



Pacific Accounting Review

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Article information:

To cite this document:

Rabih Nehme, Mohammad Jizi, (2018) "The efficiency of corporate boards and firms' audit fees: the case of the FTSE financial institutions", Pacific Accounting Review, Vol. 30 Issue: 3, pp.297-317,

<https://doi.org/10.1108/PAR-12-2016-0116>

Permanent link to this document:

<https://doi.org/10.1108/PAR-12-2016-0116>

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The efficiency of corporate boards and firms' audit fees: the case of the FTSE financial institutions

Corporate
boards and
firms' audit
fees

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Abstract

Purpose – The quality of financial reporting for the financial institutions is vital for the public, as the negative consequences of manipulated financial statements will not only affect shareholders but also the regulators' reputation and the society at large. The purpose of this paper is to assess the association between different corporate governance mechanisms and their impact on audit and reporting quality. The gender factor is introduced from a diverse boards' perspective to highlight any impact of female presence on the quality of financial statements.

Design/methodology/approach – The authors examine a sample of financial institutions listed on the FTSE-350 index for the years 2011 to 2015. The financial sector has its own and different regulations, and financial reporting framework and auditors are expected to behave into more scrutiny. Bloomberg database is used to obtain governance and financial data, while firms' annual reports are used to collect audit fees and audit committee information. A panel data regression is used to test hypotheses. The authors also control for unobservable heterogeneity, reverse causality and endogeneity.

Findings – The results suggest that boards with larger size and higher independence pay higher audit fees to enhance the monitoring capacity and protect the wider group of stakeholders. The results also show that women on boards are likely to reduce the risk of manipulated financial statements, as women are more inclined toward truthfulness, cautiousness and conservatism. In addition, the reported results show that audit committees with more independent members are more inclined toward obtaining higher quality audit to enhance firm's reporting quality.

Originality/value – Given the recent governments' intervention to avoid financial institutions' negative impact on the economy, this study is relevant and provide policymakers insights into the existing relationships between audit fees and financial institutions' governance structure.

Keywords Audit committee effectiveness, Audit fees, Board structure, Board gender diversity, External auditors

Paper type Research paper

Introduction

The aim behind the issuance of corporate governance codes is to deliver sound corporate governance to improve monitoring over management practices, accountability and transparency for the long-term success of the business. The succession of corporate governance codes from Cadbury report to the latest UK corporate governance code recommends on the importance of board composition for effective functioning. As effective boards care for long-term firm viability, they seek to disseminate high-quality and reliable information to the wide range of stakeholders to limit the uncertainty gap and manage the issue of information asymmetry (Cohen *et al.*, 2002; Zaman *et al.*, 2011; Jizi and Dixon, 2017). Therefore, the role of public accounting is vital to provide assurance over the reliability of the disclosed financial statements and their freedom from material



misstatements. Improper audit opinions and aggressive use of management estimates could be minimized through the presence of an active/effective board of directors and a demanding audit committee for better audit quality. Also, the presence of the mentioned governance mechanisms helps in protecting auditors' independence as well (Zaman *et al.*, 2011).

The tasks performed by external auditors have always been a controversial issue regarding their nature, scale, and responsibility. According to the latest UK corporate governance codes, the Board of Directors is accountable to appoint external auditors, participate with external auditors in non-audit projects, re-appoint external auditors, form audit committees to collaborate with external auditors and agree on audit fees. Expert audit committee directors tend to recommend assigning industry specialist external auditor for better audit outcome. It is noted that effective audit committees and independent BoD demand better quality leading to an increase in audit fees (Abbott and Parker, 2000). Potential gaps with external auditors are reduced by incurring less agency costs associated with the presence of independent BoD (Uang *et al.*, 2006). The presence of the agency problem, if not minimized, has a serious effect on external auditors. Several studies have previously determined factors that influence audit fees and auditors' performance which in turn will affect the audit/accountancy profession as well the auditees (Lin and Liu, 2009).

In addition to the different mechanisms of an effective corporate governance mechanisms, previous literature mentions that corporate decisions are better achieved in the existence of female directors (Thiruvadi, 2012). Women are effectual governance players and their participation in a leading position influences firms' performance (Colaco *et al.*, 2011). Firms with gender diverse boards are likely to have higher earnings quality and information transparency (Post and Byron, 2015). Prior research suggests that female directors exercise better monitoring, encourage quality disclosures and are less self-oriented (Huse and Solberg, 2006; Gul *et al.*, 2011). However, some recent studies have introduced the female factor in the audit fees research (Lai *et al.*, 2017), but from an audit committee's perspective rather than board of directors. Being a member of audit committees is expected to have an impact on audit fees. Also, the aforementioned study focuses on a sample of non-financial institutions, while our study focuses on a complicated sector of the industry, financial institutions and how different corporate governance mechanisms impact the demand side of audit pricing. As UK Corporate Governance code (2014) and Davis reports encourage gender diverse boards, this research provides policy maker insights into the relation between women on board and financial reporting quality and whether setting a gender cap may have an impact on boards effectiveness. Women on boards are likely to reduce the risk of manipulated financial statements, as they are more inclined toward truthfulness, cautiousness and conservatism. We examine further the impact of audit committee effectiveness on audit fees by assessing audit committee effectiveness dimensions. Audit committees with relatively more independent members are more inclined toward obtaining higher quality audit to enhance firm's internal control system and reporting quality.

Society, economy and a wide number of stakeholders are negatively affected if the financial sector is poorly governed. A better quality audit is the demand of not only potential shareholders but also to the public trust and regulators. The importance of our research is that it is covering the listed financial institutions at the FTSE 350 in the UK. The financial crisis was mainly around the financial sector (Brunnermeier, 2009); unlike other sectors of the market, the financial sector has its own and different regulations and financial reporting framework. Auditors are expected to behave into more scrutiny when auditing banks, as they are considered part of the market equity (Kanagaretnam *et al.*, 2010). More scrutiny in auditing banks' voluminous transactions and critical accounting assumptions and estimates

push auditors to spend more time leading to an increase in audit fees. [Boo and Sharma \(2008\)](#) focus on the supply side of audit pricing and how external auditors adjust their audit fees based on the type of companies they audit. Also, [Fields *et al.* \(2004\)](#) use the supply side in audit pricing. Their study is based on the level of risks faced by external auditors and how auditors change their audit fees accordingly. Our research aims in exploring the demand side of audit fees and how corporate governance mechanisms, along with introducing the female factor on board, are related to audit fees. We are assessing an understudied market sector notwithstanding its significant impact of a wide number of stakeholders ([Kanagaretnam *et al.*, 2010](#)). To the best of our knowledge, this is the first study that introduces the female factor in the banks' corporate governance to assess its association with audit fees.

Our study is pertinent and aids policymakers with visions into the current association between audit fees and the banking sector governance structure. We investigate the determinants of audit fees as a measurable agency cost ([Leventis *et al.*, 2011](#)). The study continues as follows: First, critical review of the previous literature and hypotheses development is provided. Then, the next section briefly covers the population and sample selection criteria with independent and dependent variables' definition. The main results are discussed next. Finally, the conclusion and research implications are given.

Prior literature and hypotheses' development

The demand and supply of audit pricing

A well-established control framework and effective corporate governance mechanisms may demand more audit quality leading to more audit fees. Or a weak control environment may push external auditors to assess their clients as "weak" with more audit premium charged. From a "demand" point of view, [Tsui *et al.* \(2001\)](#) argue that corporations with high potential growth and independent board members demand more audit quality. The same argument is supported by [Bliss \(2011\)](#) where independent board members have an appetite for more audit quality leading to more work by external auditors; accordingly, higher audit fees. The size of a company may impact audit fees. Big companies with active committee members require higher level of assurance from external auditors leading to an increase in audit fees ([Krishnan and Visvanathan, 2009](#)).

Whereas from a "supply" point of view, banks with a huge volume of transactions, critical estimates used, involved in acquisition assignments require more examination from external auditors leading to an increase in the audit fees ([Fields *et al.*, 2004](#)). [Ettredge *et al.* \(2014\)](#) conclude that auditors specialized in auditing banks may lower their audit fees as a result of the amassing of knowledge in the banking industry. On the other hand, banks involved in using critical accounting estimates are charged at a higher rate to compensate the increase in risk assessment for such clients. [Krishnan and Visvanathan \(2009\)](#) conclude that companies with deficit figures are also charged higher audit fees due to the tolerated risk by the auditors. Large audit committees indicate a high risk profile leading to an increase in audit fees. However, the existence of independent directors may indicate a healthy company pushing auditors to charge less ([Hines *et al.*, 2015](#)). Our research is observing mainly the demand side of audit fees in developing the hypotheses discussed later in the text.

Board characteristics

Board size. Corporate boards of directors vary in their technical and educational backgrounds. Boards which are relatively large in size benefit from diversification in directors' experiences ([Zahra and Pearce, 1989](#)) that help in increasing the ability to control management ([Monks and Minow, 1995](#)). While smaller boards are likely to be more effective

in coordination and communication (Dey, 2008). Board size is an independent governance attribute (Beiner *et al.*, 2004) and seeks quality reporting (Anderson *et al.*, 2004).

Anderson *et al.* (2004) claim that the larger the board size, the better the control over the financial reporting process. Within the same context, research by Jizi (2015) shows that boards with larger size are more inclined toward transparency in their financial reporting. Ellwood and Garcia-Lacalle (2015) find that audit fee is not affected by the size of the board, but legal and consultancy fees. Audit and consultancy needs are positively associated with board size where better reporting quality is demanded. More work from external auditors, as a result of achieving a better audit quality, leads to an increase in audit fees (Guest, 2008). Carcello (2002) argues that bigger board comprising attentive and independent members as for more level of assurance and demand better audit quality. Accordingly, more work is associated with more chargeable hours leading to an increase in audit fees. The first hypothesis to be empirically tested is the following:

- H1. There is a positive and significant relationship between boards of directors' size and audit fees.

Board independence. Independent board members aid in the execution of strategic plans and partake in the monitoring process when dominant shareholders are present (Long *et al.*, 2005). It is said that independent boards are expected to pay higher audit fees by assigning better quality auditors in the absence of active capital market and strong regulated environment (Khan *et al.*, 2015). Independent board members care about their reputational wealth and accordingly; they have a greater drive than executive directors to monitor management (Fama and Jensen, 1983). This will lead to the alleviation of agency cost. As independent members are more cautious toward reputational and financial losses, corporations who have more independent directors assign more quality auditors (Abbott and Parker, 2000).

Better reputable auditors are demanded when the Board of Directors consists of more independent directors (Chen and Zhou, 2007). A larger mainstream of independent board members will be more concerned about the audit quality than executive directors (Carcello *et al.*, 2002). This will nurture the aim to "purchase" higher quality audit service to safeguard reliable financial information, consequently leading to a rise in the audit fees. Independent board of directors has a tendency toward having a better audit outcome in comparison to executive board members (Carcello and Neal, 2003). They prefer more credible financial statements that require more work from external auditors leading to an increase in audit fees. Reduced agency cost is associated with the existence of non-executive BoD, who have a vital role in reducing the gap with external auditors and producing a better reporting package (Uang *et al.*, 2006). The hypothesis to be empirically tested is the following:

- H2. There is a positive and significant relationship between the proportion of board independent directors and audit fees.

Women on board. Female representation on corporate boards has created a new governance debate as gender diverse boards attract extensive attention and turned to be a significant governance factor (Snaebjornsson and Edvardsson, 2013). Female directors are more committed and less self-oriented, and their behavior differs from their male counterparts (Huse and Solberg, 2006). Consequently, board governance processes and effectiveness are influenced by board gender diversity (Adams and Ferreira, 2009). Women succeed to prove their active role when performing governance activities, reflecting their ability to have more self-reliant oversight and better decision quality (Colaco *et al.*, 2011). Mallin and

Michelon (2011) show that higher women participation enhances board governance through considering the interest of multiple stakeholders and improving the vigilance role of the board.

Board monitoring capacity is influenced by its composition (John and Senbet, 1998). It is argued that female directors care more for transparency and disclosing quality information as well as monitor closely management practices (Gul *et al.*, 2011; Post and Byron, 2015). When female directors participate in audit committees, they tend to improve the monitoring role of committees and demand more audit quality. Thiruvadi (2012) states that corporate decisions and audit committees' effectiveness are better achieved in the existence of female directors. The risk averse behavior of women plays a significant role in minimizing fraudulent financial reporting (Lenard *et al.*, 2017). The high level of commitment to ethical policies and procedures minimizes the chances where companies may be involved in litigation and fraudulent financial reporting. Xiang and Qin (2017) mention that the academic and professional background of women audit committee directors are highly associated with a demand for a better audit quality. Accordingly, the presence of female directors is negatively associated with fraud incidents in the financial reporting. The hypothesis to be empirically tested is the following:

- H3. There is a positive and significant relationship between board gender diversity and audit fees.

Audit committee effectiveness

It is claimed that the larger the audit committee size, the more authority is present (Kalbers and Fogarty, 1993) and broader knowledge is owned (Karamanou and Vafeas, 2005). In contrast, smaller audit committees depend on external auditors to achieve a high disclosure quality. This interpretation indicates that the characteristics of both external audit and audit committee can be substituted by means of a corporate governance mechanism. Zaman *et al.* (2011) conclude a positive relationship between audit committee size and the quality of internal control, as larger audit committee size improves effectiveness and resource management resulting in higher amounts paid on audit.

The study of Carcello and Neal (2003) finds that audit committee independence is negatively correlated to the dismissal of external auditors after issuing a going-concern audit opinion. From the supply standpoint, independent non-executive directors' presence in the audit committee will strengthen internal controls, which will lead to lower audit fees due to less assessment requirements from external auditors (Collier and Gregory, 1996).

According to Chen and Zhou (2007), the number of audit committee meetings is linked to audit committee effectiveness. It is stated that there is a significant positive relationship between audit committee meetings and the assignment of a Big Four audit firm. Audit committee success and effectiveness are significantly and positively related to a better choice of expert auditors (Abbott and Parker, 2000). In contrast, with fragile corporate governance, companies appoint lower quality auditors (Lin and Liu, 2009). As members of the committee meet more, they are able to minimize financial reporting issues (Farber, 2005). Lee *et al.* (2004) argue that there is no relationship between the frequency of audit committee meetings and the assignment of another audit firm and auditor resignation. Frequent meetings among members of the audit committee may be seen as a way to lessen audit fees, but the opposite is true; more effort and time are required from external auditors which will lead to higher audit fees (Krishnan and Visvanathan, 2009).

The following is mentioned in the UK corporate governance code Section C3.1: “The board should satisfy itself that at least one member of the audit committee has recent and relevant financial experience [UK Corporate Governance code, 2014]”. The audit committee with financial expertise is considered to have better skills (Cohen *et al.*, 2002). Kent and Stewart (2008) argue that the less audit committee financial experts are present, the more the reliance on external auditors. Regarding audit fees and financial expertise of audit committee members, there is an insignificant positive relationship between the two, but a significant relationship between audit fees and accounting expertise (Krishnan and Visvanathan, 2009). Financial experts’ existence in the audit committee has a positive effect on the quality of the audit in relation to the agency theory and its role in resolving conflicts between principals and agents. Audit fees increase because experts demand a high audit quality (Sharma, 2003). Krishnan and Visvanathan (2009) conclude that there is an insignificant positive relationship between audit fees and financial experts in audit committees. The hypothesis to be empirically tested is the following:

- H4. There is a positive significant relationship between audit committee effectiveness and audit fees.

Research design

Sample selection and data collection

The pressure left in the financial markets after the recent financial crisis (Grove *et al.*, 2011) elevates the importance of quality financial reporting, which is likely to stress on boards’ reliance on external auditors to ensure sound financial statements. The FTSE 350 is an index built on “market capitalization weighted stock market incorporating the largest 350 companies by capitalization, which have their primary listing on the London Stock Exchange” (FTSE, 2010). Hence, the study aims at providing a better understanding on how audit fees associate with firm governance after the recent financial crisis knowing that many stakeholders and economists were questioning the role of the external auditors after several accounting discredits. The aim of examining solely financial institutions is to appreciate the difference in reporting regulations and regulators requirements compared to non-financial firms (Jizi and Dixon, 2017; Nehme *et al.*, 2015; Nehme, 2017). This is likely to increase the effort performed by external auditors. In analyzing data, we aim at determining if the FTSE 350 financial institutions are conscientious with the Combined Corporate Governance Code and its “Comply and Explain” approach.

Bloomberg database is used to identify the FTSE 350 listed financial institutions and to collect the required data. The initial sample size for the years 2011-2015 consisted of 565 observations distributed as follows: six banks, 69 financial service company, 17 insurance company and 21 real estate companies per year. To collect data on audit fees and audit committee characteristics, we downloaded firms’ annual reports. Each annual report was visited manually to collect data on audit fees, audit committee size, audit committee independence and audit committee financial experts. The audit fees collected are the annual statutory audit fees payable to the company’s auditor for the audit of the financial statements. Fees payable by the company on audit related services such as fees paid on tax advisory and/or consulting services are excluded. Due to missing data, the examined data set comprises 221 observations for the five years period. Table I shows the examined observations by year and by type of financial sector.

Control variables

In line with contemporaneous literature (Carcello and Neal, 2003; Stroh, 2006; Collier and Gregory, 1996; Abbott and Parker, 2000; Dao *et al.*, 2008), we use a set of variables to control for financial institutions' performance and board activities. Carcello *et al.* (2002) mention that there is a positive relationship between the level of audit fees and diligent board of directors. Firms that are characterized by frequent board of directors meetings tend to "purchase" more directors and officers insurance policy (Chung *et al.*, 2015). Diligent boards of directors are measured by the number of board meetings held during a fiscal year (Srivastava *et al.*, 2015). On the other hand, Beck and Mauldin (2014) state that there is no significant relationship between audit fees and board meetings.

Large companies retain their auditors to avoid financial markets' pressure and specialists' inspections (Carcello and Neal, 2003). Within the same context, Haskins and Williams (1990) show that large companies are less likely to discharge skilled external auditors because they aim for a good audit quality leading to high audit fees. Therefore, firm's total asset is used to control for firm size and complexity. To control for the institution risk and account for its influence on pricing the audit assignment, both leverage and firm systematic risk are used. Institution's leverage and systematic risk are important measures providing managers, shareholders and borrowers with clear indicators of firm risk, expected default and level of return volatility (Stroh, 2006; Collier and Gregory, 1996). Debt, according to prior research, is used as an indicator of a healthy company. It encourages managers to perform better to escape from the pressure of creditors and being unemployed in times of financial crisis (Masulis *et al.*, 2007; Chen *et al.*, 2010). It is critical to include the leverage and beta variables to assess companies' risk (Fan and Wong, 2005).

High profitable firms have high likelihood to pay high audit fees for a better audit quality (Abbott and Parker, 2000). Profitability is used to regulate the auditor-client relationship (Dao *et al.*, 2008). To control for the impact of the financial institution financial performance on audit fees, institution's profitability measured by the return on assets (ROA) ratio is introduced to the examined models.

Audit committee effectiveness

The selection of a highly qualified and specialized auditor is considerably determined by the effectiveness of the audit committee (Abbott and Parker, 2000). Research into audit committee structure highlights the connotation of audit committee size, members' independence, financial expertise and meeting frequency with the audit committee effectiveness (Cohen *et al.*, 2002; Kalbers and Fogarty, 1993; Chen and Zhou, 2007). In-line with the UK Corporate governance code and following Zaman *et al.* (2011), four dimensions are considered to determine the effectiveness of the audit committee, namely, audit committee size, percentage of independent members, number of financial experts and the numbers of meetings held in a given year. The UK Corporate governance code mandates the

Year	Banks	Financial services	Insurance	Real-estate	Total
2011	5	21	13	7	46
2012	5	22	15	11	53
2013	5	20	13	12	50
2014	5	22	13	12	52
2015	5	8	1	6	20
<i>Total</i>	25	93	55	48	221

Table I.
Sample distribution

establishment of an audit committee that comprises at least three independent non-executive members. Additionally, the board should appoint among the audit committee members at least one financial expert. Hence, in line with [Zaman et al. \(2011\)](#), we first transferred the four audit committee characteristics into dummy variables. A value of one is given if the audit committee comprises at least three members and zero otherwise. A value of one is given if all audit committee members are independent and zero otherwise. A value of one is given if the audit committee has more than one financial expert. A value of one is given if the audit committee has met more than four times a year, which is the sample mean. Then audit committee effectiveness variable is constructed by adding up the four dummy variables. Therefore, the audit committee effectiveness variable has a value that varies between zero (low effective audit committee) and four (high effective audit committee).

The models

To test the hypotheses, we use the below models:

$$\text{LAF}_t = \alpha + \beta_1 \text{BS}_t + \beta_2 \text{BI}_t + \beta_3 \text{WB}_t + \beta_4 \text{ACE}_t + \beta_5 \text{BM}_t + \beta_6 \text{NAF}_t + \beta_7 \text{ROA}_t \\ + \beta_8 \text{Lev}_t + \beta_9 \text{SIZE}_t + \beta_{10} \text{Beta}_t + \beta_{11} \text{Volatility} + \epsilon$$

$$\text{LAF}_t = \alpha + \beta_1 \text{BS}_t + \beta_2 \text{BI}_t + \beta_3 \text{WB}_t + \beta_4 \text{ACS}_t + \beta_5 \text{ACFE}_t + \beta_6 \text{ACI}_t + \beta_7 \text{BM}_t \\ + \beta_8 \text{ACM}_t + \beta_9 \text{NAF}_t + \beta_{10} \text{ROA}_t + \beta_{11} \text{Lev}_t + \beta_{12} \text{SIZE}_t + \beta_{13} \text{Beta}_t \\ + \beta_{14} \text{Volatility} + \epsilon$$

where α , the intercept; $\beta_1 \dots \beta_n$, the regression coefficients; t , period indicator; and ϵ , the error term ([Table II](#)).

Results and discussion

Descriptive statistics

FTSE 350 listed financial institutions paid audit fees in the period between 2011 and 2015 that vary between GB£32,000 and GB£34.7m. The audit fees have a mean of 1.98m and a standard deviation of 4.82m.

The [UK Corporate Governance code \(2014\)](#) points that board size should be sufficient enough to meet the requirement of the business and its challenges. The results show that FTSE 350 financial institutions' boards size ranges between 3 and 21 directors. Benchmarking the board size mean (10.4) with [Jizi et al.'s \(2014\)](#) study, which examines US national commercial banks between 2009 and 2011, we find that FTSE financial institutions have similar board size range; however, smaller boards mean. The size of national commercial US banks' boards ranges between 5 and 21 with a mean of 12.4.

The percentage of independent directors in our sample varies between 14 and 100 per cent with a mean of 56 per cent. Compared to [Jizi et al. \(2014\)](#), our results show that board independence in US national commercial banks is higher than FTSE 350 financial firms. According to their study, board independence varies between 50 and 94 per cent with a mean of 81 per cent. This might be explained by the increasing regulatory pressure on listed institutions to increase the proportion of independent directors on their boards. "Section 303A of the NYSE's Listed Company Manual, meant that the mostlisted companies were required to have a majority of independent directors on their boards" ([Jizi et al., 2014](#), p. 608).

Table II.
Variable definitions

Variable name	Variable descriptions
LAF	The logarithm of the audit fees
BS	Number of directors on the board
BI	The number of independent directors on the board to the total number of directors
BI	A dummy variable that takes a value of 1 if the percentage of independent directors is greater than the overall mean independence level and 0 otherwise
WB	A dummy variable giving a value of 1 if woman is present on board and zero otherwise
ACS	The number of members in the audit committee
ACI	The number of independent committee members to the total number of members
ACFE	The number of financial experts serving in the audit committee to the total number of members
ACM	The number of meeting held by the audit committee in a year
ACE	The audit committee effectiveness is computed in line with <i>Zaman et al. (2011)</i> based on four dimensions; audit committee size, independent members, number of financial experts and frequency of meetings
NAF	The logarithm of the non-audit fees paid by a given firm
ROA	Net income over total assets
BM	The number of board of directors meetings held in a corresponding year
Lev	Debt divided by the total assets
Size	The logarithm of total assets in the corresponding year
Beta	The slope coefficient of regressing the firm's daily excess return on the market risk premium
Volatility	The standard deviation of daily stock return

[UK Corporate Governance code \(2014\)](#) stresses on the importance of board diversity in achieving sufficient functioning. The presence of women on the board of directors is positively related to board effectiveness, as they behave in a different way than male directors ([Adams and Ferreira, 2009](#)). The percentage of female directors in the examined sample varies between 0 and 33 per cent having a mean of 9.5 per cent and a standard deviation of 8.

The number of the audit committee members ranges between three and seven committee members with a mean of 4.17. While the UK corporate governance code mentions that audit committees should comprise at least three independent members (two for small firms) and one financial expert, there is no impression to the sufficient percentage of audit committee independence. Our results show that the number of independent audit committee members ranges between two and seven members. Contrary to the UK corporate governance code, some financial institutions have no financial expert in the audit committee, while the maximum is six members.

Hypotheses testing

In this section, we explore whether the composition of the boards of directors and the audit committees influence audit fees. We started by examining the effect of board independence, using both the percentage of independent directors on the board and an independent dummy variable, along with the audit committee effectiveness on the audit fees. In the second set of regressions, we replace the audit committee effectiveness variable by the audit committee size, independence, number of financial experts and frequency of meetings. To test for potential multi-collinearity, we used Spearman correlations matrix and VIF-tests. [Table III](#) suggests no threat of serious collinearity in the examined model. Breusch–Pagan/

Table III.
Summary descriptive
statistics

Statistical measures	Audit fees (in 000s)	BS	BI	WB	ACS	ACFE	ACI	ACM	BM	NAF (in 000s)	SIZE (in billions)	ROA	Lev	Beta	Volatility
Mean	1,984.16	10.40	55.60	9.54	4.17	2.73	4.01	4.97	8.77	3,573	134.0	0.017	0.66	0.85	37.68
Median	400.00	10	55.56	10	4	3	4	4	8	681	3.07	0.01	0.68	0.82	33.38
SD	4,821	2.98	13.38	7.99	1.00	1.35	0.98	2.22	3.86	7,564	427.0	0.12	0.26	0.43	19.83
Skewness	4.46	0.59	-0.01	0.30	0.71	0.20	0.63	1.87	1.81	4.36	4.18	-2.06	-0.51	0.74	1.52
Kurtosis	25.23	3.58	5.22	2.26	3.12	2.32	2.95	8.54	8.02	25.35	20.64	19.90	2.34	4.46	6.48
Minimum	32.00	3	14.0	0.00	3	0.00	2	2	2	0	0.153	-0.96	0.00	-0.02	5.34
Maximum	34,700	21	100	33.33	7	6	7	17	28	56,600	250.0	0.56	0.99	2.7	148.24

Notes: BS: board size; BI: board independence; WB: women on board; ACS: audit committee size; ACFE: audit committee financial experts; ACM: audit committee meetings; BM: board meetings; NAF: non-audit fees; Size: total asset size; ROA: return on assets; Lev: leverage; Beta: firm systematic risk; Volatility: stock return standard deviation (total risk)

Cook–Weisberg test are also used to test for heteroskedasticity. The tests show no indicators of heteroskedasticity.

Table IV Models (1) and (2) present a panel data fixed-effect regression of audit fees on board structure and audit committee effectiveness variables along with a set of control variables. Using both board independence measures, our results suggest that audit fees are positively influenced by the board independence and the effectiveness of the audit committee, while it is negatively related with women presence on board. Board independence is statistically significant at $p < 0.01$, while audit committee effectiveness, board size and women on board are significant at $p < 0.05$. With respect to Models (3) and (4), where we replace the audit committee effectiveness variable by the audit committee characteristics, we find analogue results in relation to board variables, while audit committee independence is the only audit committee significant variable at $p < 0.1$ and positively related to audit fees. In addition, while leverage and board meetings are significant at $p < 0.01$ and negatively related to audit fees, firm asset size is positively significant at $p < 0.01$. The regressions result show that the examined models are significant at $p < 0.01$, explaining 67 per cent of the change in the audit fees.

It is argued that boards with larger number of directors provide better monitoring over the process of financial reporting (Anderson *et al.*, 2004). In complex corporations, as financial institutions (Grove *et al.*, 2011), boards with relatively larger size are more likely to benefit from diversified expertise and less workload (Zahra and Pearce, 1989). Accordingly,

Independent variables	Model (1)	Model (2)	Model (3)	Model (4)
	Coeff. p -value	Coeff. p -value	Coeff. p -value	Coeff. p -value
Board size	0.797** (0.024)	0.056 (0.100)	0.077** (0.046)	0.049 (0.185)
Board independence	0.020*** (0.001)		0.020*** (0.001)	
Independence dummy		0.311** (0.045)		0.287* (0.057)
Women on Board	-0.353** (0.016)	-0.304** (0.030)	-0.402** (0.021)	-0.401*** (0.001)
Board meetings	-0.051*** (0.002)	-0.045** (0.011)	-0.058*** (0.001)	-0.052*** (0.006)
Audit committee size			0.006 (0.950)	0.023 (0.804)
Audit committee independence			3.173* (0.054)	3.486** (0.044)
Audit committee financial experts			-0.048 (0.392)	-0.033 (0.556)
Audit committee meetings			0.0460 (0.259)	0.0350 (0.399)
Audit committee effectiveness	0.398** (0.012)	0.418** (0.012)		
Non-audit fees	0.127 (0.182)	0.117 (0.211)	0.094 (0.329)	0.084 (0.369)
ROA	-0.113 (0.776)	-0.128 (0.753)	0.042 (0.918)	0.049 (0.910)
Leverage	-1.151*** (0.000)	-1.235*** (0.000)	-1.097*** (0.001)	-1.191*** (0.001)
Asset Size	1.111*** (0.000)	1.204*** (0.000)	1.127*** (0.000)	1.226*** (0.000)
Beta	0.202 (0.383)	0.132 (0.574)	0.225 (0.330)	0.156 (0.500)
Volatility	-0.003 (0.558)	-0.003 (0.489)	-0.002 (0.708)	0.002 (0.605)
Constant	-0.721 (0.535)	-0.491 (0.667)	-2.371 (0.196)	-2.351 (0.213)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Adjusted R -squared	0.674	0.665	0.682	0.673
Prob > F	0.000	0.000	0.000	0.000

Notes: Table IV presents Panel Fixed-effect Linear regressions estimating the relationships between corporate governance variables and the audit fees among several control variables. The sample period is from 2011 to 2015. Year dummies are included to control for year specific characteristics. Following White (1980), we account for potential heteroskedasticity using the Robust standard errors. The asterisks ***, **, * denote significance at the 1, 5, and 10% level, respectively

Table IV. Audit fees and the structure of the board and the audit committee

corporate boards are likely more efficient in allocating their time on activities to achieve effective monitoring (John and Senbet, 1998). Models (1) and (3) of Table V suggest a direct relationship between board size and audit fees, supporting *H1*. However, the significant relationship between board size and audit fees is not robust as Models (2) and (4), which show no statistical significance for board size variable.

The estimated positive association between higher board independence and the audit fees is also documented. Using both the percentage of independent directors and the high-low independent dummy variable, the estimated regressions show analogue results. Our results suggest that boards' independent directors intensify the effectiveness and efficacy of the firm's monitoring through external auditors (Fama and Jensen, 1983; Weisbach, 1988). In-line with agency theory, independent directors on corporate boards seek high-quality audit to protect stockholders' wealth and their reputation from management misbehavior. This results in higher audit fees. Pervious literature highlights the inclination of independent directors toward hiring quality auditors (Abbott and Parker, 2000; Chen and Zhou, 2007) to achieve better reporting quality (Uang *et al.*, 2006). That is, similar to Carcello *et al.* (2002) and Zaman *et al.* (2011) results, audit fees are directly influenced by the percentage of independent directors on the boards.

The presence of women on corporate boards is statistically significant and negatively influencing audit fees. The reported results suggest that women board participation is likely associated with better control activities and more self-monitoring. Accordingly, diverse board of directors demands less work from external auditors. Our results support the argument that women are self-reliant and tend to improve the vigilant role of the board of directors (Colaco *et al.*, 2011; Mallin and Michelin, 2011). According to "Morgan Stanley Capital International", boards having female directors are less subject to scandals related to fraud, bribery or corruption (Steel, 2015). Moreover, female presence on boards has been found to reduce firms' risk and enhance firms earning quality (Krishnan and Parsons, 2008; Gul *et al.*, 2011; Kehoe, 2015). In this context, Christine Lagarde, the first women to be the managing head of the IMF and the first female finance minister of France, called on financial institutions to participate women in leadership to become less risky (Kehoe, 2015). The favorable influence that female directors have on firm risk and board performance quality might be explained by women psychological and/or biological aspects concerning truthfulness, cautiousness and risk conservatism (Niederle and Yestrumskas, 2008).

Similar to Zaman *et al.* (2011), arguing that firms with more effective audit committees incur higher audit fees, our findings support the audit committee effectiveness' hypothesis suggesting a direct association between audit committee effectiveness and audit fees. This implies that effective audit committees demand broader audit scope to enrich their monitoring capacity, which in-turn increases the chargeable hours (Abbott and Parker, 2000; Chen and Zhou, 2007). Audit committees are in charge of overseeing the financial reporting process and ensuring its integrity (Krishnan and Visvanathan, 2009) as well as approving the engagement terms with external auditors. Consequently, more effective audit committees seek extended audit work to enhance the quality of audit work and to develop confidence in the reliability of financial statements. Ultimately, this supports the role of the board of directors in facilitating sound governance environment to protect shareholders interest.

When examining the four dimensions of the audit committee characteristics (Models 3 and 4), the results indicate that audit committee independence is the only dimension significantly related to audit fees. This suggests that independent audit committee members are more concerned to ensure that external auditors are exercising sufficient professional skepticism and that major audit risks are addressed. That is, to achieve a higher level of

Variables	VIF	LAF	BS	BI	WB	BM	ACS	ACI	ACFE	ACM	NAF	ROA	Lev	Size	Beta	Volatility
BS	2.94	0.45*	1.00													
BI	1.75	0.40*	0.02	1.00												
WB	1.36	0.18*	0.42*	0.17*	1.00											
BM	1.65	0.15*	0.13	0.23*	0.18*	1.00										
ACS	1.59	0.26*	0.40*	0.18*	0.21*	0.19*	1.00									
ACI	1.30	0.11	0.11	0.02	0.13	0.12	-0.15*	1.00								
ACFE	1.45	0.17*	0.27*	0.16*	0.04	0.24*	0.37*	0.15*	1.00							
ACM	2.20	0.42*	0.48*	0.24*	0.24*	0.37*	0.20*	0.17*	0.31*	1.00						
NAF	2.13	0.53*	0.36*	0.30*	0.30*	0.34*	0.19*	0.03	0.23*	0.47*	1.00					
ROA	1.28	-0.24*	-0.24*	-0.11	-0.08	-0.26*	-0.07	-0.07	-0.07	-0.14	-0.31*	1.00				
Lev	2.80	0.43*	0.49*	0.20*	0.24*	0.34*	0.19*	0.05	0.30*	0.48*	0.45*	-0.44*	1.00			
Size	6.66	0.75*	0.60*	0.40*	0.31*	0.32*	0.34*	0.02	0.26*	0.51*	0.62*	-0.39*	0.72*	1.00		
Beta	2.86	0.47*	0.23*	0.24*	0.13	0.30*	0.26*	-0.10	0.26*	0.30*	0.48*	-0.30*	0.34*	0.53*	1.00	
Volatility	2.63	0.06	0.12	-0.03	0.11	0.12	-0.02	-0.01	0.08	0.05	0.16*	-0.29*	0.23*	0.12	0.24*	1.00

Notes: * $p < 0.05$; LAF: Logarithm of Audit fees; BS: board size; BI: board independence; WB: women on board; ACS: audit committee size; ACFE: audit committee financial experts; ACM: audit committee meetings; BM: board meetings; NAF: Non-audit fees; Size: total asset size; ROA: return on assets; Lev: leverage; Beta: firm systematic risk; Volatility: stock return standard deviation (total risk)

Table V.
Spearman
correlations matrix

assurance and more reliable financial reporting process (Goh, 2009; Sherman *et al.*, 2009; Beasley *et al.*, 2009; Krishnan and Visvanathan, 2009), independent audit committee members demand wider audit coverage and/or extensive audit testing (Abbott *et al.*, 2003). In doing so, they undertake more monitoring capacity and satisfy their role in overseeing the appropriateness of the executed audit work (Hoitash and Hoitash, 2009). By seeking higher audit quality, independent audit committee members protect their shareholders and their reputation through limiting the exposure of major risks impacting the financial statements. This result reconciles with Abbott *et al.* (2003), Sharma (2003), Mangena and Pike (2005) and Krishnan and Visvanathan (2009).

The number of meetings held by the board of directors is inversely associated with audit fees. This suggests that the more frequent board meetings, the less they depend on external auditors as a monitoring tool. Active boards have better opportunity to allocate their resources and time to observe management practices and evaluate it against a corporate strategic plan (MacAvoy and Millstein, 2005). Two of the examined financial characteristics are found to be consistently related to audit fees across the five estimated models. The results indicate that leverage is statistically significant and negatively associated with audit fees. This implies that low leverage firms are subject to less audit testing and consequently require less chargeable hours, as they are considered less risky (Fan and Wong, 2005). Firms with larger asset size incur relatively higher audit fees as they are likely to have more diversified and complex business transactions (Demsetz and Strahan, 1997), which require more audit hours and hence higher audit fees (Haskins and Williams, 1990).

Robustness testing

To increase the reliability and robustness of our results, we tested for unobservable heterogeneity, reverse causality and endogeneity. In all our regressions, we use fixed effect panel data regression to control for unobservable heterogeneity in our sample and to limit the probability of omitted unobservable firm characteristic (Brooks, 2008; Gippel *et al.*, 2015). As board structure, particularly directors' independence and women on board, might affect and be affected by the audit fees, reverse causality might influence our results. We control for reverse causality by estimating our regression using a one-year lead audit fees. The independence of the board in a given year is likely to affect audit quality and scope, and consequently same-year audit fees; while the following year audit fees could not affect board independence in the previous year. Additionally, women participation on corporate boards might affect and be affected by the ability to monitor management activities. A female director might decline board appointment if the firm is not having quality audit to protect her reputation. On the other hand, the presence of women on board might encourage higher reporting quality and transparency, which requires wider audit work and higher audit fees. Hence, in estimating our regression using the lead audit fees as dependent variable, we eliminate the possibility of having our results driven by reverse causality. Endogeneity also might be of a concern. We use the one step *Arellano and Bond* dynamic data-panel estimation to account for the possibility of endogenous variable(s) and (or) autocorrelation (Arellano and Bond, 1991; Dezso and Ross, 2012; Adams and Ferreira, 2009).

Table VI reports results in line with our original findings. Both board independence and audit committee independence remain statistically significant and positively influencing audit fees. The estimated model with one-year lead audit fees as dependent variable indicates that our findings are not influenced by reverse causality. The results of *Arellano and Bond* estimation relax endogeneity concerns. While women on board and the frequency of board meetings are not any more significant, independent directors on the board and the

Independent variables	Lead audit fees		Arellano-Bond	
	Coeff. <i>p</i> -value	Coeff. <i>p</i> -value	Coeff. <i>p</i> -value	Coeff. <i>p</i> -value
Lagged audit fees			0.062 (0.794)	0.044 (0.864)
Board size	0.116*** (0.006)	0.99*** (0.007)	0.065 (0.216)	0.061 (0.169)
Board independence	0.027*** (0.000)	0.025*** (0.000)	0.020** (0.015)	0.011* (0.098)
Women on board	-0.477*** (0.002)	-0.467*** (0.002)	-0.167 (0.598)	-0.208 (0.408)
Board meetings	-0.047*** (0.008)	-0.043** (0.015)	-0.004 (0.838)	0.009 (0.593)
Audit committee size	-0.064 (0.470)		-0.153 (0.136)	
Audit committee independence	0.595* (0.096)		2.943* (0.091)	
Audit committee financial experts	-0.076 (0.206)		-0.031 (0.698)	
Audit committee meetings	1.072 (0.133)		0.029 (0.486)	
Audit committee effectiveness		0.331** (0.042)		0.296* (0.089)
Non-audit fees	1.252** (0.013)	0.283*** (0.006)	1.234 (0.381)	0.274 (0.302)
ROA	1.159 (0.672)	0.121 (0.745)	1.046 (0.929)	0.261 (0.582)
Leverage	-0.702** (0.048)	-0.851** (0.011)	-1.036 (0.485)	-1.256 (0.404)
Asset size	0.998*** (0.000)	1.023*** (0.000)	0.279 (0.681)	0.098 (0.872)
Beta	-0.086 (0.721)	-0.090 (0.709)	-0.368 (0.215)	0.371 (0.150)
Volatility	-0.002 (0.628)	-0.003 (0.543)	-0.005 (0.432)	-0.003 (0.959)
Constant	-0.007 (0.997)	-0.899 (0.455)	16.757** (0.013)	15.161*** (0.009)
Year dummies	Yes	Yes	Yes	Yes
Industry dummies	Yes	Yes	Yes	Yes
Adjusted <i>R</i> -squared	0.672	0.667		
Prob > <i>F</i>	0.000	0.000		

Notes: Table VI presents robustness checks to test for unobservable heterogeneity, reverse causality and endogeneity. The asterisks ***, **, * denote significance at the 1, 5 and 10% level, respectively

Table VI.
Audit fees and the
structure of the board
and the audit
committee

audit committee remain significant. Therefore, after testing for unobservable heterogeneity, reverse causality and endogeneity, the results validate the influence of independence on audit fees.

Conclusion

The basic intention behind the growing body of legislations and codes is to promote the increase in independent directors on corporate boards and the effectiveness of audit committees. That is, having more independent directors and effective audit committees facilitate having sound governance and higher reliability of financial statements (Cohen *et al.*, 2002; Abbott *et al.*, 2003; Turley and Zaman, 2007; Beasley *et al.*, 2009; and Krishnan and Visvanathan, 2009). Agency theory argues that, in seeking reliable financial reporting to enhance monitoring, corporate boards demand higher audit quality resulting in more chargeable hours, and hence higher audit fees (Zaman *et al.*, 2011). Moreover, the recommendation on selecting external auditors as well as reviewing the audit scope, the audit findings, and the management letter points are core audit committee responsibilities (Abbott *et al.*, 2003; Abbott and Parker, 2000). This leads us to expect that effective audit committees are likely to have an impact on the audit scope for better audit assurance (Beasley *et al.*, 2009; Turley and Zaman, 2007; Carcello *et al.*, 2002). The level of freedom auditors exercise, when executing their audit work, to identify failure in the reporting process and reporting on them, impacts audit quality (Collier and Gregory, 1996). Hence, the independence of external auditors and unrestricted scope are essential to facilitate a higher quality audit. Therefore, effective boards and audit committees are presumed to be more

efficient in creating adequate audit environment to ensure unbiased audit opinion (Zaman *et al.*, 2011).

In weak governance environment, the possibility of manipulating a firm's earnings and producing misstated financial statements is high, which increases audit risk (Carcello and Neal, 2003). The acceptance of the audit client and the level of audit work required for an effective audit assignment are therefore related to the quality of the firm's governance structure (Cohen *et al.*, 2002). This argument suggests that in a weak governance environment, external auditors are likely to assume incremental risk in the audit assignment and consequently increase their audit efforts, which results in higher audit fees (Simunic, 1980). Critics to this view argue that audit fees increase when a firm has a highly independent board and effective audit committee, as they pursue wider audit coverage and better audit quality to support in discharging their fiduciary duty (Zaman *et al.*, 2011; Abbott *et al.*, 2003; Carcello *et al.*, 2002). Therefore, this paper investigates the potential impact of board and audit committee structure on audit fees in a sample of FTSE 350 financial institutions for the years 2011-2015 inclusive.

While the need for quality financial statements is always demanded, arguably, the importance of their reliability has elevated after the recent financial crisis. This paper investigates whether boards' structure and the effectiveness of their audit committees are associated with higher audit quality to reduce the risk of misstatements, earning manipulations and protect shareholders from management misbehavior. The results reveal that board size, board independence, women participation on board and the frequency of board meetings are significantly related to audit fees. In particular, the documented results suggest that boards with larger size and higher independence seek higher audit quality to enhance their monitoring capacity and protect not only shareholders' interest but also the wider group of stakeholders. Consequently, this will result in higher audit fees. The results also suggest that the presence of female directors on boards reduces the level of work required by external auditors and consequently reduces audit fees. In exercising their fiduciary duties, women on boards are likely to reduce the risk of manipulated financial statements, as they are more inclined toward truthfulness, cautiousness and conservatism. This encourages firms to call on more female board directors to achieve better governance. Also, better governance and firm performance are achieved when having diverse boards which help in bringing the voice out of different life experiences that will give a space for creativity (Singh and Vinnicombe, 2004).

The composition of the audit committee; size, independence, number of financial experts and frequency of meetings; determine its effectiveness (Zaman *et al.*, 2011; Kalbers and Fogarty, 1993). Efficient audit committees are found to rely more on external auditors to maintain advanced control system and protect their reputation. This demands more audit work from external auditors elevating audit fees. We examine further the impact of audit committee effectiveness on audit fees by assessing audit committee effectiveness dimensions. We found that audit committees with relatively more independent members are more inclined toward obtaining higher quality audit to enhance their firm's internal control system and reporting quality. This protects shareholders' welfare (Collier and Gregory, 1996), and/or limit their liability and protect their reputation. This leads us to encourage financial institutions to appoint more independent audit committee members to facilitate having reliable financial reporting process.

The current study examines the FTSE 350 financial institutions as they are subject to different reporting requirements. It could be of interest to examine implication of the FTSE 350 non-financial firms' characteristics on audit fees. This might share in providing a more widespread conclusion. Also, conducting a similar study on a different sample (developing

country) may give an oversight on potential cultural, in addition to economic and corporate changes differences that may affect audit fees.

The results of this study support the recommendation of the latest UK Corporate Governance code in relation to having a diverse Board of Directors. The presence of women on board promotes and sends positive signs about a better financial reporting. Notwithstanding that women are more inclined towards higher levels of ethical behavior. While agency cost is reduced by the existence of independent boards (Uang *et al.*, 2006), our results show that independent boards are inclined toward alleviating audit fees as a result of demanding better quality audit. Prior studies mention that the professional background of women on board is associated with better reporting quality (Xiang and Qin, 2017), our results show that the presence of women is associated with less audit fees as a result of being more active and risk averse. It is implied that the managerial style of women when serving on board of directors is perceived positively by external parties.

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