Does audit quality provide a better-managed capital?: Evidence from Saudi listed firms

هل تؤدي جودة المراجعة إلى إدارة رأس المال أفضل؟ أدلة من الشركات السعودية المدرجة

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Abstract:

Purpose- This study examines the relation between audit quality and firm's performance using return on equity and return on assets.

Design/methodology/approach– Consistent with prior research, this paper treats audit quality as a dichotomous variable and assumes that Big Four auditors are of higher quality than non-Big Four auditors. Due to self-interest perspective, prior theories of ownership and management argue that keeping shareholders out of managerial responsibilities give management powers and intern benefit their self than acting to serve the interest of the business ownership influencing the firm's performance. Prior literature suggests that auditors have an important role in reducing conflict of interest between managements and the shareholders as they provide assurance engagement service, which positively influences the firm's performance. Therefore, this paper hypothesizes that clients of higher audit quality have less agency problems, which in turn better firm's performance. To test this hypothesize, this study collects data manually from financial reports of all non-financial Saudi firms listed on the Saudi Stock Exchange for fiscal years ending 2017 – 2019. This paper regresses audit quality on measurement of firm's performance (return on equity (ROE) and return on assets (ROA)) using a number of models including the use of pooled ordinary least square (OLS), fixed effect (FE) and random effect (RE), and Probit models.

Findings– Consistent with expectation, this paper finds that firms audited by big four have a better ratio of ROA by approximately 15.1%, and better ratio of ROE by approximately 17.3% compared to firms audited by non-big four.

Originality/Value – The current study further expanded the present knowledge by illustrating that the effect of audit quality on firm's performance via assurance engagement service, which in return reduces the conflict of interest between managements and the shareholders.

Keywords: audit, audit quality, Big Four, firm performance

الملخص

تتناول هذه الدراسة العلاقة بين جودة المراجعة وأداء الشركات. تمشيًا مع الأبحاث السابقة، يعامل هذا البحث الورقة مع جودة المراجعة كمتغير ثنائي وتفترض أن المدققين الأربعة الكبار يتمتعون بجودة أعلى من المدققين غير الأربعة الكبار. نظرًا لمنظور المصلحة الشخصية، فإن النظريات السابقة للملكية والإدارة تقول إن إبقاء المساهمين بعيدًا عن المسؤوليات الإدارية يمنح صلاحيات إدارية ويفيد المدراء أنفسهم بدلاً من العمل لخدمة مصلحة ملكية الأعمال التي تؤثر على أداء الشركة. وتشير الأدبيات السابقة إلى أن المراجعين لهم دور مهم في الحد من تضارب المصالح بين الإدارات والمساهمين لأنهم يقدمون خدمة ضمان المشاركة، مما يؤثر بشكل إيجابي على أداء الشركة. ولذلك، تفترض هذه الورقة أن الشركات المتعاقدين مع مراجعين ذوي جودة مراجعة الأعلى لديهم مشاكل أقل في الوكالة، الأمر الذي يؤدي بدوره إلى تحسين أداء الشركة. لاختبار هذه الفرضية، تقوم هذه الدراسة بجمع البيانات يدويا من التقارير المالية لجميع الشركات السعودية غير المالية المدرجة في السوق المالية السعودية للسنوات المالية المنتهية 2017 - 2019. وتعكس هذه الدراسة جودة المراجعة على قياس أداء الشركة باستخدام) العائد على حقوق الملكية (ROE)والعائد على الأصول ((ROA) وباستخدام عدد من النماذج بما في ذلك استخدام المربعات العادية الصغرى المجمعة(OLS) ، والتأثير الثابت(FE) ، والتأثير العشوائي(RE) ، ونماذج .Probit تمشيا مع التوقعات، وجدت هذه الورقة أن الشركات التي يتم تدقيقها من قبل الشركات المراجعة الأربع الكبرى لديها نسبة أفضل من العائد على الأصول بنحو 15.1٪، ونسبة أفضل من العائد على حقوق المساهمين بحوالي 17.3٪ مقارنة بالشركات التي يتم تدقيقها من قبل الشركات المراجعة غير الأربع الكبرى.

الكلمات المفتاحية: المراجعة، جودة المراجعة ، الأربعة الكبار، أداء المنشأة

1- Introduction:

In the field of this research area, there is many proxies used by researchers to measure audit quality, as such content does not have agreed upon measures. This comes mainly from two perspectives. One of which is that there is no agree on a definition of audit quality. DeAngelo (1981) who defines audit quality as the joint likelihood that auditor will (a) discover a breach in the client's accounting system, and (b) report the breach. This definition indicates that an auditor's independence from a given client is a key factor of audit quality. This view is argued by Watts (1981) that the initiation of auditors to disclose breach in the client's accounting system is influenced by the levels of audit independence. Other researchers have a different definition of audit quality. For example, DeFond and Zhang (2014) define audit quality as when auditors provide greater assurance of financial reporting. Shivaram, Suraj, and Zheng (2021) argue that these different definitions provide different measurements that are based on output-based audit (e.g., discretionary accruals), (ii) input-based audit (e.g., audit fees and size), and other measures of audit quality.

This term “audit quality” is widely used in the area of this research especially after the separation of business ownership from management. Managements due to self-interest are more likely to engage in actives that benefit their self than acting to serve the interest of the business ownership (Jensen & Meckling, 1976). In addition, managers may adopt goals and objectives than those set by principals (Jensen & Meckling, 1976; Ross, 1973). Managers may also put less effort in effectively managing the firm assets and keep their bonuses even if the firm is having a higher default risk (Harris & Raviv, 1991). Hence, this means that there is a need for an external part to engage between the managements and the shareholders. Auditors are one of corporate governance mechanisms that are used to reduce the conflict of interest between managements and the shareholders as auditors provide assurance engagement service, which is a fundamental aspect of financial statements (Minnis, 2011). Therefore, it is expected that firms with higher audit quality have less agency problems, which in turn better firm’s performance.

Several studies investigate the potential effect of audit quality and firm’s performance. For example, Farouk and Hassan (2014) find that firms audited by

higher audit quality have better financial riots that firms audited by non-big four. This study participates in this debate by arguing that firms with higher audit quality; the opportunistic behavior of the management is controls resulting in better firm's performance. Specifically, this paper examines the effect of the size of audit firms on firm financial performance measured by ROA and ROE. This paper analyzes Saudi Arabia data as the government launched Saudi Vision 2030 in 2016. In particular, the present research analyzes financial reports of 300 firm-year observations listed on the Saudi Stock Exchange for fiscal years ending 2017 – 2019. Hence, examining the impact of audit quality on a firm's performance during this period is important.

This paper regress audit quality on firm's performance measured by ROA and ROE using a number of methods. It employs pooled ordinary least square (*OLS*), fixed effect (*FE*) and random effect (*RE*), and Probit models. The paper finds that there is a positive relationship between audit quality and firm financial performance. Specifically, using pooled ordinary least square (OLS) approach and controlling for firm characteristics, the study finds firms with higher audit quality have better ratios in terms of *ROA*, and such firms have a 15.1% increase of their return on assets (*ROA*) than their counterparts. Similar findings are reported using fixed effect (*FE*) and random effect (*RE*). However, Probit model provides stronger results which show that return on assets (*ROA*) increased by 72% in firms with higher audit quality. The paper also finds that firms with higher audit quality have a 17.3% increase of their return on equity (*ROE)* when holding other things unchanged. Similar results are also provided using fixed effect (*FE*) and random effect (*RE*), and Probit models that audited firms by big four have an increase of their return on equity (*ROE*) than audited firms by non-big four. These results are consistent with several studies that provide evidence about the relationship between audit quality and a firm's performance (Egbunike & Abiahu, 2017; Fooladi & Shukor, 2012; Moutinho, Cerqueira, & Brandao, 2012).

The paper is organized as follows: section 2 presents literature review and hypothesis development. Section 3 provides information about the data, followed by research methodology outlined in Section 4. Section 5 demonstrates empirical results and discussions. Section 6 concludes.

2. Literature review and hypothesis development

After separation of ownership of a firm from firm's control which including giving (the agent) authority to perform some service on behalf of (the principals) to maximize the wealth of the owners, and based on the theory of conflict of interest between management and shareholders Jensen and Meckling (1976), it is possible that the managers may use the authority given to them by the principals for their personal needs. For example, (i) managers may override the control of a company, (Gay & Simnett, 2015; Jerzemowska, 2006; Masulis, 1988), (ii) managers may provide materially misleading financial reports i.e., financial reports position look better than it truly is (Gay & Simnett, 2015), (iii) managers may also only disclose favorable disclosers and hide negative events so that their bonus increases. Fama and Jensen (1983) argues that these problems will not be solve unless a number of "mechanisms" to be applied, hence agency problem is reduced. There are a number of mechanisms that may serve to limit the conflicts of interest between managers and shareholders such as auditors (Skaife & Warfield, 2003).

Assurance engagement service provided by auditors is one of the monitoring mechanism used in the corporate governance that reduce self-interest and opportunistic behavior by the agent (Nikkinen & Sahlström, 2004). Auditors also are required by the law to (1) provide reasonable assurance about whether the financial statements prepared by the agent as a whole are free from material misstatement, and (2) identify business risks, advise on weaknesses of internal control, and report irregularities (IAASB, 2009), and (3) require the agent to amend the financial reports if judged by auditor professional judgement (Gay & Simnett, 2015). Such requirements show that the financial statements are reviewed by third part (auditors) after the preparing from the agent. With such requirements, it is more likely that problems in the financial statements such as information asymmetry (Chang, D'Anna, Watson, & Wee, 2008; Cormier, Ledoux, Magnan, & Aerts, 2010; Kanagaretnam, Lobo, & Whalen, 2007), and earnings management (Burgstahler, Hail, & Leuz, 2006; Van Tendeloo & Vanstraelen, 2008) are reduced which in return increasing firm's performance especially in client with higher audit quilt which have more experience, training, and are more independent (Francis & Yu, 2009).

Therefore, a large number of studies examine the relationships between auditor quality and firm performance. These studies apply several proxies to measure audit quality and firm performance. With regards to audit quality, audit firm size, auditor experience, audit fees, auditor rotation and auditor independence as proxies for audit quality (Matoke & Omwenga, 2016; Miettinen, 2011; Rezaee, Espahbodi, Espahbodi, & Espahbodi, 2012; Woodland, Reynolds, & Scholar, 2003).

In addition, return on asset (ROA), return on equity (ROE) and Tobin's Q are widely used to measure firm's performance. For instance, Fooladi and Shukor (2012) study linkage between audit quality measured by audit size and firm performance measured by return on asset (ROA) and Tobin's Q (TQ). Using a sample of 400 Malaysian companies and based on linear multiple regression, they find a positive relationship between audit quality and firm performance. This indicates that firms audited by one of Big Four audit firms have better performance in terms of return on asset (ROA) and Tobin's Q (TQ) than firms audited by non-Big Four. DeAngelo (1981) see auditor is one of corporate governance monitoring and argues that higher audit quality measured by auditor independence are more likely to provide any misstatement in financial statements hence lower information asymmetry leading to better firm value. Using 730 Malaysian listed companies, Jusoh, Ahmad, and Omar (2013) argue that auditor reduce information asymmetry and provide evidence that firms audited by higher audit quality have better ratios in relation to ROA and Tobin's Q.

In another Malaysian study, Ching, Teh, San, and Hoe (2015) investigate the relationship between audit quality firm financial performances among public listed companies. They use return on assets and true return on assets as a proxy for financial performance. The results of their paper reveal that audit firm size is statistically significant and positively correlated with return on assets and true return on assets. This indicates that Big Four audit firm have higher audit quality, which results in better financial performance by the companies compared to non-Big Four-audit firm. Farouk and Hassan (2014) use pooled OLS regression and provides similar results that audit quality has a significant and positive association with firm performance measured by ROA and ROE.

This is similar to the founding of these Egbunike and Abiahu (2017) who

find that audit quality has a positive effect on ROA. Based on firms listed in Tunis Stock Exchange, Bouaziz (2012) find audit quality increase financial performance. In the context of Oman, Al Ani and Mohammed (2015) assesse the influence of auditor quality (big four auditors and non- big four auditors) on return on assets (*ROA*) and return on equity (*ROE*). They find that return on assets (*ROA*) and return on equity (*ROE*) have a better performance in firms that are audited by big four than their peers. Based on Brazilian listed companies from 2009 to 2010, Martinez and da Jesus Moraes (2014) find a positive relationship between audit quality measured by audit fees and firm value measured by Tobin's Q. Moutinho et al. (2012) investigate the relationship between audit quality and firm performance. The others use a fixed effects model to run a data from U.S. publicly traded firms during the period from 2000 to 2008. Similar to this paper, they also include a number of variables that are related to corporate governance and characteristics including EP, ROA, ROE, and Tobin's Q. They find a negative influence of audit quality on firm performance. Phan, Lai, Le, and Tran (2020) examine the impact of having high audit quality on the performance of firms listed on Hanoi Stock Exchange. They use the variables of customer loyalty and employee satisfaction as a measure of firm performance and find that firms with higher audit quality have also positive impacted on such variables. Based on such theoretical predications and coupled with empirical evidence, this paper argues that firms with higher audit quality have a better financial performance, which leads to the following hypothesis:

Hypothesis. Firms audited by higher audit quality have better financial performance in relations to ROE and ROA.

3. Data and variables

3.1. Data

The initial sample of 300 firm-year observations consists of all non-financial Saudi firms listed on the Saudi Stock Exchange for fiscal years ending 2017 – 2019. This sample period was important because the Saudi government launched in 2016 Saudi vision 2023. This vision is expected to change the business environment in Saudi and make the Saudi economy less dependent from oil. Therefore, studying the role of audit in providing a better-managed capital

during this period of this vision on companies listed the Saudi financial market after 2015 is important. The Saudi financial market is as well one of largest stock market among the 67 members of the World Federation of Exchanges, and is the dominant market in the Gulf Cooperation Council (GCC).

To be included in the sample, firms had to satisfy number of criteria including having variables ranged within top and bottom of all variables to avoid the influence of extreme values in the data, and having data related to financial measurements, board structure and audit committee measurement, and audit and firm size measurements. These processes reduced the sample size from 300 to 117 firm-year observations.

3.2. Variables

This paper studies the role of audit quality on how well firm managed its capital. Hence, the dependent variables used in the current study are return on equity (*ROE*) and return on assets (*ROA*). ROE measures how efficient a firm's management is at generating income and growth from its equity. The return on assets (*ROA*) shows how well the firm's management is at generating a profit from the use of assets. In this paper, the use of these measures is consistent with several studies that examine the effect of audit quality on firm's performance (Ching et al., 2015; Egbunike & Abiahu, 2017; Fooladi & Shukor, 2012; Jusoh et al., 2013).

The role of auditors is a part of monitoring mechanisms over opportunistic behavior by the firm's management (Nikkinen & Sahlström, 2004) as they increase confidence and trust in firm's management financial reports (Gay & Simnet, 2015), and are require identifying business risks, advise on weaknesses of internal control, and report irregularities (IAASB, 2009) which in turn reduce agency problem. Hence, it is expected that managers of better-governed firm are more likely to engage in less activities that do not maximize the value of shareholders' wealth. In this paper, ROE is measured as net income divided by average total common equity at fiscal year-end while return on assets (ROA) is measured as firm net income by firm total assets at fiscal year-end.

The independent variable used in this paper is audit quality measured by audit size. Using input-based audit (e.g., audit size) to assess the effect of audit quality in firm performance is not new. For example, Becker, DeFond, Jiambalvo, and Subramanyam (1998) find that firms with higher audit quality have less earning management. In addition, a number of studies argue about the linkage between higher audit quality, less restatement of financial statement, and less fraud occurrence (Becker et al., 1998; Darmawan & Saragih, 2017). Hence, the current study expects that firms with higher audit quality have a better return on equity (*ROE*) and return on assets (*ROA*).

To ascertain the impact of the audit quality on firm's management performance, a number of control variables are used. Such variables are adapted from previous studies on firm management performance, audit's characteristics, and board. These variables include board size (*Bsize*), inclusion of non-executive directors (*NEX*) in the board as such executives are more independent than executive directors, hence lower agency costs (Brickley, Coles, & Terry, 1994; Kaplan & Reishus, 1990), CEO Duality, CEO tuner (*CEOT*), audit commit size (*ACs*), audit commit meetings (*Active*), independence of audit committee (*IAC*), percentage of shares owned by board directors (*SHBD*), firm size (*Fs*), interest rate (*IR*), and Growth rate (*Gr*).

Table1: Variable description and measurement

Variable name	Acronym	Definition and measurement
Dependent variables		
Return on Equity	*ROE*	Net income divided by average total common equity
Return on Assets	*ROA*	dividing a firm's net income by the average of its total assets
Independent and control variables		
Audit size	*BIG*	Dummy variable; = 1 if a firm had the annual financial statements audited by big Four; = 0 otherwise.
Board size	*Bsize*	Total number of directors on firm board
Non-executive directors	*NEX*	Percentage of non-executive directors with respect to board size
Duality	*Duality*	Natural logarithm of number of years CEO has served in the given

Variable name	Acronym	Definition and measurement
		firm as an executive director
CEO tenure	*CEOT*	Natural logarithm of number of years CEO has served in the given firm as an executive director
Size of nomination committee	*ACs*	The number of directors on the given nomination committee
Activity of audit committee	*Active*	Total number of meetings held by audit committee per year
Independence of audit committee	*IAC*	The number of independent directors on the given audit committee
Managerial ownership	*SHBD*	percentage of shares owned by board directors
Firm size	*logFs*	Natural logarithm of total assets at fiscal year-end
Interest rate	*IR*	The annual nominal interest rate of the most recent line of credit/loan (%)
Rate of growth	*Gr*	(Current sales / previous sales) - 1

4. Methods

As discussed above, this paper follows a number of studies including Fooladi and Shukor (2012) and Rezaee et al. (2012) in conducting the dependent variable, audit quality as a dummy variable to examine whether or not firm with a bigger audit firm size has a better management of its capital. Specifically, this paper hypotheses that firms with higher audit quality have a better rate of return on equity (*ROE*) and return on assets (*ROA*). To do so, this paper proposes a model using pooled ordinary least square (*OLS*) and this model is estimated based on a panel data using Stata 13 statistical data analysis. The use of this model was because the study is a casual relation between audit's characteristics and firm's performance, data used in this paper are randomly collected, and observations of this paper are obtained over multiple time periods for the same firms. To make a comparison of the results, his paper also uses both fixed effect (*FE*), random effect (*RE*) model, and Probit model as presented in Section 4.1 below.

4.1. Models

(i) Audit and return on equity (ROE): A linear regression & A Probit model

$$ROE_{it} = \alpha_0 + \alpha_1 AUDIT_{it} + \alpha_2 x_{it} + ¥_t + Ş_t + \varepsilon_{it} \quad (1)$$

Where ROE_{it} is the first dependent variable, showing how efficient the manager of a firm is at generating income and growth from the firm's equity, $AUDIT_{it}$ is the main independent variable, showing if a firm had its financial statements audited by big four peers non-big four. x_{it} is a vector of control variables, including board size (Bsize), inclusion of non-executive directors (*NEX*), CEO Duality, CEO tuner (*CEOT*), audit commit size (*ACs*), audit commit meetings (*Active*), independence of audit committee (*IAC*), percentage of shares owned by board directors (*SHBD*), firm size (*Fs*), interest rate (*IR*), and Growth rate (*Gr*). All variables are defined in Table 1. α_0 is the constant term; α_1 captures the effect of higher audit quality on return on equity; α_2 captures the effects of the control variables on return on equity; *¥t* captures the firm-fixed effect, and *Şt* captures the year fixed effect. The index *i* denotes individual firm-year observations (*i*=1, 2, …, 300), *t* denotes time period (*t* = 2017, 2018, 2019), and *εit* denotes the error term.

(ii) Audit and return on assets (ROA): A linear regression & A Probit model

$$ROA_{it} = \mu_0 + \mu_1 AUDIT_{it} + \mu_2 x_{it} + ¥_t + Ş_t + \varepsilon_{it} \quad (2)$$

where ROA_{it} is the second dependent variable, showing how well the manager of a firm is using the firm's assets at generating profit, μ_0 is the constant term; μ_1 captures the effect of higher audit quality on return on assets; μ_2 captures the effects of the control variables on return on assets; $¥_t$ captures the firm-fixed effect, and $Ş_t$ captures the year fixed effect. The index i denotes individual firm-year observations (i=1, 2, …, 300), t denotes time period (t = 2017, 2018, 2019), and εit denotes the error term.

5. Results

5.1. Descriptive statistics

Table 2 provides descriptive statistics for the sample of the study including mean, standard deviation, minimum, and maximum values, of all variables. The mean of ROA across the sample is 0.049 (4.9%) with a maximum of 0.58 (50%). This may indicate that the managers of firms use assets more

efficiently to generate a profit. On average, the firms in this sample have a ROE of 0.03 (3.3%) with a maximum of 1.076 (10%) suggesting that managements of such firms are above average at using the company's assets to create profits. In general, the sample companies have large audit size, with an average size of 0.439. Each firm has a mean (median) board size of 8.274 (8) members and 74% of the board seats are held by independent directors with percentage of shares owned by board directors is 12%. This may recommend that firms in the sample have larger board size and such boards own many shares. In the sample, a slightly higher proportion of CEOs acting as chair is 65% while the CEOs tenure is about 2.5 years. On average, each audit committee has a size of 3.6, and meets 4.8 times a year with 63% of audit committee members are independent. In average, the firms in this sample are large in terms of total assets (a mean of SAR 21.886 in logs). The statistics show that the average interest rate is 0.037 (3.7%) with growth rate of 1.170 (100%), suggesting that firms in this research sample have lower debt with a good growth.

Table 2. Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
ROA	200	0.049	0.107	-0.148	0.585
ROE	200	0.033	0.299	-2.274	1.076
BIG	200	0.436	0.498	0.000	1.000
Bsize	200	8.274	1.448	6.000	13.000
NEX	200	7.479	1.430	5.000	11.000
Duality	200	0.650	0.479	0.000	1.000
CEOT	200	2.447	2.199	1.000	12.000
ACs	200	3.607	0.787	3.000	6.000
Active	200	5.004	3.569	-27.667	12.000
IAC	200	0.639	0.300	0.000	1.000
SHBD	200	0.128	0.168	0.000	0.672
Firm size (Log.)	200	21.886	1.494	19.315	26.499
IR	200	0.037	0.036	0.000	0.244
Gr	200	1.170	11.928	-1.000	28.117

Notes: This table presents the descriptive statistics of all variables in the model. It reports means of individual variables, followed by standard deviation, minimum, and maximum values. The definition of variables is provided in Table 1

5.2. Empirical results

5.2.1. Baseline results

Table 3 shows the relationship between audit quality and return on equity. As anticipated in H1, the results using the OLS approach for pooled data confirm that firms with higher audit quality have a better financial performance. Specifically, the coefficient of 0.173 on audit quality (BIG) is positive and significant in relation with return on equity (ROE). This coefficient is statistically significant at the 1% level (column [1]). This would mean that firms with higher audit quality have better ratios in terms of ROE. Holding other things unchanged, firms with higher audit quality have a 17.3% increase of their return on equity (*ROE*). Comparing to column [1], column [2] shows a stronger significant and positive impact of audit quality (*BIG*) on return on equity (*ROE*). More specifically, the coefficient of 0.180 on audit quality (*BIG*) (t-statistic=2.060) shows that return on equity (ROE) increased by 18% in firms with higher audit quality. Column [3] and column [4] provide results of the relationship between audit quality and return on equity using random effect (RE) model and Probit model, respectively. While random effect (RE) model provides similar results, Probit model provides stronger a significant and positive of effect of audit quality (*BIG*) on return on equity (*ROE*) with a coefficient of 0.742 suggesting that audited firms by big four have 72% increase of their return on equity (*ROE*) than audited firms by non-big four.

The current paper also finds some significant relationship between control variables and return on equity (*ROE*). The coefficient of 0.081 on board size (*Bsize*) with *t*-statistic equals to 2.040 (significant at the 5% level) shows that an increase of one member in the board (*Bsize*) increased return on equity (*ROE*) by 8.1%. These results still hold after applying different models except for Probit model. In addition, inclusion of non-executive directors (*NEX*) in the board is found significantly and positively affect return on equity (*ROE*). As can be seen in Table 4, a 1% increase of non-executive directors (*NEX*) in the board leads to an increase in return on equity (*ROE*) by 17 percentage points (statistically significant at the 1% level with the t-statistic of 2.110). Similar results are provided in Column [2] and column [3]. Other control variables including CEO Duality, CEO tuner (*CEOT*), audit commit size (*ACs*), audit commit meetings

(*Active*), independence of audit committee (*IAC*), percentage of shares owned by board directors (*SHBD*), firm size (*Fs*), interest rate (*IR*), and Growth rate (*Gr*) are found insignificantly affecting return on equity (*ROE*) except for Growth rate (*Gr*) in Probit model.

Table 3. *The influence of Audit quality on return on equity (ROE): A linear regression*

Var	OLS			FE			RE			probit		
	[1]			[2]			[3]			[4]		
	Coef.	Std. Err.	P>|t|	Coef.	Std. Err.	P>|t|	Coef.	Std. Err.	P>|t|	Coef.	Std. Err.	P>|t|
BIG	.173	.084	.042	.180	.084	.039	.173	.084	.039	.742	.288	.010
Bsize	.166	.081	.044	.166	.081	.044	.166	.081	.041	.371	.260	.153
NEX	.176	.084	.038	.176	.084	.038	.176	.084	.035	.417	.266	.116
Dualit	-.109	.111	.329	-.109	.111	.329	-.109	.111	.326	-.285	.369	.440
CEOT	.013	.014	.354	.013	.014	.354	.013	.014	.351	.028	.045	.539
ACs	-.043	.052	.418	-.043	.052	.418	-.043	.052	.416	-.170	.169	.313
Active	.005	.009	.58	.005	.009	.580	.005	.009	.578	-.035	.029	.220
IAC	.010	.100	.921	.010	.100	.921	.010	.100	.921	.265	.340	.437
SHBD	.073	.197	.711	.073	.197	.711	.073	.197	.710	-.194	.655	.768
logFs	-.013	.029	.671	-.013	.029	.671	-.013	.029	.670	.057	.099	.564
IR	-.217	.853	.8	-.217	.853	.800	-.217	.853	.799	-.540	.884	.055
Gr	.001	.003	.642	.001	.003	.642	.001	.003	.640	.005	.008	.525
Inter	.140	.593	.814	.162	.593	.786	.140	0.592	0.813			
Year effects	Yes			Yes			Yes			Yes		
Industy effects	Yes			Yes			Yes			Yes		
R												
Obs	200			200			200			200		

Panel 1 reports the main results of OLS estimation of Equation (1) on the relationship audit quality and return on equity. Panel 2 reports the results of FE, panel (3) reports the results of RE, and panel (4) reports the results of Tobit estimation. Individual variables are reported in both Panels, followed by standard errors. The dependent variable is return on equity ROE and independent variable is audit quality (BIG). *, **, and * denote significance at the 10%, 5%, and 1% levels, respectively.**

Table 4 shows the influence of audit quality on return on assets (*ROA*). Based on the aim of this study, the results confirm that firms with higher audit quality have a better financial performance measured by return on assets (*ROA*). In column [1] and based on the OLS approach, the coefficient of 0.051 at the 1%

level on audit quality (*BIG*) is positive and significant in relation with return on assets (*ROA*). This suggests that firms with higher audit quality have better ratios in terms of *ROA*, and such firms have a 15.1% increase of their return on assets (*ROA*).

This paper also applies including fixed effect (*FE*) in column [2], random effect (RE) model in column [3], and Probit model in column [4]. All of all provide similar results that firms with higher audit quality have better ratios in terms of return on assets (*ROA*). However, the use of Probit model provides stronger evidence. It shows that the coefficient of 0.729 on audit quality (*BIG*) is positive and significant in relation with return on equity (*ROE*). This coefficient is statistically significant at the 1% level with *t*-statistic equals to 2.530 suggesting that return on assets (*ROA*) increased by 72% in firms with higher audit quality.

In terms of the control variables and return on assets (*ROA*), board size (*Bsize*) is found to have a significant and positive affect on return on assets (*ROA*). As it can be seen in column [1], an increase of one member in the board (*Bsize*) increased that return on assets (*ROA*) by 6.8%. In addition, board held by non-executive directors (*NEX*) has a positive effect on return on assets (*ROA*) with *t*-statistic equals to 2.040 (significant at the 5% level). This means that board that increases their non-executive directors by 1%, return on equity of such board leads to an increase of return on assets (*ROA*) by 72 percentage points. Fixed effect (FE), random effect (RE), and Probit models provide similar results with these reported in column [1] with regards to *Bsize* and *NEX* on *ROA*. However, the rest of control variables have insignificant influence on *ROA* except for Growth rate (*Gr*) in Probit model.

Table 4. *The influence of Audit quality on return on assets (ROA): A linear regression*

Var	OLS			FE			RE			probit		
	[1]			[2]			[3]			[4]		
	Coef.	Std. Err.	P>|t|	Coef.	Std. Err.	P>|t|	Coef.	Std. Err.	P>|t|	Coef.	Std. Err.	P>|z|
BIG	**.051**	**.027**	**.064**	**.051**	**.027**	**.064**	**.051**	**.027**	**.060**	**.729**	**.288**	.011
Bsize	**.068**	**0.026**	**.011**	**.068**	**.026**	**.011**	**.068**	**.026**	**.010**	**.450**	**.262**	.086
NEX	**.080**	**.027**	**.004**	**.080**	**.027**	**.004**	**.080**	**.027**	**.003**	**.516**	**.267**	.054
Duality	**-.059**	**.036**	**.105**	**-.059**	**.036**	**.105**	**-.059**	**.036**	**.102**	**-.371**	**.370**	.317
CEOT	**.003**	**.005**	**.539**	**.003**	**.005**	**.539**	**.003**	**.005**	**.537**	**.034**	**.045**	.447
ACs	**-.023**	**.017**	**.179**	**-.023**	**.017**	**.179**	**-.023**	**.017**	**.175**	**-.126**	**.168**	.453
Active	**-.001**	**.003**	**.674**	**-.001**	**.003**	**.674**	**-.001**	**.003**	**.673**	**-.029**	**.028**	.304
IAC	**.037**	**.032**	**.252**	**.037**	**.032**	**.252**	**.037**	**.032**	**.250**	**.444**	**.343**	.195
SHBD	**.032**	**.064**	**.619**	**.032**	**.064**	**.619**	**.032**	**.064**	**.618**	**.079**	**.654**	.904
logFs	**.000**	**.010**	**.972**	**.000**	**.010**	**.972**	**.000**	**.010**	**.972**	**.026**	**.099**	.796
IR	**-.237**	**.276**	**.393**	**-.237**	**.276**	**.393**	**-.237**	**.276**	**.391**	**-7.124**	**2.901**	.014
Gr	**.001**	**.001**	**.443**	**.001**	**.001**	**.443**	**.001**	**.001**	**.441**	**0.005**	**.008**	.546
Inter	**.132**	**.192**	**.493**	**.128**	**.192**	**.506**	**.132**	**.192**	**.491**			
Year effects	**Yes**			**Yes**			**Yes**					
Industy effects	**Yes**			**Yes**			**Yes**					
R	**.1663**			**0.1394**			**.139**					
Obs	**200**			**200**			**200**					

Panel A reports the main results of OLS estimation of Equation (2) on the relationship audit quality and return on assets. Panel 2 reports the results of FE, panel (3) reports the results of RE, and panel (4) reports the results of Tobit estimation. Individual variables are reported in both Panels, followed by standard errors. The dependent variable is return on assets ROA and independent variable is audit quality (BIG). *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

6. Conclusions

This paper explores the role of one corporate governance mechanisms in reducing the agency issues that is bright after the separation of ownership between the firm's manager and firm's owners. This paper discusses the theatrical theory as to why managers may act based on their self-interest rather than maximizing the wealth of the owners. It provides several cases where managers did not serve the best interest of shareholders and shows the role of auditors in reducing such cases. This is because auditors are required to provide

assurance services including whether the financial statements prepared by the agent as a whole are free from material misstatement. This amongst other standers requirements is expected to minimize the opportunistic behavior of the management resulting in a better manager's performance. This paper shows the relationship between audit quality and firm's performance. In doing so, this paper uses data collected manly from financial statements from Saudi listed firms over the years 2017 – 2019. This time period is critical as it provides fresh evidence on the impact of Saudi vision 2023 that was launched in 2016.

Unlike previous research that uses a single method, this paper applies a number of models in examining the linkage between audit quality and firm's performance including pooled ordinary least square (OLS), fixed effect (FE) and random effect (RE), and Probit models. This study extends the literature in this area by producing evidence that auditor quality has a positive and statistically significant influence on a firm's performance. More specifically, this study finds that firms audited by Big four have a better ratio of ROA by approximately 15.1% compared to firms audited by non-big four. In addition, this paper shows that return on equity (ROE) increases by approximately 17% in firms audited by big four. The findings of the paper are consistent with prior research that finds auditor quality increases a firm's financial performance (e.g., Al Ani & Mohammed, 2015; Moutinho et al., 2012; Phan et al., 2020). The overall findings suggest that higher audit quality have an important role on limiting opportunistic behavior of the management, which in turn increases firm's financial performance.

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Reference

Al Ani, M. K., & Mohammed, Z. O. (2015). Auditor quality and firm performance: Omani experience. *European Journal of Economics, Finance and Administrative Sciences, 74*, 13-23.

Becker, C. L., DeFond, M. L., Jiambalvo, J., & Subramanyam, K. (1998). The effect of audit quality on earnings management. *Contemporary accounting research, 15*(1), 1-24.

Bouaziz, Z. (2012). The impact of auditor size on financial performance of Tunisian companies. *Faculty of Economics and Management. Sfax University, Tunisia*.

Brickley, J. A., Coles, J. L., & Terry, R. L. (1994). Outside directors and the adoption of poison pills. *Journal of financial Economics, 35*(3), 371-390.

Burgstahler, D. C., Hail, L., & Leuz, C. (2006). The importance of reporting incentives: Earnings management in European private and public firms. *The Accounting Review, 81*(5), 983-1016.

Chang, M., D'Anna, G., Watson, I., & Wee, M. (2008). Does disclosure quality via investor relations affect information asymmetry? *Australian Journal of Management, 33*(2), 375-390.

Ching, C. P., Teh, B. H., San, O. T., & Hoe, H. Y. (2015). The Relationship among Audit Quality, Earnings Management, and Financial Performance of Malaysian Public Listed Companies. *International journal of economics & management, 9*(1).

Cormier, D., Ledoux, M.-J., Magnan, M., & Aerts, W. (2010). Corporate governance and information asymmetry between managers and investors. *Corporate Governance: The international journal of business in society, 10*(5), 574-589.

Darmawan, A., & Saragih, S. O. (2017). The impact of auditor quality, financial stability, and financial target for fraudulent financial statement. *Journal of Applied Accounting and Taxation, 2*(1), 9-14.

DeAngelo, L. E. (1981). Auditor size and audit quality. *Journal of accounting and economics, 3*(3), 183-199.

DeFond, M., & Zhang, J. (2014). A review of archival auditing research. *Journal of accounting and economics, 58*(2-3), 275-326.

Egbunike, F., & Abiahu, M. (2017). Audit firm report and financial performance of money deposit banks in Nigeria. *The Nigerian Accountant, 50*(1), 25-39.

Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *The Journal of Law & Economics, 26*(2), 301-325.

Farouk, M. A., & Hassan, S. U. (2014). Impact of audit quality and financial performance of quoted cement firms in Nigeria. *International journal of accounting and taxation, 2*(2), 1-22.

Fooladi, M., & Shukor, Z. A. (2012). *Board of directors, audit quality and firm performance: evidence from Malaysia.* Paper presented at the National Research & Innovation Conference for Graduate Students in Social Sciences.

Francis, J. R., & Yu, M. D. (2009). Big 4 office size and audit quality. *The Accounting Review, 84*(5), 1521-1552.

Gay, G., & Simnett, R. (2015). Auditing and assurance services in Australia. North Ryde. *Australia: McGraw-Hill Education*.

Harris, M., & Raviv, A. (1991). The theory of capital structure. *the Journal of Finance, 46*(1), 297-355.

International Auditing and Assurance Standards Board. (2009). *International standard on auditing 315 identifying and assessing the risks of material misstatement through understanding the entity and its environment* (Standard No. 315). IAASB. Retrieved from http://www.ifac.org/system/files/downloads/a017-2010-iaasb-handbook-isa-315.pdf

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial Economics, 3*(4), 305-360.

Jerzemowska, M. (2006). The main agency problems and their consequences. *Acta Oeconomica Pragensia, 14*(3), 9-17.

Jusoh, M. A., Ahmad, A., & Omar, B. (2013). Managerial ownership, audit quality and firm performance in Malaysian. *International Journal of Arts and Commerce, 2*(10), 45-58.

Kanagaretnam, K., Lobo, G. J., & Whalen, D. J. (2007). Does good corporate governance reduce information asymmetry around quarterly earnings announcements? *Journal of Accounting and public Policy, 26*(4), 497-522.

Kaplan, S. N., & Reishus, D. (1990). Outside directorships and corporate performance. *Journal of financial Economics, 27*(2), 389-410.

Martinez, A. L., & da Jesus Moraes, A. (2014). Association between independent auditor fees and firm value: A study of Brazilian public companies. *Journal of Modern Accounting and Auditing, 10*(4).

Masulis, R. W. (1988). *The debt/equity choice*: Financial Management Assoc.

Matoke, V. N., & Omwenga, J. (2016). Audit quality and financial performance of companies listed in Nairobi securities exchange. *International Journal of Scientific and Research Publications, 6*(11), 2250-3153.

Miettinen, J. (2011). The role of audit quality on the relationship between auditee's agency problems and financial information quality. *department of accounting and finance, university of Vaasa, Finland*.

Minnis, M. (2011). The value of financial statement verification in debt financing: Evidence from private US firms. *Journal of accounting research, 49*(2), 457-506.

Moutinho, V., Cerqueira, A., & Brandao, E. (2012). Audit fees and firm performance. *Available at SSRN 2180020*.

Nikkinen, J., & Sahlström, P. (2004). Does agency theory provide a general framework for audit pricing? *International Journal of Auditing, 8*(3), 253-262.

Phan, T., Lai, L., Le, T., & Tran, D. (2020). The impact of audit quality on performance of enterprises listed on Hanoi Stock Exchange. *Management Science Letters, 10*(1), 217-224.

Rezaee, Z., Espahbodi, R., Espahbodi, P., & Espahbodi, H. (2012). Firm characteristics and stock price reaction to SOX 404 compliance. *Abacus, 48*(4), 473-501.

Ross, S. A. (1973). The economic theory of agency: The principal's problem. *The American economic review, 63*(2), 134-139.

Shivaram, R., Suraj, S., & Zheng, X. (2021). Measuring audit quality. *Review of Accounting Studies, 26*(2), 559-619.

Skaife, H. A., & Warfield, T. (2003). Audits as a Corporate Governance Mechanism: Evidence from the German Market. *Available at SSRN 415100*.

Van Tendeloo, B., & Vanstraelen, A. (2008). Earnings management and audit quality in Europe: Evidence from the private client segment market. *European Accounting Review, 17*(3), 447-469.

Watts, R. Zimmerman (1986). Positive accounting theory. *Edgewood Cliff, NJ*.

Woodland, A. M., Reynolds, J. K., & Scholar, C. D. (2003). Restatements and audit quality. *Journal of Accounting and public Policy, 15*, 55-79.