errors in parentheses.

Source: Authors' estimation results

To increase the robustness of our results, we proceed to run multiple regressions using Feasible Generalized Least Square (FGLS) as a robustness check estimator to overcome potential issues of heteroskedasticity and autocorrelation (Affes & Jarboui, 2023; Alsmady, 2022; Kalsie & Shrivastav, 2016; Usman & Yakubu, 2019; Yoo & Koh, 2014; Zeitun, 2014).

**Table VI: Robustness regression results (FGLS)**



	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	ROA4	ROA4	ROE4	ROE4	MTB	MTB	TQ	TQ
<b>BIG4</b>	0.0178*** (0.0032)		0.0292*** (0.0070)		0.5079*** (0.1263)		0.2781*** (0.0583)	
<b>UPBIG</b>		0.0350*** (0.0102)		0.0513*** (0.0174)		1.4984*** (0.3434)		1.0200*** (0.1918)
<b>SIZE</b>	-0.0012 (0.0014)	0.0019 (0.0013)	-0.0009 (0.0030)	0.0035 (0.0032)	0.2825*** (0.0544)	0.3477*** (0.0485)	0.1783*** (0.0252)	0.2179*** (0.0246)
<b>AGE</b>	-0.0085** (0.0036)	-0.0044 (0.0037)	-0.0340*** (0.0076)	-0.0231*** (0.0083)	-0.0029 (0.1196)	0.0120 (0.1188)	0.1434** (0.0583)	0.1759*** (0.0574)
<b>LIQ</b>	-0.0458*** (0.0088)	-0.0374*** (0.0080)	-0.1284*** (0.0182)	-0.0982*** (0.0200)	-2.9302*** (0.3310)	-2.9546*** (0.3281)	-1.0893*** (0.1435)	-1.0968*** (0.1498)
<b>LEV</b>	-0.1454*** (0.0113)	-0.1439*** (0.0111)	-0.0839*** (0.0233)	-0.0932*** (0.0233)	-0.7966** (0.3102)	-0.9195*** (0.3186)	-1.4826*** (0.1520)	-1.5574*** (0.1577)
<b>DIV</b>	0.0497*** (0.0046)	0.0497*** (0.0043)	0.1145*** (0.0104)	0.1145*** (0.0101)	0.6521*** (0.1405)	0.6005*** (0.1287)	0.3230*** (0.0662)	0.2940*** (0.0653)
<b>ATR</b>	0.0177*** (0.0044)	0.0197*** (0.0045)	0.0256*** (0.0094)	0.0292*** (0.0092)	0.2510 (0.1587)	0.2442 (0.1607)	0.2186*** (0.0761)	0.1912** (0.0782)
<b>CASH</b>	0.1424*** (0.0390)	0.1113*** (0.0379)	0.2381*** (0.0862)	0.2248*** (0.0865)	2.4564* (1.3169)	1.4176 (1.2831)	0.9700 (0.6113)	0.5631 (0.6082)
<b>Constant</b>	0.1156*** (0.0207)	0.0833*** (0.0205)	0.2016*** (0.0438)	0.1351*** (0.0467)	1.0049* (0.6066)	0.7763 (0.5826)	0.4172 (0.3046)	0.1834 (0.3000)
Observations	418	418	418	418	418	418	418	418
Number of TKR	38	38	38	38	38	38	38	38

**Standard errors in parentheses**

\*\*\* p<0.01, \*\* p<0.05, \*p<0.1

Source: Authors' estimation results

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**Conclusion:**

The research aimed empirically to examine the link between external audit quality, financial performance and firm valuation, which the literature has ignored in emerging markets. Our research extends the debate on external audit quality effectiveness, our findings are in line with the agency and stakeholders' theories perspectives, indicating that auditor reputation impacts positively firm performance and corporate valuation. External auditors are deemed to be an effective monitoring mechanism in reducing agency costs and curbing managerial deleterious investment decisions. The empirical findings have important implications for investors, policymakers and different stakeholders. Hence, it is interesting to note that our study suffers from some limitations, first of all, the sample size is limited due to missing data and exclusion criteria, which can affect the external validity of our results. Some limitations are related to the econometric aspects, future studies need to address the problem of endogeneity by applying a dynamic panel data approach (GMM) to overcome results bias and boost the robustness of the findings (Abu Afifa et al., 2023; Al-Ahdal et al., 2023; Boshnak, 2023; Meah et al., 2021; Sattar et al., 2020; Yun et al., 2021; Zahid et al., 2023). Regarding future perspectives, we suggest future studies to adopt other proxies of external audit quality, such as auditor tenure (Le & Moore, 2021; Mansi et al., 2004; Saleh Aly et al., 2023) and auditor industry specialization (Fernando et al., 2010; Houmes et al., 2013). Finally, the extension of the sample and the consideration of other countries from the African continent would significantly contribute to the literature for a better understanding of the role and effectiveness of external auditors as a corporate governance mechanism in emerging markets.

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