AUDIT COMMITTEE GENDER DIVERSITY AND AUDIT FEES: THE ROLE OF DUAL-CLASS SHARE STRUCTURE

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OPEN ACCESS

How to cite this paper: Omar, A. (2023). Audit committee gender diversity and audit fees: The role of dual-class share structure. *Corporate Ownership & Control, 20*(2), 84–92. https://doi.org/10.22495/cocv20i2art7

ISSN Online: 1810-3057
ISSN Print: 1727-9232

Received: 10.06.2022
Accepted: 20.01.2023

JEL Classification: M42, G32, M41, M40
DOI: 10.22495/cocv20i2art7

Abstract

The paper examines the role of dual-class share structure on the nexus between the presence of at least one female member on the audit committee (gender diversity) and audit fees. The study estimates a regression model using 2,519 firm-year observations for 475 public U.S. firms, and in line with the view that gender diversity helps firms to be more attentive and committee members act within their control to ensure a higher level of audit coverage, the study finds that gender diversity is associated with higher audit fees. Further, this study reports that the interaction of dual-class share structure and gender diversity is associated with lower audit fees. This highlights the merits of dual-class share structures which continue to be a subject of much debate. This study also contributes to the literature that provides insight into how context or situational factors moderate the impact of gender diversity on audit fees.

Keywords: Audit Fees, Gender Diversity, Audit Committee, Dual-Class Shares

Authors' individual contribution: The Author is responsible for all the contributions to the paper according to CRediT (Contributor Roles Taxonomy) standards.

Declaration of conflicting interests: The Author declares that there is no conflict of interest.

1. INTRODUCTION

The purpose of this study is to examine the moderating effect of dual-class share structure on the relationship between the presence of at least one female member on the audit committee of firms (gender diversity) and audit fees. Prior research documents that gender diversity on the audit committee impacts audit fees (Aldamen et al., 2018; Sellami & Cherif, 2020), but the impact differs based on the characteristics of either the firm or the audit (Aldamen et al., 2018). Thus, this study illuminates the role played by context or situational factors by exploring how ownership structure, specifically dual-class share structure, moderates the direct impact of gender diversity on audit fees.

The knowledge of how gender diversity on the audit committee is associated with audit fees has important governance and public policy implications. It is crucial to effective governance, as it will enable firms to understand situations that benefit from the influence of female members (Aldamen et al., 2018; Omar et al., 2021). Resource dependency theory postulates that diversity is a key resource for firms, potentially providing diverse resources to benefit firms (Reddy & Jadhav, 2019). Thus, there has been a growing trend worldwide to increase female participation on boards to benefit from their contribution to the boards (Lai et al., 2017).

Additionally, this study is motivated by the extensive debate on the efficacy of dual-class share structure (Cheng et al., 2020). Dual-class share structures exist in firms that offer more than one class of common stock with different or unequal voting rights. This structure deters hostile takeovers and proxy contests (Nguyen & Xu, 2010), and many companies in the United States, including Google, Facebook, and Alibaba have gone public with dual-class

share structures. Critics believe that this structure will harm shareholders by entrenching managers, but proponents contend that this structure will allow managers to target the long-term growth of their firms, become less incentivized to concentrate on short-term market pressure nor manage earnings, relative to firms with single-class share structure (Adams & Ferreira, 2008; Chemmanur & Jiao, 2012; Mikkelson & Partch, 1994; Nguyen & Xu, 2010).

Thus, this study seeks to address the research question:

RQ1: How does dual-class share structure moderate the effect of gender diversity on audit fees?

Proponents of dual-class share structures contend that firms with such structures tend to have better financial reporting quality. Better financial reporting quality reduces the level of audit risk and audit coverage (Bell et al., 2002; Ghosh & Tang, 2015; Lobanova et al., 2020). As such, it could be posited that in the presence of dual-class share structures (compared to single-class share structures), gender-diverse audit committees will be associated with lower audit fees due to a reduction in audit risk.

Using archival data this study estimates regression analysis on a sample of US firms for the years 2001 to 2010. Additional analysis is conducted using a propensity-score matched sub-sample. This study finds that the hypothesis is supported for both samples, this study finds that the interaction of gender diversity and dual-class share structure (relative to single-class share structure) is associated with lower audit fees.

This study contributes to the corporate governance literature. First, it shows how a situational factor, ownership structure, impacts the relationship between gender diversity and audit fees. The role of this moderator helps to provide a deeper understanding of an important determinant of audit fees. It shows that audit pricing is impacted not only by the quantity of audit coverage demanded but also by the perceived audit risk by external auditors. This result further highlights how the demand-side and supply-side viewpoints on audit pricing are complementary. Furthermore, in support of proponents of dual-class share structure, this study provides evidence that firms with dual-class structures are perceived to pose lower audit risk compared to single-class share structures. This is important to both regulators and investors that want more insight into the financial reporting quality of firms with dual-class share structures.

The structure of this paper is as follows. Section 2 presents the literature review and hypothesis. Section 3 describes the data and methodology. Section 4 presents the empirical results and discusses the findings. Finally, Section 5 presents the conclusion.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

A major stream of audit research has focused extensively on factors that determine audit fees/pricing (Abbott et al., 2003; Aldamen et al., 2018; Carcello et al., 2002; Charles et al., 2010; Hay et al., 2006; Simunic, 1980; Simunic & Stein, 1996), presenting two main viewpoints to explain audit pricing, namely the demand and supply views. The demand-side (the auditee's) viewpoint suggests higher audit fees will result when effective audit committee members demand extensive audit coverage/effort/quality from external auditors (Carcello et al., 2002; Knechel et al., 2013; Zaman et al., 2011). On the other hand, the supply-side (the external auditor's perspective) argues that audit fees will be lower when auditors have fewer motivations to conduct more audit work in the presence of effective governance mechanisms and when audit risk is perceived to be low and vice versa (Lobanova et al., 2020; Munro & Stewart, 2011; Stewart & Munro, 2007; Tsui et al., 2001). These two approaches can be complementary rather than competing theories to explain audit pricing (Aldamen et al., 2018; Krishnan & Visvanathan, 2009).

The audit committee, a subcommittee of the board of directors, is charged with oversight of the audit and financial reporting process, amongst other responsibilities (Beasley et al., 2010; Rezaee, 2010). This committee is tasked with appointing, compensating, and overseeing the work and independence of external auditors. From an agency theory perspective, the committee serves to protect the interests of shareholders (Abbott et al., 2003; Rezaee, 2010). Prior literature documents that some characteristics of a firm's audit committee impact audit fees (Abbott et al., 2003; Aldamen et al., 2018), an important one being the impact of gender diversity (Aldamen et al., 2018; Sellami & Cherif, 2020).

Generally, on corporate boards, gender diversity continues to be an important research issue for academicians and policy-makers. The psychology literature documents that there is a difference in the ethical behaviors of females and males, with females exhibiting higher ethical attitudes and being more risk-averse (Akaah, 1989). Relative to men, women on boards are believed to be more sensitive to unethical behavior, and women help reduce groupthink mentality (Singh et al., 2002). Female directors help to facilitate more informed discussions and have a significant impact on board inputs (Adams & Ferreira, 2009). Their presence is also associated with lower rates of financial restatement (Abbott et al., 2012), higher earnings quality of firms (Srinidhi et al., 2011), higher accrual quality (Barua et al., 2010), and higher profitability (Krishnan & Parsons, 2008).

Specifically, on the audit committee, studies identify an association between gender diversity and audit fees. Ittonen et al. (2010) examine the chair of the audit committees of S&P 500 firms and document a negative association between a female member serving as chair and audit fees. However, using a sample of US firms for the years 2001–2011, Lai et al. (2017) document that higher audit fees result from female membership on the audit committee. Similarly, using a sample of 624 nonfinancial Australian companies, Aldamen et al. (2018) propose and find that audit fees are higher with female membership on the audit committee of firms. In support of the demand-side argument, they explain that female membership on the audit committee will lead to the committee requiring more audit coverage, hence higher audit fees. Furthermore, they bring to the fore the importance of situational factors which could moderate this

positive relationship. If a firm's financial reporting environment is perceived to have low inherent and/or control risk, then there is support for the supply-side viewpoint where audit fees are lower with a gender-diverse audit committee (Aldamen et al., 2018). This is because auditors will charge lower fees for lower inherent and/or control risk and reduced audit effort, and vice versa (Simunic & Stein, 1996). Context becomes very important to enable a better understanding of how gender diversity impacts audit fees. Thus, this study examines how ownership structure, specifically dual-class share structure versus single-class share structure, impacts the gender diversity and audit fees relationship.

Dual-class share structure exists in firms that typically have two classes of shares where the cash flow rights are identical but the voting rights differ (Cheng et al., 2020). With this structure, there is a publicly traded class, "inferior", with one vote per share and mainly held by outsiders, and another class that is not publicly traded and mainly held by insiders (managers and directors) and is characterized by multiple votes per share. The latter is viewed as superior relative to the former. This structure goes against the principle of "one share one vote"[1] and has been considerably debated in the academic circle, as well as in the industry (Cao et al., 2020; Gompers et al., 2004; Jordan et al., 2016). Many firms in the United States have gone public as dual-class companies, such as Google LLC (now Alphabet Inc., 2004), Snap Inc. in 2017, Facebook, Inc. in 2012, etc., either through initial public offerings (IPO) or recapitalization (Nguyen & Xu, 2010). Dual-class share structures are viewed as defensive because they deter hostile takeovers and proxy contests (Nguyen & Xu, 2010).

There are competing views on the potential benefits of a dual-class share structure. While critics believe this structure should be banned (Govindarajan et al., 2018), proponents argue that it is beneficial (Denis & Denis, 1994; Lobanova et al., 2020; Nguyen & Xu, 2010). Critics argue that insiders have job security due to their superior voting control, which will make it difficult for other shareholders to hold them accountable for mismanagement or making bad decisions (Cao et al., 2020; Gompers et al., 2004; Masulis et al., 2009). That is, bad insiders with great control can entrench, unfairly benefit themselves, and insulate themselves from external monitoring.

However, proponents believe that the job security that comes with their voting power or protectionism mechanism allows them to carry out their vision and invest in the long term of the firm for the benefit of all shareholders (Jordan et al., 2016). Managers in firms with dual-class share structures focus on achieving long-term goals while avoiding short-term market pressure, thus reducing investment myopia (Chemmuneur & Jiao, 2012; Jordan et al., 2016; Nguyen & Xu, 2010). Furthermore, their existence is positively associated with the quality of innovation (Cao et al., 2020), investment efficiency (Cheng et al., 2020), growth opportunities (Chemmuneur & Jiao, 2012), lower risk of a hostile takeover (Bebchuk & Cohen, 2005), fewer earnings management activities and better financial reporting environment (Nguyen & Xu, 2010), and lower audit risk and audit fees (Lobanova et al., 2020).

A structure that protects the long-term interest of shareholders should be promoted by regulators. Taken together, if managers are shielded from short-term pressure, then there will be less incentive to focus on short-term stock prices which could lead to earnings management. Thus, it can be predicted that relative to single-class share structure, the financial reporting environment of firms with dual-class share structure is less risky, and within that context, the interaction of dual-class share structure in firms with female representation on their audit committee will result in lower audit fees. Based on these arguments, the following hypothesis is proposed (stated in alternate form):

H1: Ceteris paribus, the interaction of gender diversity and dual-class share structure (relative to single-class share structure) is associated with lower audit fees.

3. RESEARCH METHODOLOGY

3.1. Data sources and sample selection

This study constructs the sample by using the information on the dual-class share structures dataset obtained from Ronald Anderson's data page[2]. Next, fundamental data is obtained from Compustat, audit fees data from Audit Analytics, and other board characteristics data from Institutional Shareholder Services (ISS; formerly RiskMetrics).

Panel A of Table 1 outlines the sample selection process. Starting with 16,230 firm-year observations for 2,000 firms for the period 2001–2010. Firms with missing data in Compustat, Audit Analytics, and ISS are deleted. Firms in the utilities and financial industries are highly regulated, thus they are excluded from the sample. The final sample after the selection process comprises 2,519 firm-year observations and 475 firms.

Table 1. Sample construction of the main sample

Panel A. *Sample construction*

Description	*Firms*	*Number of observations*
Initial dual-class share sample	2,000	16,230
Less: Firms missing COMPUSTAT data	220	2,839
Less: Firms missing audit analytics and ISS data	1,305	10,872
Final sample	475	2,519

Panel B. *Industry distribution*

Industry	*Firms*	*(%)*
1. Consumer non-durables	42	8.84
2. Consumer durables	18	3.79
3. Manufacturing	95	20.00
4. Energy	24	5.05
5. Chemicals and allied products	22	4.63
6. Business equipment	94	19.79
7. Telecommunication	3	0.63
9. Shops	78	16.42
10. Healthcare, medical equipment, and drugs	37	7.79
12. Other	62	13.05
Total	475	100

[1] Single-class share structure.

[2] See: http://www.ronadersonprofessionalpage.net/data-sets.html (Accessed on 2/28/2022)

Panel B of Table 1 presents the Fama and French 12-industry classification of the sample. 10 industries are represented and 2 are excluded due to the high regulation associated with them, namely, finance (Industry 8) and utilities (Industry 11). 20% of the sample falls into the manufacturing industry and 0.63% of the sample belongs to the telecommunications industry.

3.2. Variables

The dependent variable is the natural logarithm of total audit fees (*LnAFEES*). Consistent with prior literature, audit fees are used as a proxy for audit coverage and quality (Abbott et al., 2003; Aldamen et al., 2018; Engel et al., 2010; Mitra et al., 2020; Mitra et al., 2019; Mohapatra et al., 2022; Raghunandan & Rama, 2006; Sellami & Cherif, 2020; Simunic & Stein, 1996; Vanstraelen & Zou, 2020).

The independent variable of interest is the interaction between *ACG* and *DUAL* (*ACG*DUAL*). *ACG* is a dummy variable set to 1 if the firm has at least one female audit committee member, and 0 otherwise, and *DUAL* is a dummy variable set to 1 for firms with dual-class shares, and 0 otherwise. This study expects a negative relationship between *LnAFEES* and *ACG*DUAL*.

Consistent with audit fees literature, it is possible to control for variables that affect audit fees namely: total assets (*LnTA*), the ratio of receivables and inventory as a proportion of total assets at year-end (*RECINV*), foreign operations (*FORGN*), the number of a firm's business segments (*SQSEG*), a firm's current ratio to capture a firm's liquidity (*QUICK*), leverage (*LEV*), return on asset (*ROA*), loss (*LOSS*), market to book ratio (*MB*), restatement announcement (*RESTATE*), going concern modifications (*GC*), material weakness disclosure in audit report (*MW*), auditor type (*BIG4*), and the natural logarithm of non-audit fees (*LnNAF*). Also, this study controls for the independence of board members (*PERCBI*), CEO non-duality (*CEOND*) (Raghunandan & Rama, 2006). Also included in the regression models are industry and year-fixed effects

This study expects a positive relationship between *LnAFEES* and *ACG*, *LnTA*, *RECINV*, *LEV*, *LOSS*, *SQSEG*, *FORGN*, *BIG4*, *RESTATE*, and *MW* (Hay et al., 2006; Lobanova et al., 2020; Simunic, 1980). Further, this study expects expect a negative relationship between *LnAFEES* and *QUICK*, *ROA*, *DUAL* (Lobanova et al., 2020), and *MB*. This study does not make predictions on the relationships between *LnAFEES* and *GC*, *PERCBI*, *CEOND*, and *LnNAF* because the audit fees literature is inconclusive on their relationships.

This study tests the hypothesis by estimating the regression model below:

$$\begin{aligned} LnAFEES = {} & \beta_0 + \beta_1 ACG + \beta_2 DUAL + \beta_3 ACG * DUAL + \beta_4 LnTA + \beta_5 ROA + \beta_6 LOSS + \beta_7 MB + \beta_8 LEV \\ & + \beta_9 SQSEG + \beta_{10} FORGN + \beta_{11} RECINV + \beta_{12} QUICK + \beta_{13} GC + \beta_{14} MW + \beta_{15} RESTATE \\ & + \beta_{16} BIG4 + \beta_{17} LnNAF + \beta_{18} CEOND + \beta_{19} PERCBI + FF12 + YR + \varepsilon \end{aligned} \quad (1)$$

4. RESULTS AND DISCUSSION

4.1. Descriptive statistics

Table 2 displays the descriptive statistics for variables used in this study. The mean (median) values for the natural logarithm of audit fees, *LnAFEES*, are 14.84 (14.79). The average return on assets is 6% for the whole sample and 11% of firm-years have negative profit for the sample period.

Table 2. Descriptive statistics of the main sample

Variable	*N*	*Mean*	*SD*	*Min*	*Q1*	*Median*	*Q3*	*Max*
LnAFEES	2519	14.84	1.00	12.04	14.15	14.79	15.48	17.24
ACG	2519	0.29	0.45	0.00	0.00	0.00	1.00	1.00
DUAL	2519	0.08	0.26	0.00	0.00	0.00	0.00	1.00
*ACG*DUAL*	2519	0.02	0.15	0.00	0.00	0.00	0.00	1.00
LnTA	2519	8.08	1.40	4.35	6.97	7.93	9.03	11.13
ROA	2519	0.06	0.08	-0.75	0.04	0.07	0.10	0.24
LOSS	2519	0.11	0.31	0.00	0.00	0.00	0.00	1.00
MB	2519	3.07	3.02	-10.77	1.68	2.47	3.73	19.24
LEV	2519	0.20	0.15	0.00	0.08	0.18	0.28	1.05
SQSEG	2519	2.81	0.77	1.41	2.24	2.83	3.32	4.58
FORGN	2519	0.84	0.37	0.00	1.00	1.00	1.00	1.00
RECINV	2519	0.28	0.15	0.01	0.17	0.26	0.36	0.78
QUICK	2519	2.19	1.43	0.38	1.33	1.87	2.58	13.39
GC	2519	0.00	0.03	0.00	0.00	0.00	0.00	1.00
MW	2519	0.03	0.18	0.00	0.00	0.00	0.00	1.00
RESTATE	2519	0.11	0.31	0.00	0.00	0.00	0.00	1.00
BIG4	2519	0.97	0.16	0.00	1.00	1.00	1.00	1.00
LnNAF	2519	12.95	1.61	7.70	11.98	13.08	14.08	16.44
CEOND	2519	0.28	0.45	0.00	0.00	0.00	1.00	1.00
PERCBI	2519	74.94	13.23	26.67	66.67	77.78	87.50	92.31

Note: To reduce the impact of potential outliers, the continuous variables are winsorized at the 1% and 99% levels. The regression results remain the same when the variables are not winsorized.

Table 3 presents the Pearson correlation results of the regression variables. The correlation coefficient between audit fees (*LnAFEES*) and *ACG*DUAL* is negative and significant at the 10% level, consistent with expectations. The correlation between *LnAFEES* and *DUAL* is negative and significant at the 1% level implying a negative association between audit fees and dual-class share structure. Further, the association between female membership on the audit committee, *ACG*, and audit fees is significantly positive. Also significant are correlations between *LnAFEES* and other control variables such as *LnTA, LEV, SQSEG, FORGN, QUICK, MW*, and *RESTATE*. There are no observed multicollinearity issues.

Table 3. Pearson correlation result

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	*LnAFEES*	1.00																			
2	*ACG*	0.16***	1.00																		
3	*DUAL*	-0.09***	0.00	1.00																	
4	*ACG*DUAL*	-0.04*	0.24***	0.53***	1.00																
5	*LnTA*	0.79***	0.18***	-0.05**	0.00	1.00															
6	*ROA*	0.00	0.00	-0.05***	-0.04*	0.10***	1.00														
7	*Loss*	-0.01	0.04*	0.00	0.02	-0.10***	-0.67***	1.00													
8	*MB*	0.07***	-0.01	-0.02	-0.01	0.10***	0.20***	-0.11***	1.00												
9	*LEV*	0.17***	0.07***	0.03	0.02	0.20***	-0.18***	0.12***	0.00	1.00											
10	*SQSEG*	0.45***	0.05**	-0.07***	-0.02	0.26***	0.02	0.00	-0.03	-0.02	1.00										
11	*FORGN*	0.36***	0.01	-0.10***	-0.03	0.11***	0.02	0.04*	0.02	-0.06***	0.54***	1.00									
12	*RECINV*	-0.10***	-0.02	0.01	-0.02	-0.27***	0.00	-0.01	-0.05***	-0.15***	-0.03	0.03	1.00								
13	*QUICK*	-0.34***	-0.07***	-0.01	-0.02	-0.38***	0.05***	0.05**	-0.06***	-0.33***	-0.05**	0.09***	0.03	1.00							
14	*GC*	-0.01	-0.02	0.03*	-0.01	0.01	-0.09***	0.06***	-0.03	0.08***	-0.03	-0.02	0.00	-0.03	1.00						
15	*MW*	0.03*	-0.06***	0.02	-0.03	-0.08***	-0.08***	0.09***	-0.04**	-0.02	0.01	0.02	0.05**	0.02	0.06***	1.00					
16	*RESTATE*	-0.05**	-0.04**	-0.02*	-0.04	-0.05***	0.01	-0.01	-0.01	0.00	0.00	0.01	-0.05***	0.02	0.06***	0.07***	1.00				
17	*BIG4*	0.14***	0.07***	-0.03**	-0.04	0.19***	0.01	0.00	0.05**	0.11***	0.04**	0.03	-0.11***	-0.10***	0.01	-0.02	0.00	1.00			
18	*LnNAF*	0.70***	0.11***	-0.04**	-0.01	0.59***	0.04**	-0.05***	0.08***	0.11***	0.35***	0.30***	-0.11***	-0.22***	0.01	0.00	-0.05***	0.15***	1.00		
19	*CEOD*	0.08***	0.33***	-0.01	0.07***	0.12***	-0.04*	-0.01	-0.06***	0.07***	0.02	-0.03	-0.01	-0.02	-0.02	-0.08***	-0.04**	-0.04**	0.04**	1.00	
20	*PERCBI*	0.32***	0.27***	-0.35***	-0.10***	0.28***	0.02	0.00	0.04*	0.12***	0.20***	0.18***	-0.03*	-0.13***	0.01	-0.05**	-0.07***	0.14***	0.22***	0.23***	1

*Note: ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. The definitions of variables are provided in the Appendix.*

4.2. Regression results

Table 4 presents the results of the regression model, which tests hypothesis *H1*, using the main sample. *H1* hypothesizes a negative relationship between the interaction of audit committee gender diversity and dual-class share structure, and audit fees. The regression model has an adjusted R^2 of 0.79 and is significant.

As reported in Table 4, the coefficient on *ACG* is positive and significant, corroborating the view of a positive and significant association between gender diversity on audit committees and audit fees (Aldamen et al., 2018; Lai et al., 2017). The result suggests that female membership on the audit committee leads to the demand for more audit coverage, resulting in higher audit fees. However, the coefficient on *DUAL* is not significant, though Lobanova et al. (2020) document a negative association between dual-class share structure and audit fees. Further, the result shows a negative and significant relation between *LnAFEES* and *ACG*DUAL*. This suggests that auditors exert less effort completing an audit when there is at least one female member on the audit committee and the firm has a dual-class share structure relative to if the firm has a single-class share structure. This result supports hypothesis 1. It suggests that the financial reporting environment of firms with dual-class structures is perceived to present low risks.

Further, consistent with expectations, the results show that *LnAFEES* has a negative and significant association with *QUICK* and *ROA*. *LnAFEES* also has a positive and significant association with *LnTA, RECINV, LOSS, SQSEQ, FORGN*, and *MW*.

Table 4. Regression results

DV = LnAFEES			
Variable	***Predicted sign***	***Estimated coefficient***	***t-value***
Intercept	?	8.498***	73.94
DUAL	-	0.052	1.14
ACG	+	0.047*	1.88
*ACG*DUAL*	-	-0.149*	-1.94
LnTA	+	0.445***	45.92
RECINV	+	0.726***	9.83
QUICK	-	-0.055***	-7.09
ROA	-	-0.523***	-3.46
MB	-	-0.002	-0.65
LEV	+	0.027	0.39
Loss	+	0.084**	2.12
SQSEG	+	0.117***	7.53
FORGN	+	0.387***	12.31
BIG4	+	-0.122**	-2.09
RESTATE	+	0.003	0.11
MW	+	0.402***	7.81
GC	?	-0.674**	-2.52
LNNAF	?	0.141***	17.99
PERCBI	?	0.004***	4.62
CEOND	?	0.006	0.27
Industry fixed effects		YES	
Year fixed effects		YES	
Adjusted R^2		0.7902	
F-statistic (p-value)		279.97 (<0.0001)	
N		2519	

*Note: This table reports an analysis of the relation between audit fees, gender diversity, and dual-class share structure. The table reports the results of the regression (Eq. (1)) for the fiscal years 2001 to 2010. Industry and year-fixed effects are included for each model but not tabulated. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variables are defined in the Appendix.*

4.3. Additional analysis: propensity-score matched subsample

Additional analysis is conducted to exclude the effect of confounding factors that could lead to biased coefficients of the estimators by forming a subsample using a propensity score matching process. This study selects control observations (single-class share structure) that differ from treatment (dual-class share structure) based on realized audit fees, *LnAFEES*, but are similar regarding pre-existing characteristics that are likely to impact *LnAFEES* (Rosenbaum & Rubin, 1985).

First, estimation of a logistic regression model, that estimates the probability that a firm will have a dual-class share structure based on some observable firm characteristics (firm size, performance, and risk). Next, matching of control observations to treatment by choosing control observations that have similar propensity scores based on 0.01 caliper widths for a 1-to-1 match without replacement. The study also matches by industry and year. The final subsample comprises 396 firm-year observations. The results after re-estimating Model 1 using the new subsample are in Table 5.

The results in Table 5 are similar to those recorded in Table 4. The negative and significant relation between *LnAFEES* and *ACG*DUAL* still holds, supporting *H1*. Hence, enough evidence is found to support the view of lower audit fees with female membership on the audit committee and dual-share class structure.

Table 5. Regression results using a propensity-score matched sub-sample

DV = LnAFEES			
Variable	***Predicted sign***	***Estimated coefficient***	***t-value***
Intercept	?	8.722***	27.69
DUAL	+/-	0.091	1.36
ACG	+	0.151*	1.85
*ACG*DUAL*	-	-0.168*	-1.68
LnTA	+	0.458***	18.69
RECINV	+	0.867***	4.60
QUICK	-	-0.011	-0.52
ROA	-	-0.621	-1.52
MB	-	-0.001	-0.15
LEV	+	0.120	0.59
Loss	+	0.052	0.52
SQSEG	+	0.035	0.94
FORGN	+	0.439***	5.90
BIG4	+	0.056	0.35
RESTATE	+	0.006	0.09
MW	+	0.397***	3.44
GC	?	-2.188***	-4.92
LnNAF	?	0.134***	6.75
PERCBI	?	0.001	0.72
CEOND	?	-0.073	-1.26
Industry fixed effects		YES	
Year fixed effects		YES	
Adjusted R^2		0.8173	
F-statistic (p-value)		53.09 (<0.0001)	
N		396	

*Note: This table reports an analysis of the relation between audit fees, gender diversity, and dual-class share structure using a propensity-score matched sub-sample. The table reports the results of the regression (Eq. (1)) for the fiscal years 2001 to 2010. Industry and year-fixed effects are included for each model but not tabulated. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively. Variables are defined in the Appendix.*

4.4. Discussion of the results

The results show that the interaction of gender diversity and dual-class share structure is associated with lower audit fees. This supports the hypothesis and the view that the presence of a dual-class share structure is associated with a better financial reporting environment, contrary to the argument of critics.

Critics of dual-class share structure believe that its existence will harm shareholders by entrenching managers. However, proponents contend that this structure will allow managers to target the long-term growth of their firms and engage in fewer earnings management activities relative to firms with a single-share class structure (Chemmanur & Jiao, 2012; Nguyen & Xu, 2010). Thus, the results suggest that external auditors are likely to view the financial reporting environment of firms with dual-class structures as having lower risks, hence requiring less audit coverage/effort, and resulting in lower fees.

Additionally, the results highlight how situational factors influence the direct impact of gender diversity on audit fees. The demand-side (auditee's perspective) viewpoint contends that gender diversity on the audit committee will result in higher audit fees due to audit committee members of firms demanding more audit coverage (Aldamen et al., 2018). However, in the presence of factors that present low risk, the supply-side (external auditor's perspective) effect is created whereby audit fees reduce as a result of the reduction in audit risk perceived by external auditors (Aldamen et al., 2018). Thus, context becomes very important to enable a better understanding of how gender diversity impacts audit fees.

5. CONCLUSION

The merits of dual-class share structures are still being debated in many countries. This paper examines the impact of dual-class share structure on the relationship between audit committee gender diversity and audit fees. This study hypothesizes and finds a negative relation between the interaction of dual-class share ownership structure and gender diversity, and audit fees, which supports the proposition. The result is interpreted as evidence to support the notion that in the presence of low perceived audit risk, gender diversity will be related to lower audit fees.

The findings add to the stream of research asking for situational factors that moderate the direct effect of gender diversity on audit fees (Aldamen et al., 2018). This is in a bid to shed light on how the demand-side view and supply-side view on audit pricing are complementary rather than competing. Starting with the demand-side viewpoint, that gender diversity on the audit committee will result in higher audit fees due to committee members demanding more audit coverage. When situational factors within the firm present low risk, then the supply-side effect is created whereby audit fees reduce as a result of the reduction in audit risk perceived by external auditors.

Additionally, the findings add to the evidence provided by proponents of dual-class share structure, as this study finds support that firms with dual-class share structure are viewed as having a less risky financial reporting environment. The results hold for the full sample and a propensity-score-matched subsample. Overall, the results highlight an aspect of the corporate governance implication of dual-class share structure. This study is subject to the limitation that the results apply to firms in the US and cannot be generalized to firms in other countries. Future research opportunities exist to examine other moderators that can explain the relation between audit committee gender diversity and audit fees. This is important as the audit committee of firms is an important sub-committee of the board of directors that has important oversight duties on the financial reporting process, amongst other duties.

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APPENDIX

Table A. Variable description

Variable	***Description***
DUAL	1 for firms with dual-class share structure, and 0 otherwise
ACG	1 if there is at least one female member on the audit committee, and 0 otherwise
*ACG*DUAL*	Interaction between ACG and DUAL
LnAT	Natural logarithm of total assets to proxy for firm size
RECINV	(total receivables + total inventory)/total assets at year-end
QUICK	Current ratio to capture a firm's liquidity
ROA	Return on asset
MB	Market to book ratio to capture growth opportunity
LEV	Leverage, total liabilities/total assets
Loss	1 if a firm records a net loss, and 0 otherwise
SQSEG	Square root of the number of a firm's business segments
FORGN	1 if a firm has foreign operations, and 0 otherwise
BIG4	1 if a firm is audited by a BIG4 audit firm, and 0 otherwise
RESTATE	1 if a firm has a restatement announcement, and 0 otherwise
MW	1 if a firm has material weakness disclosure, and 0 otherwise
GC	1 if a firm's audit report has going concern modifications, and 0 otherwise
LnAFEES	Natural logarithm of audit fees paid by a firm
LnNAF	Natural logarithm of non-audit fees paid by a firm
PERCBI	Percentage of independent board members
CEOND	CEO non-duality, set to 1 if the CEO is not the Chairman of the board, and 0 otherwise
FF12	Industry dummies
YR	Year dummies