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# Auditor Gender and Audit Quality in a Joint Audit Setting

Fahim Javed

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# THESE DE DOCTORAT DE

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Spécialité: *Finance*

Par

**Fahim JAVED**

**Auditor gender and audit quality in a joint audit setting**

**Le genre des commissaires aux comptes et la qualité de l'audit externe dans un contexte de co-commissariat**

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### **Notice**

This thesis is produced by compiling self-contained research articles. However, terms “paper”, “study” or “article” is frequently used in the chapters. Moreover, some explanations like corresponding literature are repeatedly used in different places of the thesis.

### **Avertissement**

Mis à part l'introduction et la conclusion de cette thèse, les différents chapitres sont issus d'articles de recherche rédigés en anglais et dont la structure est autonome. Par conséquent, des termes comme "papier", « étude », ou "article" y font référence, et certaines informations, notamment la littérature, sont répétées d'un chapitre à l'autre.

*To My Beloved Family*

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- Looking beyond homophily: Board gender diversity and the choice of gender-diverse audit partners. *European Journal of Law and Economics*

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- Javed, F., Nekhili, M., and Chtioui, T. (2018). “Mandatory joint audits and audit quality: Moderating role of auditor gender”. In proceedings of the 38th Congress of the AFC, 29, 30 and 31 May 2018, IAE Nantes (France).
- Javed, F., Nekhili, M., and Chtioui, T. (2018). “Mandatory joint audits and audit quality: Moderating role of auditor gender?” In proceedings of the 41st Congress of the European Accounting Association, 30th May – 1st June 2017, University of Bocconi (Italy).
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# Auditor gender and audit quality in a joint audit setting

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## *ABSTRACT*

In the context of rapidly increasing interest of regulators, legislators and academic research in the identity of audit engagement partners, this dissertation explores French mandatory joint audit environment where firms preparing consolidated financial statements are jointly audited by two independent audit firms. The composition of joint audit partners may include same gender audit partners or gender-diverse audit partners. This dissertation aims to examine whether gender-diverse audit partners provide higher audit quality compared with same gender audit partners. We argue that gender-diverse engagement partners are more likely to promote effective monitoring and collaborative behavior with regard to audit process and may positively influence audit quality. We investigate the issue of audit quality by examining input- and output-based measures, namely, audit fees and discretionary accruals. We use data on French listed firms and apply appropriate econometrical procedures to alleviate concerns about endogeneity issues. The empirical findings show that gender-diverse audit partners charge 11% audit fee premium and their clients exhibit lower levels of absolute and signed discretionary accruals. Collectively, we provide considerable evidence that gender-diverse audit partners produce higher-quality audits. In the aftermath of gender quota legislation, the current dissertation also examines whether gender profile of audit clients affect the selection/assignment of gender-diverse audit partners. Contrary to the gender similarity (homophily) argument—based on comprehensive analyses of client-partner gender alignments—this dissertation provide compelling evidence that female directors appointed to monitoring positions on the board, compared to female inside directors, tend to select higher quality “auditor pairs” (i.e., gender-diverse engagement partners).

**Keywords:** Audit partner gender, audit fees, discretionary accruals, audit quality, joint audit, board gender diversity, gender quota law



# Le genre des commissaires aux comptes et la qualité de l'audit externe dans un contexte de co-commissariat

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## *RÉSUMÉ*

Dans le contexte de l'intérêt croissant des régulateurs, des législateurs et de la recherche universitaire pour l'identité des commissaires aux comptes, cette thèse explore l'environnement français de co-commissariat qui impose aux sociétés préparant des états financiers consolidés de nommer conjointement deux cabinets d'audit. Le collègue des commissaires aux comptes peut inclure des auditeurs externes du même genre ou de genre différent. Nous examinons les facteurs liés à la demande et à l'offre des services d'audit externe apportés par des commissaires aux comptes de genre différent. Nous soutenons qu'un audit mené par un collège mixte de commissaires aux comptes est plus susceptible de promouvoir un suivi efficace et un comportement collaboratif en ce qui concerne le processus d'audit et peut influencer positivement la qualité de l'audit. Nous examinons l'effet de la composition du collège de commissaires aux comptes sur les honoraires d'audit et sur la qualité des résultats comptables. Nous utilisons des données sur les sociétés françaises cotées en bourse soumis au principe de co-commissariat et appliquons des procédures économétriques appropriées pour atténuer les problèmes d'endogénéité. Nos résultats empiriques montrent qu'un collège mixte de commissaires aux comptes bénéficie en moyenne d'une prime de 11% sur les honoraires d'audit et l'audit conduit par ce type de collège réduit davantage les incitations à la manipulation des résultats comptables. Nous examinons comment la diversité du genre des conseils d'administration des entreprises clientes affecte la composition du collège de commissaires aux comptes quant à sa mixité homme/femme. Nous montrons que les femmes administrateurs, occupant des postes clés de contrôle au sein du conseil d'administration (entant qu'indépendantes ou membres du comité d'audit) ont plus tendance à sélectionner un collège mixte de commissaires aux comptes et que ce phénomène est encore plus accentué après la promulgation de la loi sur les quotas en faveur des femmes dans les conseils d'administration.

**Mots-clés:** Genre du commissaire aux comptes – Honoraires d'audit – Manipulation des résultats – qualité de l'audit – Co-commissariat – diversité du genre au conseil d'administration – loi sur le quota des femmes dans le conseil d'administration.

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## **General Introduction**

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Theoretical and empirical research on statutory audits widely recognize that the basic role of external auditors is to verify the credibility of reported earnings and certify that financial statements are prepared in conformity with applicable accounting standards. In doing so, external auditors provide assurance to corporate stakeholders that company financial statements faithfully convey information regarding the underlying economic conditions of the reporting entity. Statutory auditors thus play a momentous role in audit clients' governance environment to ensure the integrity of financial reporting (Dechow, Ge, & Schrand, 2010; Watts & Zimmerman, 1983). Statutory audits provide multidimensional value to all users of financial statement. In the narrowest sense, it serves to reduce some agency costs by ensuring the compliance of statutory requirements in preparation of financial reports. In addition, appointment of more credible auditors—who follow more stringent reporting—gives positive perception of intrinsic quality of accounting numbers to financial market participants. This appointment positively facilitates the firms' ability to attract external investments (Beattie & Fearnley, 1995; DeFond & Zhang, 2010; Jensen & Meckling, 1976; Willenborg, 1999). Therefore, extensive literature documents that external auditing mitigates information asymmetry between corporate executives, owners and creditors.

An audit is inherently a matter of professional judgment and decision-making process (Knechel, 2000). Lead engagement partners perform a variety of tasks throughout the audit process. In practice, they administer audits, lead the audit teams, gather and evaluate audit evidence during the audit process, negotiate over contentious accounting issues and are ultimately responsible for producing an audit opinion (DeFond & Francis, 2005; Francis, 2004; Nelson & Tan, 2005). However, audit reports

## *General Introduction*

have traditionally been issued with the name of accounting firm rather than the lead audit partner who is in charge of the specific audit engagement. In the context of notorious corporate accounting scandals that called into question the credibility of audit firms (e.g., Enron, WorldCom and Parmalat), regulators around the world have introduced numerous accounting and auditing reforms to enhance transparency and investor confidence in the quality of financial reporting. Various stakeholders expressed their concerns that identities of those who are actually administering audits and make important decisions remain invisible from public (ICAEW, 2005). Thus, a relatively recent issue that has attracted policy attention around the world is the disclosure of audit partner name. European Union (EU) 8<sup>th</sup> Directive obliged audit firms to disclose the identity of audit partners responsible for the engagement in 2006.<sup>1</sup> The Financial Reporting Council (FRC) also imposed a similar requirement in 2008 in the UK. More recently, the Public Company Accounting Oversight Board (PCAOB) rule 3211 became effective from January 31, 2017 in the U.S. It requires the disclosure of the identity of lead audit partners.

A review of prior archival studies reveals that audit firms or audit offices have remained relevant unit of analysis for a long time (DeFond and Zhang 2014; Habib, Bhuiyan, & Rahman, 2019).<sup>2</sup> Traditionally, archival auditing research largely study the effect of multiple audit firm characteristics such as size (Big or non-Big), industry specialization, and tenure on audit pricing and audit quality (Francis & Krishnan, 1999; Francis, 2004). This stream of literature is based on the implicit assumption that all audit engagement partners are a homogenous group producing relatively stable audit quality (e.g., due to firm-wide knowledge sharing and internal consultative practices).

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<sup>1</sup> Article 28 states: “Where an audit firm carries out the statutory audit, the audit report shall be signed by at least the statutory auditor(s) carrying out the statutory audit on behalf of the audit firm.”



## *General Introduction*

Big N audit firms possess more resources and expertise than non-Big auditors. Big N firms build their brand reputation by delivering higher-quality audits. Similarly, industry specialist audit firms invest heavily in technologies, control systems and personnel that enhance their ability to detect errors and fraud within their industry. Abundant studies show that Big N and industry specialist audit firms deliver higher-quality audits, and their clients are associated with various positive outcomes such as lower level of abnormal accruals, stringent financial reporting and less mispricing of IPOs (Beatty, 1989; Becker, Francis, Richard, & Vanstraelen, 2009). Thereby, manifest higher audit quality. Brand name reputation and industry expertise incite audit clients to select these audit firms in the hope that engaging external auditors with established brand names and industry expertise will reinforce the credibility of their financial reports (DeFond & Zhang, 2014).

The issue of lead engagement partners attracted enormous attention of accounting and auditing researchers in recent years. A fundamental question for studies examining the issue of audit partners is that whether individual partner possess enough autonomy to affect audit process and audit outcomes. Particularly, in the presence of audit firms' quality control mechanisms aimed at maintaining consistency in audit quality. For instance standard work procedures, internal reviews and central risk controls adopted by audit firms may constrain audit partners' idiosyncratic behavior (Knechel, Vanstraelen, & Zerni, 2015). Unavailability of data on audit partners' identity inhibited auditing researchers from examining this issue in most countries of the world. Initially, few studies examined issues such as audit partner tenure, audit partners independence, client importance and audit quality in jurisdictions where such

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<sup>2</sup> DeFond and Zhang (2014) provide a comprehensive review of studies examining the issues of audit quality on audit firm level.

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data was available (Carey & Simnett, 2006; Chen, Lin, & Lin, 2008).<sup>3</sup> Findings of these studies challenge the homogeneity assumption by showing that individual partners indeed affect audit quality and audit pricing. Further evidence shows that individual audit engagement partners can exercise a high degree of autonomy and professional judgment during an audit engagement. Audit fee premiums and discounts are partially attributable to the identity of the individual audit engagement partners. (Knechel, Niemi, & Zerni, 2013; Taylor, 2011).<sup>4</sup>

Individual audit partners differ in terms of their personal attributes and financial incentives, such differences may affect audit planning, audit process and audit outcomes. Several review articles have long argued that it could be more insightful to examine if there is a systematic effect of individual characteristics of people who audit on audit outcomes (e.g., Church, Davis, & McCracken 2008; Francis, 2011; Nelson & Tan, 2005). With the availability of data on audit partners in other jurisdictions, a number of studies show that the engagement partner's characteristics such as gender, experience, industry expertise, tenure have implications for audit quality and audit fees (Hardies, Breesch, & Branson, 2015; Hardies, Breesch, & Branson, 2016 Ittonen & Trønnes, 2015; Ittonen, Vähämaa, & Vähämaa, 2013; Lee, Nagy, & Zimmerman, 2019; Zerni, 2012). In addition, we acknowledge that reasons why audit clients select a specific external auditor are complex. In this regard, Houghton and Jubb (2003, p.2) argue that “auditor choice is, in fact, a choice of people (auditors) by people (directors).” There could be several reasons why the board of directors may prefer to select one audit partner rather than another. Taylor (2011) argues that board of directors

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<sup>3</sup> The disclosure of audit partner name is mandatory for listed firms in Australia since 1970, in Taiwan since 1983 and in China since 1995 (Carey & Simnett, 2006; Chen et al., 2008).

<sup>4</sup> Lennox and Wu (2018) provide a review of archival studies on individual audit partners. They identify 54 articles published between the year 2006 and 2017, mainly from China, Australia, Taiwan, Nordic countries (Finland and Sweden) and the U.S.

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closely interact with audit engagement partners and they view audit as a process carried out by people rather than an output generated by a monolithic entity called the audit firm. Choosing one audit partner rather than another may be influenced by the close interpersonal interaction of the primary parties involved in the external auditor selection process. Recent evidence suggests that auditor-client alignments may take place at audit engagement partner level or client may potentially influence partner assignment process (Berglund & Eshleman 2019; Lee et al., 2019; Zerni, Haapamäki, Järvinen, & Niemi, 2012). Motivated by the studies on “people factor” perspective, this dissertation aims to study the issues of audit partner gender and client-partner gender alignments by using data on French listed firms. We seek to contribute to the auditing literature that focuses on audit quality and client-partner alignment by providing insights from French mandatory joint audit setting as it has remained relatively unexplored so far.

### *Related literature*

A growing body of archival auditing literature considers audit partner gender as an observable characteristic of individual audit partners that may affect audit outcomes. This strand of research broadly relies on various theoretical perspectives driven from literature on psychological and behavioral economics in an attempt to explain differences in audit outcomes for male and female audit partners. For example, economic literature provides ample evidence to suggest that women are more conservative and have a greater tendency to take less extreme risks than men in many contexts (Byrnes, Miller, & Schafer, 1999; Croson & Gneezy, 2009). Similarly, the cognitive psychology literature suggests that men and women adopt distinctive approaches in acquiring and processing information, known as the selectivity hypothesis. Women rely less on heuristics (i.e., rules of thumb) and process information

### *General Introduction*

in detail, whereas men tend to process information selectively (Mayer-levy, 1986). Basic contention of this stream of literature is that male and female engagement partners differ in terms of their innate characteristics (e.g., abilities, risk preferences and cognitive style) and these differences can potentially to influence audit judgments, audit process and audit outcomes. Evidence from experimental studies also support the view that gender-based differences exist between male and female auditors and these differences may influence auditors' judgment and decision-making (Chung & Monroe, 1998; Chung & Monroe, 2001; O'Donnell & Johnson, 2001).

A number of auditing studies have empirically analyzed the issue of audit partner gender by using various audit quality proxies, namely audit fees, discretionary accruals, going concern opinions and accounting restatements. These studies use samples of private or public listed firms in different capital market settings of the world and use innovative methodologies to investigate the issue of audit partner gender. Based on a sample of 715 firm years from Denmark, Finland and Sweden, Ittonen and Peni (2012) find that female audit engagement partners earn higher fees. Similarly, Hardies et al. (2015) mainly use data of private Belgian firms from 2008 and 2011 to show that female audit partners earn a seven percent fee premium in Belgium. Using a sample of total 770 firm-year observations from large Finnish and Swedish listed firms, Ittonen et al. (2013) find that firms audited by of female engagement partners exhibit smaller abnormal accruals. Similarly, using data on financially distressed private Belgian firms and the likelihood of issuing going-concern opinion to capture audit quality, Hardies et al. (2016) find that female audit engagement partners seem to express going-concern opinion more often, thus, female audit engagement partners improve audit quality. In contrast, using data on financially distressed Australian listed firms, Hossain, Chapple, and Monroe (2018) report findings that stand in sharp contrast

### *General Introduction*

to those reported by earlier studies and suggest that audit quality of female engagement partners is significantly lower when captured by the likelihood of issuing going-concern opinion. The authors report lack of significance when discretionary accruals are used to capture audit quality. Similarly, using data on publicly listed Chinese firms, Yang, Liu, and Mai (2018) report that female auditors produce lower-quality audits because audit clients of male auditors are more likely to have lower absolute and income-increasing discretionary accruals. In the U.S., Lee et al. (2019) study the effect of lead engagement partner gender on abnormal accruals and financial restatements. They find that female engagement partners positively influence accruals quality. However, no association is observed between accounting restatements and female audit partners.

In summary, archival auditing literature documents somewhat mixed results with regard to gender-differentiated audit quality. Some studies suggest that female audit partners charge premium audit fees (Hardies et al., 2015; Ittonen & Peni, 2012) and enhance audit quality (Hardies et al., 2016; Ittonen, Vähämaa, & Vähämaa, 2013; Karjalainen, Niskanen, & Niskanen, 2018; Lee et al., 2019). Others suggest that female audit partners produce lower-quality audits or sometimes report absence of any link between gender of lead audit partners and audit outcomes (Gul, Wu, & Yang, 2013; Hossain et al., 2018; Yang et al., 2018). The mixed results from these studies highlight the importance of considering institutional settings and auditing environments that may consequently influence audit partners' decision-making. For example, regulatory oversight is not the same for public listed firms and private firms. Similarly, majority of these studies are conducted in countries where only one audit partner is involved in the audit process (Hossain et al., 2018; Hardies et al., 2015; Hardies et al., 2016; Karjalainen et al., 2018; Lee et al., 2019). Some studies are conducted in capital market

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settings where two partners are assigned by same audit firm to administer audits (Gul et al., 2013; Ittonen & Peni, 2012; Ittonen et al., 2013; Kung, Chang, & Zhou, 2019). Further, it is worth emphasizing that signing auditor in China is not necessarily an audit partner. This distinction is important because audit partners are owners and agents of their firms at the same time (Gul et al., 2013; Lennox & Wu, 2017).

We seek to investigate the role of audit partner gender in French audit setting, according to the public register of French statutory auditors, 22.3 percent of total registered auditors are women. This proportion has slightly improved from 20.2 percent in 2015 (CNCC, 2020). In public accounting firms, women representation is gender-balanced when it comes to recruitment at junior assistants (Dambrin & Lambert, 2008). Like many other countries, women represent poorly at upper echelons of accounting profession that confer highest responsibility and power within accounting firms (i.e., partnership position) (Dambrin & Lambert, 2012; Lupu, 2012). Prior studies highlight that marginalization of women in public accounting firms is a phenomenon related to vertical segregation (e.g., subaltern tasks are allocated to women). Prior studies also discuss several reasons to explain higher turnover and rarity of women in accounting firms such as family-centered lifestyle choices, motherhood, and existence of implicit and explicit organizational barriers.<sup>5</sup> The rate of feminization of Big Four's partners in France varies between 10 and 18 percent in 2010 (Lupu, 2012). In comparison, Hardies et al. (2015) also reported that female account for about 20 percent of all registered auditors and the number of female auditors who achieve partnership status is rather low (around 12 percent of audit partners versus about 20 percent in the U.S).

With regards to incentives for delivering higher audit quality, litigation costs or

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<sup>5</sup> Dambrin and Lambert (2012) provide a reflexive review of 44 studies related to gender in accounting research published before June 2009. The authors identify the existing perspectives in literature that explain rarity of women at upper echelons of accounting profession and categorize them into pseudo-neutral perspective and comprehensive perspective.

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deep pocket arguments are commonly used for large audit firms operating in a common-law system. However, auditors in France face lower litigation risk due to the reduced responsiveness of the French civil law legal system (La Porta, Lopez-de-Silanes, Shleifer, and Vishny 1998). In French audit setting, reputation concerns mainly motivate external auditors to protect their independence and provide higher-quality audits (Bennouri, Nekhili, & Touron, 2015). A negative shock may jeopardize auditor reputation and lead to loss of audit fee revenue from client firms switching to other reputable auditors. Lobo, Paugam, Zhang, and Casta (2017) note that three major channels through which litigation forces discipline on French audit partners. First, investors may file civil lawsuits in the form of private enforcements. Second, French market Authority may also impose financial and criminal sanctions on statutory auditors of listed firms and disclose in on their website. Finally, the French National Institute of Auditors (*Compagnie Nationale des Commissaires aux Comptes*, CNCC), the regulatory body of auditors and the oversight board of auditors (H3C) may enforce disciplinary sanctions including prohibition of professional activity relating to statutory audits.

We seek to contribute to literature on gender-differentiated audit quality by investigating the link between the gender of lead audit partners and audit quality in a mandatory joint audit setting. In France, two engagement partners are assigned by distinct audit firms to jointly administer audit of a client firm. Both partners split the audit task, cross-review each other's work and issue a single audit report bearing the signature of both partners along with the names of their audit firms. In our setting, the composition of the joint audit engagement partners may have two male, two female, or one male and one female partner. We postulate that male-female joint engagement partner pairs are likely to possess diverse skill, abilities and perspectives compared with

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same gender joint engagement partner pairs (i.e., male-male, female-female). In addition, male-female joint audit partners may on average differ from same gender audit partners in terms of conservatism, risk preference, and overconfidence. Thus, male-female joint partner pairs may promote professional skepticism, effective monitoring and collaborative behavior with regard to audit process. Contrary to the benefits of having gender-diverse audit partners, potential costs of differences in innate characteristics and risk preferences may result in lack of understanding and miscommunication. Acrimonious relationship between male-female joint partner pairs may lead to suboptimal collaboration that can be potentially detrimental to audit quality. Further, higher empathy level may encourage female engagement partners to relax audit rules and compromise with their clients, thereby providing client management with an opportunity for opinion shopping (Ratzinger-Sakel, Audoussert-Coulier, Kettunen, & Lesage, 2013; Yang et al., 2018). Consequently, it can become major impediments to the potential benefits of gender diversity and may exacerbate the coordination problems highlighted in the literature (Lobo et al., 2017; Zerni et al., 2012).

From audit demand perspective, the current dissertation also examines if gender profile of audit clients affect audit partner selection/assignment decisions. Examining this issue is particularly important in the context of Cope-Zimmermann law aimed at promoting gender diversity in top corporate positions in France. This legislation obliged French firms to appoint at least 20% female members up until 2014 and at least 40% by 2017. Two recent studies have examined whether personal attributes of people involved in external auditor selection affect client-partner alignment decisions. These studies mainly rely on the Homophily argument to explain the link between personal attributes of audit clients (namely, gender, ethnicity and experience) and personal



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attributes of lead audit partners in the U.S. context (Berglund & Eshleman, 2019; Lee et al., 2019). The Homophily principle posits that various types of individuals have implicit tendency to prefer interacting with demographically similar individuals (Ibarra 1992; McPherson, Smith-Lovin, & Cook, 2001).

In sum, in the light of opposing arguments discussed above, it is not self-evident that whether male-female joint audit partners would enhance audit quality or not. Even if there is gender-differentiated audit quality in joint audit setting, it is unclear whether boards of directors differentiate between same-gender audit partners and gender-diverse partners. Additionally, it also needs to be empirically examined that whether gender of corporate board members influence audit partner selection/assignment decisions in French joint audit setting.

## *Methodology*

### *Choice of audit quality proxies*

An important characteristic of audited financial reports is that they are intended to be used by heterogeneous groups of stakeholders with diverging interests. Audit quality is a multidimensional construct and difficult to observe directly (Francis, 2011; Warming-Rasmussen & Jensen, 1998). Assessing audit quality ex ante is problematic, prior research typically identified few attributes of external auditors that influence the perception of corporate stakeholders with regard to audit quality. For example, industry expertise or firm size (Big N) is a desirable attribute that positively affects audit quality perceptions of various corporate stakeholders (Carcello, Hermanson, & McGrath, 1992; DeFond & Zhang, 2014; Duff, 2009). Audit clients may possibly assess audit quality ex post by witnessing outright audit failures that occur relatively infrequently or by observing attributes of audited financial statements that are influence by external

auditors (Francis, 2004; Knechel et al., 2008).

Traditionally, accounting and auditing studies consider that audit quality, to a large extent, is influenced by competence and independence dimensions of external auditors and strive to capture audit quality by using a number of proxies (DeAngelo, 1981; Hay, Knechel, & Wong, 2006). There is no single measure that is capable of painting the complete picture of audit quality and in general no consensus exists on which proxies are best to capture audit quality. In this regard, DeFond and Zhang (2014) argue that audit quality measures could be categorized into two broad and inherently different groups: input- and output-based measures. Proxies based on output of audit process (e.g., type of audit opinion issues by external auditor or financial reporting qualities) are more appealing as they reflect actual audit quality delivered by external auditors. Studies with focus on supply of audit services frequently use output-based measure. However, an important limitation of output-based measures is that these are simultaneously constrained by internal controls and innate characteristics of audit clients (Antle & Nalebuff, 1991). Alternatively, audit quality may be inferred by focusing on observable inputs to the audit process such as audit fees and attributes of external auditors. These proxies are appealing as audit clients choose external auditors based on observable inputs such as industry expertise and brand name reputation. That is why studies with focus on demand of audit services almost exclusively use input-based measure. Direct measure of audit quality (i.e., going concern opinion and restatements of financial statements) are not applicable in our setting due to difference in regulations<sup>6</sup> (Ratzinger-Sakel et al., 2013). Therefore, in this dissertation, we choose audit fees (an input-based measure) and intend to complement our results by examining discretionary accruals (an output-based measure). The choice of discretionary accruals

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<sup>6</sup> Ratzinger-Sakel et al., (2013) reviewed articles published on joint audits in different capital market

is also consistent with the view that audit quality may be considered as a continuum that may range from a low level quality to a high level quality rather than considering it with a dichotomous variable (Francis, 2011).

*Endogeneity problems*

Archival auditing literature at audit firm level has long recognized that endogeneity issues pose serious challenges for empirical studies examining the issue of audit quality. A major challenge for such studies is endogeneity issue arising from selection bias. External auditor selection/appointment is two-party contractual arrangement determined by audit clients and auditor factors. Client-partner alignments can be affected by observable factors of both parties. Audit clients choose external auditors based on observable factors and external auditors may also strategically select less risky clients that are associated with better financial reporting. In such a scenario, audit quality could reflect client innate characteristics rather than auditor effects. Following recent empirical studies, we implement Propensity Score Matching (PSM) technique throughout in this dissertation to counter concerns of selection bias arising from observable client firm characteristics and auditor characteristics (Rosenbaum & Rubin, 1983).

DeFond and Zhang (2014) note that the level of reported earnings in audited financial statements is a joint product of client firms' innate characteristics, internal control mechanisms and external auditors. Lennox and Wu (2018) argue that endogeneity issues are also serious for partner level studies, when financial reporting quality is used to capture audit quality. We consider a wide range of client firm (including audit committee characteristics), audit firm and engagement partner specific characteristics, which may contribute to or mitigate the magnitude of earnings

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settings and provide a summary of findings reported by extent research.

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management (Dechow et al., 2010). It is still possible that the potential effect of external auditor on earnings management is driven by unobservable client characteristics that affect both auditor selection and earnings management simultaneously. Therefore, we apply the system GMM regression method to counter endogeneity issues arising from unobservable factors such as simultaneity and unobserved heterogeneity. In addition, we also use the difference-in-differences technique and audit partner switch analysis to confirm our results in chapter two of the current dissertation.

### *Outline of the dissertation*

This dissertation blends three chapters, where the first chapter concentrates on audit fees because it is an input to the audit process. This chapter has also been published in the International Journal of Auditing. The second chapter of this thesis focuses on earnings management because it is an output of the audit process. The third chapter focuses on factors affecting the demand for gender-diverse audit partners, with a particular focus on gender profile of audit clients.

The first chapter of this dissertation considers audit fees as an input-based audit quality measure. A distinguishing feature of this measure is that auditor-client contracting features directly affect the level of audit fees. External auditors cannot unilaterally command extra audit fees, unless audit clients agree to pay for additional effort or willing to pay audit fee premium due to audit risk. Therefore, accounting and auditing studies consider higher audit fees to infer audit quality. In the context of French joint audits, we start examining the issue of audit partner gender by using a sample of non-financial firms from the CAC All-shares index listed on Euronext Paris from 2002 to 2010. We start this chapter by briefly introducing the issue of gender in auditing and shed light on the specificities of French regulatory environment in the

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following section. In section 3, we review the literature related to our study in order to formulate our hypotheses. The section 4 describes the variables used in the panel regressions and discusses empirical models. Following prior literature, we control for the specific attributes of several well-known client firms and audit firms following. In addition, we also control for the specific attributes of engagement partners, so that our variable of interest (gender-diverse engagement partners) is not confounded with other attributes of engagement partners. Results of this chapter are discussed in section 5, followed by conclusions and discussion of limitations of this chapter in the last section.

In chapter two, we consider earnings management and we are particularly interested to examine whether audit fees (input-based measure) directly translate into less earnings management (output-based measure). In doing so, we used a sample of firms listed on the SBF 120 index over the period 2002 to 2017 inclusive. The rationale for using a sample of largest French firms is that the composition of joint audit firms may include Big/Big, Big/non-Big, or non-Big/non-Big audit firms. The joint audit literature suggests that the choice of different combinations has implications not only with regard to the distribution of audit task but also to audit outcomes (Francis et al., 2009; Ratzinger-Sakel et al., 2013). Therefore, we use a sample in which 84% of the firms engage either Big/Big or Big/non-Big audit firms because there is no evidence that non-Big/non-Big auditor pair can constrain more earnings management than Big/Big or Big/non-Big. In this chapter, we also control for audit committee characteristics because corporate boards delegate their financial oversight responsibilities to audit committee. Audit committee also facilitates external auditors to perform their responsibility of statutory audit independently from management pressure. We start this chapter by highlighting the role of external auditors in detecting and curtailing discretionary accounting practices. The next section highlights extant

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studies on earnings management, and discusses literature in relation to our study. In section 4 features hypothesis development. We then describe data, selection of variables, and econometric specification in fifth section. We mitigate endogeneity concerns by using appropriate estimation method and report regression estimates of alternative methods for comparability purpose. Main results of this chapter are discussed in section 5 and additional analyses are conducted in section 6. Finally, we present the conclusion of chapter 2 and discuss the implications in last section.

In chapter three, we focus on factors affecting the choice of gender-diverse engagement partners. We discuss extant literature on auditor selection and develop hypotheses in second section. In accordance with theoretical homophily argument, we examine whether gender-diverse boards affect the likelihood of selecting gender-diverse partners. In second question, we go beyond theoretical homophily argument and distinguish between female board members on the basis of their position on corporate boards. Specifically, we conjecture that engagement partners' choice likely to be affected by the disparity of incentives between those board members who are more involved in the board's monitoring function and those who are not (i.e., inside directors). The third section of this chapter describes sample selection and research method of this study. We use data on firms listed on the SBF 120 index over the period 2002 to 2017 inclusive. In addition to well-known financial attributes of audit clients, we include a wide range of client governance, audit firm and partner attributes in our model. To obtain convincing evidence, we measure board gender diversity in multiple ways and use appropriate econometrical procedures to alleviate concerns about endogeneity issues arising from multiple sources. The fourth section features main analyses. Finally, we conclude chapter 3 and discuss important implications in the last section.

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## **Chapter 1: Gender-diverse audit partners and audit fee premium: The case of mandatory joint audit**

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### ***ABSTRACT***

This study investigates the impact of audit partner gender on audit fees in a unique audit regulatory environment, namely France, where joint audit is mandatory by law. Apart from the fact that male and female audit engagement partners have distinctive behaviors and style, the question also arises as to whether coordination problems between two competing audit firms are exacerbated or mitigated by the presence of a female as joint audit partner. This issue could be more challenging in the context of IFRS adoption, which increases audit task complexity, audit risk, and audit effort. Using a propensity score matched sample of firms from the CAC All-shares index listed on Euronext Paris from 2002 to 2010, we find that the presence of the female audit partner in the joint auditor pair composition leads to higher audit fees. Further, we show that IFRS adoption has a positive impact on the audit fees charged by gender-diverse audit partners. In supplementary analyses, we show that the relationship between gender-diverse audit partners and audit fees depends on the size of the audit firms taking part in the joint audit. Our research raises important implications for practice, regulation and research.

**Keywords:** Audit partner gender, audit fee, joint audit, IFRS

## **Chapitre 1: Partenaires d'audit de sexe différent et prime d'audit: Le cas de l'audit conjoint obligatoire**

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### ***RÉSUMÉ***

Cette étude examine l'impact de la mixité du genre du collège des commissaires aux comptes sur les honoraires d'audit dans un environnement réglementaire de co-commissariat, en l'occurrence celui de la France. Outre le fait que les commissaires aux comptes masculins et féminins ont des comportements et un style distincts, la question se pose également de savoir si les problèmes de coordination entre deux cabinets d'audit concurrents sont exacerbés ou atténués par l'implication d'une femme commissaire aux comptes dans une mission d'audit externe menée conjointement par deux cabinets. Cette mission pourrait être plus difficile dans le contexte de l'adoption des normes IFRS, qui accroît manifestement la complexité des tâches d'audit, le risque d'audit et l'effort d'audit. En utilisant la méthode de score de propension apparié sur un échantillon de sociétés françaises de l'indice CAC All-shares cotées de 2002 à 2010, nous constatons que la différence dans les honoraires d'audit provient pour l'essentiel de la présence d'une femme dans le collège de commissaires aux comptes, et que cette différence est principalement observée après la mise en place des normes IFRS. Dans une analyse complémentaire, nous montrons que l'impact sur les honoraires d'audit de la présence d'une femme commissaire aux comptes et de l'interaction homme-femme au sein de ce collège dépend, mais d'une manière différente, du nombre de cabinets d'audit de grande taille dits « Big four » dans le collège des commissaires aux comptes.

**Mots-clés:** Partenaires d'audit de sexe différent, honoraires d'audit, audit conjoint, IFRS

## **1 Introduction**

The existing literature on audit firm attributes has largely investigated characteristics such as audit firm size (Big or non-Big), industry specialization, and audit firm tenure (e.g., Francis & Krishnan, 1999). Those studies implicitly assume that within an audit firm, pricing of an engagement is uniform across all offices and partners. However, in recent years, the unit of analysis has shifted to city-level offices, because in practice, most dealings (e.g. establishing and managing relations, conducting audits, signing audit reports) with clients are conducted by individual partners from local offices (Chung & Kallapur, 2003; Ferguson, Francis, & Stokes, 2003; Reynolds & Francis, 2000). Going one step further, an increasing number of studies have shifted the unit of analysis to the audit engagement partners' attributes. The motivation for such disaggregation of analysis runs counter to the implicit assumption of homogeneity. The characteristics of engagement partners differ from one another and such differences may impact audit planning and audit outcomes that are not explained by audit firm attributes. Following the suggestion of DeFond and Francis (2005), different studies show that the engagement partner's characteristics such as gender, industry expertise, tenure have implications for audit quality and audit fees (Carey & Simnett, 2006; Hardies, Breesch, & Branson, 2015; Ittonen & Trønnnes, 2015; Ittonen, Vähämaa, & Vähämaa, 2013; Zerni, 2012).

A growing number of empirical studies in the audit fee and audit quality literature extend these findings. Ittonen et al. (2013) demonstrate that gender of audit engagement partner is associated with audit quality and financial reporting. Their empirical findings show that firms audited by female audit partners have fewer abnormal accruals. Hardies, Breesch, and Branson (2016) find that female audit partners seem to express going-concern opinions more often and that female audit

partners improve audit quality. Some recent studies that explicitly investigate the impact of audit engagement partners' gender on audit fees find that female engagement partners are associated with higher fees than their male counterparts (Hardies et al., 2015; Ittonen & Peni, 2012).

Motivated by the literature on auditor gender and audit fees, we explore the unique audit environment of France. Our study differs significantly from recent studies on female audit fee premiums in that the French audit environment is characterized by a long-standing joint audit requirement. In France, joint audit is mandatory by law and the names of the engagement partners can be identified. Previous studies on female audit fee premium were conducted in countries where only one auditor is involved in audit process. The issue of gender with regard to audit partnership may matter more in a joint audit environment than in the context of single audit of firms. In addition, to the female audit fee premium highlighted in previous studies (Hardies et al., 2013; Ittonen et al., 2013), collaboration between a female and a male audit partners within the joint auditor pair composition may be different from that between male joint audit partners, which may lead to different fees paid to the auditing firms. Being less overconfident than men, female audit partners may require extra audit effort, thus resulting in higher audit fees (Owhoso & Weickgenannt, 2009). Further, female auditors are more likely to outperform male auditors in processing inventory evaluation information and are then significantly more efficient at complex analytical procedures than male auditors (O'Donnell & Johnson, 2001). In addition to the attitudinal differences between male and female auditors, several advantages, with respect to gender diversity and team effectiveness can be also advanced (i.e., more cooperation, better communication and negotiation skills, problem-solving capability). These advantages are particularly crucial in a joint audit environment where the lack of collaboration between audit



engagement partners may lead to insufficient exchange of information and to inefficient audit (Gonthier-Besacier & Schatt, 2007; Thinggaard & Kiertzner, 2008; Zerni, Haapamäki, Järvinen, & Niemi, 2012; Ittonen & Trønnnes, 2015). To our knowledge, we are the first to investigate the impact of audit partner gender on audit fees in a joint audit context.

Furthermore, listed firms in France have since 2005 been required to prepare their financial statements using International Financial Reporting Standards (hereafter, IFRS). The adoption of IFRS increases audit task complexity and leads to greater audit effort and higher audit fees (Kim, Liu, & Zheng, 2012; De George, Ferguson, & Spear, 2013). IFRS implementation presents a challenging environment for both companies and their auditors and results in the emergence of two different challenges – technical and human. In other words, IFRS are complex to apply and their success requires good communication between auditors and client firms. As well as the advantages accruing to gender-diverse teams (Hennessey & Amabile, 1998), female audit partners are significantly more efficient at complex analytical procedures than male audit partners (O'Donnell & Johnson, 2001). Consequently, IFRS adoption offers a unique setting for exploring the extent to which gender differences between joint audit partner compositions influence the fees paid to the auditing firms.

In our empirical setting, we use a panel data set of CAC All-Shares Index firms listed on Euronext Paris from 2002 to 2010, resulting in an unbalanced panel of 2,431 firm-year observations. We first use propensity score matching, which controls for characteristics of client firms audited by male joint audit partners and those audited by male-female joint audit partners (hereafter gender-diverse audit partners). We find that when a female audit partner is paired with a male audit engagement partner, they earn an audit fee premium of 11%. Our results show that the consideration of the gender of

audit partners is important for understanding the cost of joint audit engagements. Furthermore, we examine the impact of the gender of audit partner on audit fees in the context of IFRS implementation. We find that IFRS adoption has a significant and positive impact on the premium earned by gender-diverse audit partners. Finally, we find evidence that the impact of gender-diverse audit partners on audit fees depends on the size of the audit firms in the joint auditor pair composition.

Our paper is structured as follows. In section 2, we discuss the French institutional setting and in section 3, we review the literature related to our study in order to formulate our hypotheses. In section 4, we discuss our empirical models and describe the variables used in the panel regressions. Results of our study are discussed in section 5. We then draw our conclusions and discuss the limitations of our study.

## **2 The French institutional setting**

Statutory auditors in France are referred to as “*Commissaires Aux Comptes*.” The French National Institute of Auditors (*Compagnie Nationale des Commissaires aux Comptes*, CNCC) is the regulatory body of auditors, supervised by the Ministry of Justice. Joint audit was a common practice even before it was formally a legal requirement. However, since 1966 listed companies have been legally required to be audited by joint auditors (Francis, Richard, & Vanstraelen, 2009). Specifically, joint audits are formally mandated by Article 223-3 of the legislation pertaining to commercial firms. On March 1, 1984, Article 823-2 of the French commercial code extended the joint-audit requirement to all companies that prepare consolidated financial statements (Ratzinger-Sakel, Audousset-Coulier, Kettunen, & Lesage, 2013).

In a joint audit, at least two independent audit firms audit the financial statements of a company, and sign and issue a single audit report. Although certain

countries allow joint audits on a voluntary basis, in France, joint audit is mandatory by law for all listed firms.<sup>7</sup> Piot (2007) argues that joint audit has two advantages. It provides a cross-review of each audit firm's diligence and it also reinforces each audit firm's independence. Since the European Commission (EC) proposal, much research has focused on the benefits and costs of joint audits.<sup>8</sup> Proponents claim that joint audits enhance audit quality by increasing the auditors' independence and competence. Prior research also suggests that audit engagement partners seek informal advice from their peers to improve their audit judgment and justify their decisions (Danos, Eichenseher, & Holt, 1989). As noted by Ittonen and Trønnnes (2015), joint audit partners possess considerable client knowledge, and share liability. They can thus both benefit from informal benchmarking, peer consultations, and communication. These authors also empirically examine the "four-eyes" principle in voluntary joint audit setting and find that joint audit partners may improve audit quality, but do not increase the audit fees. Nonetheless, joint audits have been criticized for various reasons, such as audit inefficiencies caused by suboptimal collaboration, overlapping procedures, and issues of coordination and information exchange, and higher cost (Gonthier-Besacier & Schatt, 2007; Thinggaard & Kiertzner, 2008; Zerni, 2012).

Another unique requirement of the French environment is that shareholders appoint auditors at annual general meetings for a fixed tenure of six years, which may subsequently be renewed. During this period, auditors can neither be dismissed nor resign, except under exceptional circumstances. Audit firms can also be reappointed for

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<sup>7</sup> Joint audits were also mandatory for listed companies in Denmark from 1930 to 2004. However, companies may still opt for voluntary joint audits. In Sweden, joint audits were mandatory for banking and insurance firms until 2004 and 2010 respectively. Firms in Sweden and Finland frequently use voluntary joint audit engagement partners (Ratzinger-Sakel et al., 2013; Ittonen & Trønnnes, 2015).

<sup>8</sup> In the Green Paper published in 2010, the European Commission proposed the adoption of joint audits to "dynamise the audit market" in Europe. Following the recommendations of the Green Paper, the European parliament approved new regulations in April 2014 that encourage joint audits.

another six years. Accounting scandals in USA and Europe (i.e., Enron, Worldcom, and Parmalat) prompted many regulatory changes around the globe. As a result, legislation regarding commercial firms was changed, with the introduction of the Financial Security Law in 2003. The Financial Market Authority (Autorité des Marchés Financiers, AMF) was also constituted under this law. The AMF not only oversees the functioning of security markets, but also approves the appointment of statutory auditors (Francis et al., 2009). The new legislation re-emphasized the long-standing practice of strict separation of legal audit and consulting services. Under this law, client firms are required to disclose the audit fees paid to audit firms. However, many client firms anticipated the regulatory change and voluntarily started publishing audit fee information prior to 2003, as it was already recommended by European Commission in May 2002 (Gonthier-Besacier & Schatt, 2007).

### **3 Literature review**

#### *3.1 Audit engagement partner and audit fees*

Joint audits are administered under the French auditing standards (*Norme d'Exercice Professionnel* -NEP). NEP 100 requires each engagement partner to understand the audited entity so that risk of material misstatement can be assessed at financial statement level. Audit task is divided between joint audit partners and then each partner reviews the audit task carried by the other audit partner. Further, each joint audit partner must express its opinion in a single audit report that is signed by both audit partners. Similarly to ISA 300, NEP 300 requires the engagement partner to be involved in audit planning and discussion with key members of the audit team in developing audit strategy. Audit planning and client risk assessment are important phases during an audit process, because the audit fee is based on decisions made during

these phases (Ittonen & Peni, 2012). Davidson and Gist (1996) show that audit planning may decrease the required audit effort to a certain extent and that additional planning may be needed for high-risk clients. Zerni et al. (2012) argue that even if audit pricing is decided at the audit firm level, differences in the engagement partner's reputation and expertise will be reflected in the audit hours budgeted and in billing rates. Based on structured interviews with audit practitioners, Dickins, Higgs, and Skantz (2008) note that the estimated effort required to conduct an audit and the rank of audit personnel required to perform an audit are two primary drivers of audit fees. However, the estimated audit fees are adjusted according to the engagement partner's experience, knowledge of clients, and perceived risk and reward. Individual audit engagement partners can exercise a high degree of autonomy and professional judgment during an audit engagement (Knechel, Niemi, & Zerni, 2013). Taylor (2011) shows empirically that audit fee premiums and discounts are partially attributable to the identity of the individual audit engagement partners. De George et al. (2013) conclude that the examination of audit costs is, to some extent, based on auditor behavior.

### *3.2 Audit engagement partners' gender and audit fees*

The effect of the gender of audit partners on audit fees stems from various main sources – risk aversion, cognitive information processing, cooperation, communication and negotiation skills. First, women are generally risk averse and tend to avoid losses (e.g., Byrnes, Miller, & Schafer, 1999; Dwyer et al., 2002). In a laboratory experimental study, Hardies et al. (2013) provide evidence that female audit partners are more risk averse than male audit partners. As a result, a female audit partner may require more audit effort for an audit engagement and that could result in higher audit fees. Barber and Odean (2001) show that in general men are overconfident and that such overconfidence may affect their decision-making, especially in relation to

business. Niederle and Vesterlund (2007) find that, in an equally competitive environment, men tend to be greatly overconfident, even though the performance of men and women is the same. Owhoso and Weickgenannt (2009) report that audit teams are overconfident at all levels (e.g., audit partner, senior manager, and staff level). An overconfident auditor may underestimate the risk associated with an audit engagement, thus resulting in lower audit fees, whereas a less confident auditor may require extra audit effort, thus resulting in higher audit fees.

Additionally, the difference between female and male audit partners may be explained by their distinctive cognitive information processing, also known as the selectivity hypothesis. Experimental and behavioral accounting research shows that auditor gender may impact auditor judgment. Chung and Monroe (2001) find that audit task complexity may affect the accuracy of decisions. Female outperform male audit partners in processing inventory evaluation information. O'Donnell and Johnson (2001) show that female auditors are significantly more efficient at complex analytical procedures than male auditors. These findings are reflected to a certain extent in the audit fee and audit quality literature. Some studies show that auditor gender is associated with audit quality and financial reporting. Ittonen et al. (2013) empirically show that client firms of female audit engagement partners have fewer abnormal accruals. Similarly, Hardies, Breesch, and Branson (2016) find that female audit engagement partners seem to express going-concern opinion more often. Thus, female audit engagement partners improve audit quality, and client firms may pay a fee premium based on the higher audit quality. Ittonen and Peni (2012) find that female audit engagement partners earn higher fees, attributing this to female auditors' greater risk aversion, less overconfidence and better preparation. Similarly, Hardies et al. (2015) show that female audit partners earn a seven percent fee premium in Belgium.

These authors argue that the fee premium may result from supply- or demand-side factors regarding female auditors (e.g. perceived audit quality, client satisfaction, and demand for diversity, skills or abilities).

Clearly, the issue of gender with regard to audit partnership may matter more in a joint audit environment than in single audit firm context. One problem generally stressed with regard to a joint audit environment is the lack of collaboration between audit partners, leading to insufficient exchange of information (Gonthier-Besacier & Schatt, 2007; Thinggaard & Kiertzner, 2008; Zerni, Haapamäki, Järvinen, & Niemi, 2012; Ittonen & Trønnnes, 2015). The nature of the interaction between audit engagement partners then becomes crucial for effective collaboration between joint audit firms. Apart from the fact that male and female audit engagement partners have distinctive behavior and styles, the question is whether coordination problems between two competing audit firms are exacerbated or mitigated by the presence of a female auditor in the joint auditor pair composition. Relevant advantages are stressed with respect to gender diversity and team effectiveness. Diversity and working relationships are effective for problem-solving capability, by promoting a more robust critical evaluation (Hennessey & Amabile, 1998). Cognitive and experiential diversity encourages clarification, organization and combination of new approaches for the attainment of goals (Thomas & Ely, 1996). A meta-analysis by Balliet, Macfarlan, and Van Vugt (2011) on sex difference in cooperation show that women cooperate more than men and possess better communication abilities compared to men. Better cooperation between gender-diverse engagement partners can then enhance collaboration with regard to audit planning and risk assessment, leading to lower possibility of audit failure. Documented differences in negotiation skills between men and women can provide comparative advantage to gender-diverse audit partners,

leading to higher audit fees (Beattie, Fearnley, & Brandt, 2000).

These arguments imply that there is a positive relationship between gender-diverse audit partners and audit fees. Therefore, we propose the following hypothesis:

**H1:** *Gender-diverse audit partners charge higher audit fees than two-male audit partners.*

### *3.3 IFRS adoption and audit fees*

Since 2005, it has been mandatory for listed companies in Europe to prepare their consolidated accounts using IFRS (EU Regulation 1606/2002). This regulatory change is intended to harmonize companies' financial information, to increase transparency and comparability of financial statements, and to ensure efficient functioning of capital markets. A number of studies have empirically analyzed the impact of IFRS on financial reporting quality and show that the decision to adopt IFRS leads to decreased discretionary accruals and earnings management, increased accrual quality and value relevance of accounting information, and timely loss recognition (Barth, Landsman, & Lang, 2008; Chen, Tang, Jiang, & Lin, 2010). The NEP 315 standard (which corresponds to the adaptation of ISA 315) states that the implementation of new accounting principles increases risk associated with preparation of financial statements (Degos & Mairesse, 2014). Consequently, higher audit risk also results in higher audit fees. IFRS adoption brought relatively greater comparability and consistency in financial accounts. However, increased use of fair values and dense disclosures have made financial statements highly complex and unmanageably large (KPMG 2007). Wieczynska (2016) shows that IFRS implementation results in an expert advantage for global accounting firms. Its adoption has increased the probability of switching from a small audit firm to a global audit firm for client firms that are listed under a strong regulatory regime.



Several studies have focused explicitly on the consequences of IFRS adoption and audit fees. Kim et al. (2012) find that the decision to adopt IFRS resulted in 5.44 percent higher audit fees in 14 European countries. They argue that the increase in audit task complexity induced by IFRS is the driving force behind fee premiums. Similarly, De George et al. (2013) provide evidence that for Australian listed firms IFRS adoption increased audit fees on average by 23 percent in the year of transition. They estimate an eight percent IFRS-related fee premium, which is higher than the normal yearly increase. They also surveyed auditors from Big N audit firms and identified six aspects of IFRS requirements that require more audit effort for adequate compliance. They show client firms with greater exposure to these specific standards bear higher increases in audit fees. In sum, the existing literature suggests that IFRS adoption increases audit task complexity, and therefore, audit risk and audit effort required for an audit engagement.

The issue of gender with regard to audit partnership may be more challenging in the context of IFRS adoption. For auditors, IFRS implementation leads to the emergence of two different types of challenges – technical and human. The technical problems naturally arise from problems of transition to the standards and the lack of equivalent concepts in country-specific practices (Baskerville & Evans, 2011). Pope and McLeay (2011) emphasize that IFRS are complex to apply, and that major differences in the degree of compliance with certain aspects of IFRS are then observed not only between countries, but also between firms in the same country. Human problems also arise because of the importance of the auditor-client relationship in this new accounting environment. Indeed, audit effectiveness and efficiency require good communication between auditors and client firms (Golen, Catanach, & Moeckel (1997). One problem facing auditors' engagement partners in the period of IFRS

adoption is that many audit procedures require communication with clients who are not necessarily trained IFRS accountants or are not convinced of the potential advantages of IFRS. All these arguments point to a more complex environment, in which female auditors are found to outperform male auditors with regard to information processing effectiveness (O'Donnell & Johnson, 2001). Considering the importance of collaboration between audit engagement partners in a joint audit context, it has been shown that, in a more complex situation, a gender-diverse team is more innovative and creative, both of which are essential skills required for solving technical problems (Hennessey & Amabile, 1998). A gender-diverse team also enhances sensitivity to environmental turbulence (Donnellon, 1993; Tushman, 1997).

Conditional on accepting H1 by recognizing that audit fees are higher in gender-diverse audit partners compared to male joint audit partners, the IFRS driven audit complexity suggests that audit fees are likely to be higher in the post-IFRS adoption period particularly when there is a female in the joint audit partner composition. Accordingly, we propose that:

**H2:** *IFRS adoption has a positive impact on the audit fees charged by gender-diverse audit partners.*

## **4 Data and research methodology**

### *4.1 Sample selection*

We initially included all the companies in the CAC All-Shares index listed on Euronext Paris. Our sample period is based on annual data collected from 2002 to 2010. At the end of 2010, out of 511 listed firms, we excluded financial institutions, real estate firms, foreign firms and firms with incomplete data. As a result of this process, our final sample consists of 371 firms, and unbalanced panel data comprising

2,431 firm-year observations. Data related to accounting and financial information were gathered from Thomson DataStream. We collected annual reports from the official websites of individual companies, registration documents from the French Financial Markets Regulator (AMF) website, and some annual reports from Morningstar financial database. Data concerning the names and gender of audit engagement partners were collected manually from firms' annual reports.

We identify the gender of an audit partner from his/her name, as the engagement partner is obliged to sign audit report. If the name is not sufficient to identify the gender of audit partner, we use the official directory of the French National Institute of Statutory Auditors (<http://annuaire.cncc.fr>). We also controlled for the careers length of audit engagement partners (i.e., the number of years since the auditor's certification date). When the information was not available in the official CNCC website, we used a variety of sources to confirm such information, including [www.linkedin.com](http://www.linkedin.com).<sup>9</sup> and [www.dirigeant.societe.com](http://www.dirigeant.societe.com)

We empirically test our research hypothesis 1 using the panel data regression model given in Equation (1.1) and hypothesis 2 using the panel data regression model given in Equation (1.2).<sup>10</sup> Audit fee (*AUDITFEES*) is the dependent variable, whereas gender of the engagement partner (*GENDIV\_AP*) and *IFRS* are our test variables.

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<sup>9</sup> LinkedIn is a valuable professional oriented social network providing useful information about careers and business network (Bradbury, 2011). According to Cornaggia, Cornaggia, and Xia (2016), this web service has been used in previous studies as a primary source of individual's demographic information. In their investigation of audit partner rotation among U.S. publicly listed firms, Laurion, Laurence, and Ryans (2017) use both Google and LinkedIn to confirm that the named individuals are indeed audit partners. We have also tested the accuracy of data provided by LinkedIn by matching information available in the official CNCC website (<http://annuaire.cncc.fr>) to the one available in the personal LinkedIn page. No significant difference is noted between data gathered from the two sources.

<sup>10</sup> Some studies suggest the use of the simultaneous equation method to control for the effect of auditor choice on audit fee (Chaney, Jeter, & Shivakumar, 2004; Ireland & Lennox, 2002). Client firms choose Big or non-Big audit firms, according to their needs or firm characteristics. There are far more audit engagement partners than audit firms. The simultaneous equation approach is not necessary when analyzing engagement partner level (Taylor, 2011, p. 254).

Several firms' characteristics and audit firms' specific attributes are used as control variables in the multivariate panel regression model. We also include audit engagement partner-specific control variables to capture individual audit partners' specific characteristics.<sup>11</sup>

$$\begin{aligned} AUDITFEES = & \beta_0 + \beta_1 GENDIV\_AP_{it} + \beta_2 IFRS_{it} + \beta_3 CONTROL_{it} \\ & + \beta_4 CRISIS_{it} + \beta_5 INDUSTRY\_FE + \varepsilon_{it} \end{aligned} \quad (1.1)$$

where  $\xi_{it}$  is the error term and the subscripts  $i$  and  $t$  stand for firms and time, respectively. *CONTROL* is a vector of control variables that may differ across firms and audit partners (*SIZE*, *REC&INV*, *FOR\_ASSETS*, *R&D*, *LEVERGE*, *LOSS*, *BETA*, *ROA*, *CROSS*, *TENURE*, *NAUDITFEES*, *BIG*, *INDSPEC\_AF*, *INDSPEC\_AP*, *CAREER\_AP*, *PORTFOLIO\_AP*, *PUBSPEC\_AP*). All variables are as defined in Table 1.1.

Our hypothesis 2 states that the impact of *GENDIV\_AP* on audit fees should be greater after IFRS adoption than before. Since our aim is to measure the marginal effect of female audit partner (*GENDIV\_AP*) on *AUDITFEES* in the post-IFRS period, we perform the joint test of the sum of the coefficients on *GENDIV\_AP* and *GENDIV\_AP*  $\times$  *IFRS*. We test this proposition by using a difference-in-differences procedure to estimate the following model:<sup>12</sup>

$$\begin{aligned} AUDITFEES = & \beta_0 + \beta_1 GENDIV\_AP_{it} + \beta_2 IFRS_{it} + \beta_3 (GENDIV\_AP_{it} \times IFRS_{it}) \\ & + \beta_4 CONTROL_{it} + \beta_5 CRISIS_{it} + \beta_6 INDUSTRY\_FE + \varepsilon_{it} \end{aligned} \quad (1.2)$$

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<sup>11</sup> We use the Hausman test to choose between fixed and random effect models.

<sup>12</sup> In contrast to applying clustering at panel level, the difference-in-differences technique allows us to estimate the effects of a common environment (IFRS implementation in our case) by treating each observation as its own control (Donald & Lang, 2007). It is thus a powerful way of addressing heteroscedasticity and auto-correlation and of controlling for random causes of changes in the dependent variable over time (Knechel & Sharma, 2012).

## *4.2 Description of variables*

### *4.2.1 Dependent variable*

Audit fee (*AUDITFEES*) is our dependent variable. Following previous studies, we use natural logarithm of total audit fees (*AUDITFEES*) as our dependent variable (e.g., Hay, Knechel, & Wong, 2006; Hardies et al., 2015, Audousset-Coulier, 2015).

### *4.2.2 Independent test variables*

Gender-diverse audit partners (*GENDIV\_AP*) is our first test variable. It takes the value of 1 if either one of the joint engagement partners is female, and 0 if both engagement partners are male.<sup>13</sup> Based on the previous literature, a positive coefficient of *GENDIV\_AP* is expected on audit fees. The second test variable is *IFRS* represented by a dummy variable taking the value of 1 after adoption of IFRS standards in 2005, and 0 otherwise. As a proxy of an increase of audit task complexity, IFRS adoption is expected to have a positive impact on audit fees (e.g., De George et al., 2013; Kim et al., 2012). Since we aim to test the marginal effect of *GENDIV\_AP* on audit fees in the post-IFRS period, we also consider the interaction term between gender-diverse audit partners and *IFRS* ( $GENDIV\_AP \times IFRS$ ).

### *4.2.3 Control variables*

Dickins et al. (2008) note that the audit fee for a particular engagement is based on the billing rate and audit hours budgeted. Large client firms carry out more transactions, which require more audit hours to complete the audit. They consequently pay higher fees (Palmrose, 1986; Simunic, 1980). We anticipate client size (*SIZE*) to be

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<sup>13</sup> We exclude the case where two female audit engagement partners jointly conducted an audit because in our sample there were only 53 such observations. Consequently, we only considered the two remaining cases (i.e., female partner + male partner and male partner + male partner).

positively associated with audit fees. More complex clients are less transparent and require more extensive audit effort. Assets such as receivables and inventory (*REC&INV*) need more scrutiny and incur higher audit fees (Craswell, Stokes, & Laughton, 2002; Francis, Nanda, & Olsson, 2008). The complexity of client firms increases with their involvement in foreign operations (*FOR\_ASSETS*), which are more complex and more difficult to audit (Francis et al., 2009; Hay, 2013). We anticipate that client firms with higher research and development expenditure (*R&D*) will be associated with higher audit fees. Ittonen and Peni (2012) note that audit planning and risk assessment play an important role in determining audit fee size. Perceived riskiness of client firms may increase the audit effort required, and as a result the audit firm would demand higher audit fees. Client firms experiencing high *LEVERAGE* or client firms facing financial difficulty (*LOSS*) may be tempted to manipulate earnings, and thus pay higher audit fees (Bell, Landsman, & Shackelford, 2001; DeAngelo, DeAngelo, & Skinner, 1994). In line with the study by Collier and Gregory (1996), we predict a positive relationship between audit fees and beta (*BETA*) as a measure of risk positively associated with audit fees. Similarly, we use return on assets (*ROA*) as a proxy for the client's financial condition, and we expect a negative relationship between *ROA* and audit fees. Choi, Kim, Liu, and Simunic (2009) show that audit firms require a fee premium for clients that are cross-listed in strong legal regime countries. Accordingly, we expect cross-listed (*CROSS*) client firms to be positively associated with higher audit fees.

A number of specific variables of audit firms are also expected to impact the compensation paid to the auditors. We anticipate auditor tenure (*TENURE*) to be positively associated with audit fees paid by client firms (Audousset-Coulier, 2015). Non-audit services require additional audit effort in the event of significant

organizational changes, such as acquisitions and restructuring (Firth, 2002). French regulations prohibit the provision of audit and consultancy services to the same client firm. Nevertheless, client firms may acquire limited non-audit services (Mikol & Standish, 1998). In line with Audoussert-Coulier (2015) and Whisenant, Sankaraguruswamy, and Raghunandan (2003), we also predict a positive relationship between audit fees and non-audit fees (*NAUDITFEES*). A positive relationship between Big audit firms (*BIG*) and audit fees is expected because these firms are perceived as providing greater audit quality and thus charge higher audit fees. To comply with the specific French system requiring two statutory auditors, we compute the choice of external auditor with an ordinal variable taking values 0, 1, or 2 according to the number of Big audit firms within the joint auditor pair composition.<sup>14</sup> Following Hardies et al. (2015), we predict a positive relationship between the industry specialization of an audit firm (*INDSPEC\_AF*) and audit fees. Based on our sample data, we classify an audit firm as industry expert audit firm if it is the largest supplier within that particular industry based on its annual market share of audit fees. To measure the industry specialization of an audit firm, we refer to the Industry Classification Benchmark (ICB) developed in January 2005 by Dow Jones and FTSE, and adopted by Euronext in 2006.<sup>15</sup>

We also use audit engagement partner-specific control variables to capture individual audit partners' specific characteristics. Appointment of specialist audit partners is positively related with audit quality and audit fees. Zerni (2012) shows empirically that engagement partners earn higher audit fees when they are both industry

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<sup>14</sup> In the event that the client firm has more than two audit firms, we considered only the first two engagement partners with the highest audit fees. The number of client firms selecting more than two auditors is small and the audit fees paid to the third auditor is much lower than the compensation paid to the first two auditors.

<sup>15</sup> This industry classification is also used in Bennouri, Nekhili, and Touron (2015) and André, Broye,

specialists as well as public firm specialists. Goodwin and Wu (2014) argue that industry specialization is a partner-level phenomenon. We control for industry specialization of engagement partners (*INDSPEC\_AP*) in our study. Based on our sample data, we classify an engagement partner as an industry specialist partner, if the engagement partner is the largest supplier within that particular industry, based on annual market share of audit fees and having audited two or more clients in that industry. To measure the industry specialization of audit engagement partners, we also refer to the Industry Classification Benchmark (ICB) developed by Dow Jones and FTSE. We use a dummy variable that is equal to 1 if the engagement partner is an industry expert and 0 otherwise. Following Knechel et al. (2013) and Hardies et al. (2015), we control for the career of an engagement partner (*CAREER\_AP*). *CAREER\_AP* is defined as the number of years since the auditor's registration date. We use the mean career of both audit engagement partners. Following Ittonen et al. (2015), we control for audit partner public specialization (*PUBLSPEC\_AP*). We classify an audit engagement partner as a public specialist auditor if the audit engagement partner has audited two or more clients within that industry. We use a dummy variable equal to 1 if the audit engagement partner is a public client specialist and 0 otherwise. Following Hardies et al. (2015) and Zerni (2012), we also control for the engagement partner's total client portfolio (*PORTFOLIO\_AP*). This variable takes the value 1 if, for the audit partner, the portfolio of audited assets was greater than the median, and 0 otherwise.

Finally, we control for the global financial crisis and industries. Xu, Carson, Fargher, and Jiang (2013) examine whether the financial *CRISIS* impacts the likelihood of auditors making more audit effort and empirically show audit fees were higher

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Pong, and Schatt (2016).



during the period 2008–2009 compared with the period 2005–2007. Following Xu et al. (2013), we introduce a dummy variable which takes the value of 1 for the years 2008 or 2009 and 0 otherwise. Auditors are expected to charge higher audit fees during the period of global financial crisis. As emphasized by many previous studies, differences in audit requirements may vary among industries. Accordingly, indicator variables (*INDUSTRY*) are included in the model estimation to denote the industry of each company. We use the Industry Classification Benchmark (ICB) developed in January 2005 by Dow Jones and FTSE, and adopted by Euronext in 2006.

**Table 1.1: Definition of variables**

<b>Variable</b>	<b>Definition/Measure</b> <sup>16</sup>
<b>Dependent variable</b>	
<i>AUDITFEES</i>	Natural logarithm of total audit fees
<b>Variables of Interest</b>	
<i>GENDIV_AP</i>	Dummy variable equal to 1 if at least one audit partner is female
<i>IFRS</i>	Dummy variable equal to 1 after adoption of IFRS standards in 2005, and 0 otherwise
<b>Audit firms and audit partner variable</b>	
<i>BIG</i>	Ordinal variable coded 1 if one of the two auditors is Big, 2 if both auditors are Big, and 0 if the company is audited by two non-Big auditors.
<i>INDSPEC_AF</i>	Dummy variable equal to 1 if the audit firm is an industry specialist.
<i>INDSPEC_AP</i>	Dummy variable equal to 1 if the audit engagement partner is an industry specialist and 0 otherwise
<i>CAREER_AP</i>	Natural logarithm of the number of years since the auditor's registration date. We used mean career of both audit engagement partners.
<i>PORTFOLIO_AP</i>	Dummy variable coded 1 if for the audit partner the portfolio of audited assets was greater than the median and 0 otherwise
<i>PUBLSPEC_AP</i>	Dummy variable equal to 1 if the audit engagement partner is a public client specialist and 0 otherwise
<b>Other control variables</b>	
<i>SIZE</i>	Natural logarithm of the total assets
<i>REC&amp;INV</i>	Ratio of the sum of inventories and receivables to total assets
<i>FOR_ASSETS</i>	Ratio of foreign assets to total assets
<i>R&amp;D</i>	Ratio of R&D expenditures and total sales
<i>LEVERAGE</i>	Ratio of total financial debt to total assets
<i>LOSS</i>	Dummy variable equal to 1 if the audit firm experienced a loss in the previous year and 0 otherwise
<i>BETA</i>	Equity beta (Market risk)
<i>ROA</i>	Ratio of operating income to net assets
<i>TENURE</i>	Natural logarithm of the number of years of the auditor-client relationship. We use mean tenure of both auditors.
<i>NAUDITFEES</i>	Natural logarithm of total non-audit fees
<i>CRISIS</i>	Dummy variable equal to 1 for the years 2008 or 2009 and 0 otherwise
<i>INDUSTRY</i>	Dummy variable equal to 1 if the company belongs to the sector in question and 0 otherwise. The industry classification is based on the Industry Classification Benchmark (ICB) developed in January 2005 by Dow Jones and FTSE, and used by Euronext since 2006

<sup>16</sup> All the financial variables are winsorized at the 1% and 99% levels.

## **5 Empirical results**

### *5.1 Descriptive statistics*

Table 1.2 presents descriptive statistics for the variables used in our study (2,431 firm-year observations). In our sample, client firms paid (mean) €2,293,000 in audit fees. Audit fees varied from €13,000 to a maximum of €2.4 million, whereas client firms in our sample paid (median) €20,000 in audit fees, showing a wide disparity in audit fees paid. Similarly, mean (median) firm size, measured by total assets, is €4.920 (€0.223) billion, indicating skewed distribution.<sup>17</sup> In our sample, 18.31 percent of firms are audited by a female audit partner (*GENDIV\_AP*), giving evidence that the career progression in the audit profession is more difficult for women than for men (Hardies et al., 2015).<sup>18</sup> The mean (median) value of *REC&INV* is 26.18 (24.09) percent, whereas on average (mean), 19.03 percent of firms have *FOR\_ASSETS*. The mean (median) level of *LEVERAGE* is 23.17 (21.50) percent. 24.23 percent of firms reported *LOSS*. In our sample, the mean level of *BETA* is 0.662, showing that the equity price of listed companies tends to be less volatile than the stock market. The mean (median) *ROA* across the sample firms is 2.61 (3.54) percent. Sample firms spend on average 1.18% of their sales revenues on R&D. Client firms on average paid €196,000 in non-audit fees (*NAUDITFEES*), while 8.69 percent of firms in our sample are cross-listed on one of the U.S. markets (*CROSS*).

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<sup>17</sup> Because our sample is based on all firms listed in the CAC All Share Index, our measures of audit fee and firm size are highly skewed. We used the natural logarithm of their raw values to improve the relationship in multivariate analysis. To deal with extreme values, all continuous variables in our study are winsorized at the 1st and 99th percentiles.

<sup>18</sup> Studying the feminization of Big Four's partners in France, Lupu (2012) reveals difficulties for women to reach positions that confer highest responsibility and power within accounting firms. For the year 2009, she highlights that the rate of feminization of Big Four's partners in France varies between 10 and 18 percent. In Belgium, Hardies et al. (2015) also report that female only account for about 20 percent of all registered auditors (41 percent in the U.S.) and the number of female auditors who achieve partnership status is rather low (around 12 percent of audit partners versus about 20 percent in the U.S.).

**Table 1.2: Descriptive statistics for entire sample**

<b>Variable</b>	<b>Mean</b>	<b>Median</b>	<b>Standard Deviation</b>	<b>Minimum</b>	<b>Maximum</b>
<i>AUDITFEES (thousands of euros)</i>	2,293	320	5,507	13	52,400
<i>NAUDITFEES (thousands of euros)</i>	0,196	0	1,051	0	35,510
<i>GENDIV_AP</i>	18.31%	0	38.68%	0	1
<i>SIZE (millions of euros)</i>	4,920	223	16,993	1.124	240,559
<i>REC&amp;INV</i>	26.18%	24.09%	16.26%	0.19%	75.38%
<i>FOR_ASSETS</i>	19.03%	4.42%	25.65%	0	92.10%
<i>R&amp;D</i>	1.18%	0	4.22%	0	26.77%
<i>LEVERAGE</i>	23.17%	21.50%	16.70%	0	73.87%
<i>LOSS</i>	24.23%	0	42.85%	0	1
<i>BETA</i>	0.662	0.622	0.292	0.131	1.515
<i>ROA</i>	2.61%	3.54%	7.17%	-30.10%	36.70%
<i>BIG</i>	0.785	1	0.695	0	2
<i>CROSS</i>	8.69%	0	28.17%	0	1
<i>TENURE (number of years)</i>	7.161	6	5.379	0	37.073
<i>INDSPEC_AF</i>	22.28%	0	30.70%	0	1
<i>INDSPEC_AP</i>	5.34%	0	19.46%	0	1
<i>CAREER_AP (number of years)</i>	16	17	6.570	1	37.5
<i>PORTFOLIO_AP</i>	50.44%	1	50.01%	0	1
<i>PUBLSPEC_AP</i>	83.90%	1	36.75%	0	1

This table provides descriptive statistics for audit fees, gender-diverse engagement partners, and all other variables for our sample of French companies included in the CAC All-share index. The sample includes unbalanced panel data for 371 French firms from 2002 to 2010. All variables are as defined in Table 1.1.

Client firms in our sample are on average audited by less than one BIG auditor (0.78), and have one *BIG* auditor (median). The mean (median) *TENURE* of audit firms is 7.16 (6) years, with a maximum 37 years. Similarly, mean and median *CAREER\_AP* for the engagement partner is 16 (17) years. On average, 22.28 percent of our sample firms are audited by industry specialist audit firms (*INDSPEC\_AF*), whereas only 5.34 percent of audit engagement partners are industry specialists (*INDSPEC\_AP*). Around half of engagement partners have a big *PORTFOLIO\_AP* (50.54 percent), whereas the majority of engagement partners (83.90 percent) have audited more than one firm (*PUBLSPEC\_AP*).

## *5.2 Univariate analysis*

In Table 1.3, we classified our sample into two sub-groups, i.e., firms audited by gender-diverse audit partners (n = 447) and firms audited by two male joint audit partners (n = 1984), and we compare the mean values of all variables for both sub-groups. On average, the results show that client firms audited by gender-diverse audit partners are smaller in *SIZE* (total assets), have more systematic risk (*BETA*) and face greater financial difficulty (*LOSS*, *ROA*) than firms audited by two male joint audit partners. Similarly, client firms that spend more on research and development (*R&D*) and hire Big auditors (*BIG*) and industry specialist audit firms (*INDSPEC\_AF*) are more likely to be audited by gender-diverse audit partners. By contrast, we find that clients of two male joint audit partners have on average more foreign assets (*FOR\_ASSETS*), more inherent risk (*REC&INV*), are cross-listed (*CROSS*) and require more non-audit services (*NAUDITFEE*). For firms audited by both female and male audit partners, their respective audit firms are more likely to be industry specialists (*INDSPEC\_AF*). With regard to auditors' attributes, we find that auditors belonging to gender-diverse audit partners are less likely to be more experienced (*CAREER\_AP*) and have a smaller portfolio of audited assets (*PORTFOLIO\_AP*).

**Table 1.3: Mean difference between audit clients of male-female audit partners and male-male audit partners for entire and matched sample**

Variable	Entire sample		t-test	PSM sample		t-test
	Firms audited by gender-diverse audit partners (n = 447)	Firms audited by two male audit partners (n = 1,984)		Treatment group (n = 435)	Control Group (n = 435)	
<i>AUDITFEES (thousands of euros)<sup>a</sup></i>	2,036	2,397	1.013	1,919	1,769	0.497
<i>SIZE (millions of euros)<sup>a</sup></i>	4,874	5,548	1.509	4,017	4,381	0.941
<i>REC&amp;INV</i>	24.79%	26.41%	1.987**	25.49%	26.14%	0.610
<i>FOR_ASSETS</i>	18.88%	19.46%	0.455	18.72%	16.96%	1.083
<i>LEVERAGE</i>	21.73%	23.43%	2.064**	22.25%	22.60%	0.322
<i>LOSS</i>	25.44%	24.29%	0.546	24.36%	28.51%	1.383
<i>BETA</i>	0.707	0.682	1.768*	0.706	0.690	0.891
<i>ROA</i>	2.61%	2.73%	0.330	3.01%	2.29%	1.422
<i>R&amp;D</i>	1.85%	1.07%	3.643***	1.53%	1.39%	0.465
<i>NAUDITFEES (thousands of euros)<sup>a</sup></i>	97	219	1.872*	98	108	0.945
<i>BIG</i>	0.99	0.93	1.741*	0.98	0.96	0.478
<i>CROSS</i>	7.69%	9.32%	1.167	7.35%	5.74%	0.961
<i>TENURE (number of years)<sup>a</sup></i>	7.688	7.176	1.473	7.619	7.337	0.777
<i>INDSPEC_AF</i>	41.74%	37.27%	1.979**	42.06%	41.61%	0.145
<i>CAREER_AP (number of years)<sup>a</sup></i>	15	17	5.823***	14	15	0.209
<i>INDSPEC_AP</i>	6.75%	8.14%	1.106	7.58%	6.89%	0.396
<i>PORTFOLIO_AP</i>	46.74%	51.76%	2.059**	48.27%	44.14%	1.223
<i>PUBLSPEC_AP</i>	84.41%	83.71%	0.394	84.59%	84.61%	0.001

This table provides results of the mean difference test to highlight structural differences between firm-years with gender-diverse audit partners and firm-years with two male audit partners and other variables from 2002 to 2010. PSM procedure is used to mitigate these structural differences between the two sub-samples (Rosenbaum & Rubin, 1983). The PSM procedure yields a total sample of 870 matched observations: 435 firm-years with gender-diverse audit partners (treatment group) and 435 firm-years with two male audit partners (comparison group). All variables are as defined in Table 1.1. \*, \*\*, \*\*\* significance at the .10, .05 and .01 levels, respectively. All variables are as defined in Table 1.1. All the financial variables are winsorized at the 1% and 99% levels. <sup>a</sup> t-tests are based on natural logarithm transformed values.

### *5.3 Propensity score matching*

A direct comparison of the audit fees paid by client firms with or without a female audit partner within the joint auditor pair is not very instructive, because of the overlaps between the gender of audit partner and the other control variables. We use propensity score matching (hereafter, PSM) approach in an attempt to produce unbiased estimates of the treatment effect (i.e., gender-diverse audit partners). Meaningfully, the PSM technique is able to control for differences in client characteristics of gender-diverse audit partners and two male joint audit partners (Rosenbaum & Rubin, 1983). First, to generate propensity scores, we used a logit model where the dependent variable, if a firm is audited by gender-diverse audit partners. As in Hardies et al. (2015), the likelihood that a client firm has a female audit partner is then estimated based on all control variables from Equation (1.1). After generating the propensity scores, we match firms, without replacement, that are audited by gender-diverse audit partners (treatment) with firms audited by two male joint audit partners (control) that have propensity scores within a 1 percent caliper distance. The control firms are firms audited by two male audit partners that have the nearest (the closest predicted propensity score) characteristics to firms audited by gender-diverse audit partners. Using this procedure, we find a matched sample of 870 cases: 435 treatment cases (gender-diverse audit partners) and 435 comparison cases (two male joint audit partners).<sup>19</sup>

Results in Table 1.3 show that post-match pairwise differences become statistically non-significant for all control variables considered in our study. These results suggest that our matching is effective (Hardies et al., 2015). It is, however, worthy to note that, when we compare treatment group (firms audited by gender-diverse audit partners) to similar control group (firms audited by two male audit partners) via PSM approach, we find no significant difference in their respective audit fees. These results indicate that firms audited by gender-

diverse audit partners do not exhibit intrinsically different audit fees regardless of the other characteristics of client firms and the individual differences between female and male audit partners (i.e., *INDSPEC\_AP*, *CAREER\_AP*, *PORTFOLIO\_AP*, and *PUBSPEC\_AP*). In contrast with Hardies et al. (2015), we do not find significant post-match differences in the individual audit partners' specific characteristics between treatment and control groups. Using PSM sample to regress audit fees on variables of interest should then be more effective in separating the effects of individual audit partners' specific characteristics on audit fees from the one of the gender of audit partner.<sup>20</sup>

#### *5.4 Difference in the audit fees within gender-diverse auditor pairs*

In Table 1.4, we focus on a PSM sample of firms audited by both male and female audit partners in order to compare the audit fee paid to each specific auditor within the joint auditor pair composition. It appears clearly that, for these firms, the compensation paid to the auditing firms depends on the gender of the signing audit partner, to the benefit of female audit partners. The difference in the compensation paid to male and female audit partners is observable throughout the period considered in our study, both before and after IFRS implementation. However, it should be noted that the difference in the compensation between male and female is considerably greater in magnitude after IFRS implementation than before. This result points to a positive association between IFRS adoption and audit fee premium earned by gender-diverse audit partners.

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<sup>19</sup> As Hardies et al. (2015), we also match firms with replacement and results are almost unchanged.

<sup>20</sup> A second matching is also performed by including in the logit regression only client characteristics. Results are qualitatively unaffected.



**Table 1.4: Mean difference between female and male audit fee for firms audited by gender-diverse audit partners before and after IFRS**

	<b>Audit fee paid to female audit partner</b>	<b>Audit fee paid to male audit partner</b>	<b>t-test<sup>a</sup></b>
Total period (n = 435)	1126	805	3.937***
Before IFRS (n = 105)	1168	874	1.799*
After IFRS (n = 330)	1113	784	3.497***

\*, \*\*, \*\*\* significance at the .10, .05 and .01 levels, respectively

<sup>a</sup> t-tests are based on natural logarithm transformed values

### *5.5 Test of hypothesis H1*

Before the regression analysis, we determined pairwise correlation coefficients among the variables used in our analysis. Based on the PSM sample, Table 1.5 shows that all the control variables used in our study except *GENDIV\_AP* are correlated with *AUDITFEES*. There is a strong correlation between *AUDITFEES*, on the one hand, and *SIZE*, *NAUDITFEES*, *PORTFOLIO\_AP*, on the other. The correlation between our test variable *GENDIV\_AP* and the other independent variables is not excessively high. Similarly, the variance inflation factor (VIF) is well below the top limit of 3, showing that there is no serious problem of multicollinearity in our data.

Based on the PSM sample, we examine whether the combination of a female and a male audit engagement partner in the joint auditor pair composition influences the audit fee in comparison with a pair of male engagement partners. Overall, results presented in Table 1.6 show that Model 1 has explanatory power (adjusted  $R^2$ ) of about 0.89 percent and is thus comparable with prior studies (Audousset-Coulier, 2015). The results given in Model 1 also show that the coefficient of our test variable (i.e., *GENDIV\_AP*) is positive and significant ( $\beta_1 = 0.104$ ,  $z = 2.79$ ,  $p < 0.005$ ), indicating the presence of an audit fee premium for gender-diverse audit partners. These results are consistent with our expectations and support H1. Accordingly, having a woman as a joint audit engagement partner increases the audit fee by about 11<sup>21</sup> percent (€252,000 on average).<sup>22</sup> These results points to the argument that better cooperation between gender-diverse engagement partners can then enhance collaboration with regard to audit planning and risk assessment. Thus, gender diverse audit partners charge higher audit fees.

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<sup>21</sup> Gender-diverse auditor pair fee premium is estimated by  $e^{(\text{coefficient of the variable GENDIV\_AP}) - 1}$

<sup>22</sup> Average fee value of gender-diverse auditor pair fee premium = gender-diverse auditor pair fee premium (%) as computed above)  $\times$  mean audit fee in thousands.

**Table 1.5: Pairwise correlation matrix**

	1	2	3	4	5	6	7	8	9	10	11	VIF
1. AUDITFEES	1.000											
2. GENDIV_AP	-0.039	1.000										1.04
3. IFRS	0.056*	0.076*	1.000									1.29
4. SIZE	0.914*	-0.055*	0.059*	1.000								2.89
5. REC&INV	-0.243*	-0.012	-0.104*	-0.331*	1.000							1.31
6. FOR_ASSETS	0.511*	-0.034	-0.004	0.417*	-0.108*	1.000						1.36
7. R&D	0.119*	0.063*	0.002	0.090*	-0.055*	0.114*	1.000					1.10
8. LEVERAGE	0.235*	-0.046	-0.038	0.295*	-0.258*	0.067*	-0.085*	1.000				1.32
9. LOSS	-0.161*	-0.002	-0.093*	-0.244*	0.015	-0.046*	0.056*	0.041	1.000			1.68
10. BETA	0.429*	0.033	-0.001	0.364*	-0.022	0.301*	0.156*	-0.028	0.081*	1.000		1.41
11. ROA	0.191*	0.002	0.096*	0.280*	0.021	0.109*	-0.010	0.005	-0.586*	-0.042	1.000	1.65
12. CROSS	0.408*	-0.048*	-0.061*	0.368*	-0.045	0.177*	0.156*	0.054*	0.028	0.279*	0.028	1.31
13. TENURE	0.255*	-0.014	0.119*	0.261*	-0.145*	0.228*	0.084*	0.082*	-0.004	0.175*	0.024	1.13
14. NAUDITFEES	0.691*	-0.055*	-0.158*	0.630*	-0.127*	0.440*	0.120*	0.086*	-0.110*	0.343*	0.118*	2.12
15. BIG	0.546*	-0.001	0.008	0.513*	-0.217*	0.303*	0.139*	0.052*	-0.039	0.337*	0.101*	1.90
16. CAREER_AP	0.168*	-0.147*	-0.001	0.168*	-0.013	0.128*	0.003	0.083*	-0.095*	0.043	0.096*	1.12
17. INDSPEC_AF	0.393*	0.004	0.026	0.366*	-0.152*	0.193*	-0.019	0.034	-0.029	0.184*	0.038	1.42
18. INDSPEC_AP	0.534*	-0.027	-0.027	0.493*	-0.198*	0.309*	0.050*	0.126*	-0.059*	0.283*	0.070*	1.54
19. PORTFOLIO_AP	0.688*	-0.065*	0.095*	0.605*	-0.296*	0.336*	0.094*	0.228*	-0.178*	0.261*	0.214*	2.38
20. PUBLSPEC_AP	0.254*	-0.024	0.032	0.220*	-0.076*	0.156*	0.066*	-0.013	-0.009	0.090*	0.030	1.21
21. CRISIS	0.027	0.040	0.388*	0.035	-0.070*	0.004	0.005	0.021	0.044	0.040	-0.013	1.19

**Table 1.5: Continued**

	12	13	14	15	16	17	18	19	20
12. <i>CROSS</i>	1.000								
13. <i>TENURE</i>	0.105*	1.000							
14. <i>NAUDITFEES</i>	0.298*	0.165*	1.000						
15. <i>BIG</i>	0.209*	0.200*	0.441*	1.000					
16. <i>CAREER_AP</i>	0.114*	0.096*	0.109*	-0.018	1.000				
17. <i>INDSPEC_AF</i>	0.199*	0.117*	0.329*	0.483*	0.008	1.000			
18. <i>INDSPEC_AP</i>	0.336*	0.126*	0.422*	0.315*	0.116*	0.346*	1.000		
19. <i>PORTFOLIO_AP</i>	0.254*	0.263*	0.460*	0.436*	0.175*	0.264*	0.287*	1.000	
20. <i>PUBLSPEC_AP</i>	0.090*	0.106*	0.192*	0.318*	0.088*	0.205*	0.100*	0.302*	1.000
21. <i>CRISIS</i>	-0.043	0.090*	-0.087*	0.084*	-0.028	0.011	-0.006	0.048*	0.010

This table reports pairwise correlation matrix and VIF scores of the variables used in our study. All variables are as defined in Table 1.1.

\* Significance at the .01 level

**Table 1.6: Regression of audit fee on gender-diverse audit partners**

Variables	Predicted sign	Model 1 (n = 870)			Model 2 (n = 870)			Model 3 (n = 870)		
		Coef.	z.stat	p-value	Coef.	z.stat	p-value	Coef.	z.stat	p-value
<i>GENDIV_AP</i>	+	0.104***	2.79	0.005	0.099**	2.50	0.013	0.148**	2.23	0.025
<i>IFRS</i>	+				0.194***	5.15	0.000	0.225***	4.46	0.000
<i>GENDIV_AP</i> × <i>IFRS</i>	+							-0.063	-0.92	0.360
<i>SIZE</i>	+	0.492***	24.63	0.000	0.458***	22.95	0.000	0.458***	22.93	0.000
<i>REC&amp;INV</i>	+	0.270*	1.68	0.092	0.286*	1.67	0.094	0.278	1.63	0.104
<i>FOR_ASSETS</i>	+	0.696***	6.08	0.000	0.687***	5.80	0.000	0.681***	5.75	0.000
<i>R&amp;D</i>	+	0.391	0.67	0.504	0.476	0.83	0.407	0.428	0.74	0.458
<i>LEVERAGE</i>	+	-0.052	-0.37	0.708	-0.086	-0.64	0.524	-0.076	-0.56	0.576
<i>LOSS</i>	+	0.032	0.76	0.445	0.043	1.08	0.280	0.045	1.12	0.262
<i>BETA</i>	+	0.152*	1.96	0.050	0.136*	1.78	0.075	0.136*	1.78	0.075
<i>ROA</i>	-	-0.993***	-3.69	0.000	-0.869***	-3.17	0.002	-0.856***	-3.12	0.002
<i>CROSS</i>	+	0.316**	2.46	0.014	0.385***	2.94	0.003	0.392***	2.98	0.003
<i>TENURE</i>	+	0.052*	1.71	0.088	-0.001	-0.01	0.994	0.002	0.04	0.969
<i>NAUDITFEES</i>	+	0.033***	3.50	0.000	0.043***	4.56	0.000	0.044***	4.62	0.000
<i>BIG</i>	+	0.134***	2.97	0.003	0.136***	2.81	0.005	0.133***	2.75	0.006
<i>CAREER_AP</i>	+	0.019	0.49	0.621	0.078**	2.05	0.041	0.079**	2.06	0.039
<i>INDSPEC_AF</i>	+	-0.021	-0.49	0.624	0.022	0.47	0.637	0.023	0.50	0.616
<i>INDSPEC_AP</i>	+	0.290***	3.26	0.001	0.203**	2.30	0.021	0.202**	2.30	0.022
<i>PORTFOLIO_AP</i>	+	0.155***	2.98	0.003	0.142***	2.66	0.008	0.140***	2.62	0.009
<i>PUBLSPEC_AP</i>	+	0.167***	2.64	0.008	0.128**	2.04	0.041	0.129**	2.05	0.040
<i>CRISIS</i>	+	-0.028	-0.97	0.333	-0.059**	-1.99	0.046	-0.060**	-2.03	0.043
<i>INTERCEPT</i>	?	2.512***	10.98	0.000	2.564***	11.88	0.000	2.532***	11.57	0.000
<i>INDUSTRY_RE</i>	?		Yes			Yes			Yes	
Wald chi <sup>2</sup> (Prob > chi <sup>2</sup> )		2784.22 (p = 0.000)			2286.50 (p = 0.000)			2282.82 (p = 0.000)		
Overall R <sup>2</sup>		88.88%			88.41%			84.41%		
Joint test: <i>GENDIV_AP</i> + ( <i>GENDIV_AP</i> × <i>IFRS</i> )								0.085**	1.99	0.046
Joint test: <i>IFRS</i> + ( <i>GENDIV_AP</i> × <i>IFRS</i> )								0.162***	3.15	0.002

This table provides results of the panel data regressions of audit fee on gender-diverse audit partners and the IFRS adoption using propensity score matched sample. All variables are as defined in Table 1.1. \*, \*\*, \*\*\* significance at the .10, .05 and .01 levels, respectively

Ittonen and Peni (2012) find no statistically significant impact of gender-diverse audit partners on audit fees. One possible reason for such results might arise from differences in regulations. Joint audits are not mandatory for firms listed in Nordic countries (Denmark, Sweden and Finland). Furthermore, regulation does not require balanced division of audit tasks between engagement partners; instead, it is decided by the client firms (Thinggaard & Kiertzner, 2008). These results may also stem from the fact that client firms assign most of the audit tasks to male auditors. In general, our results are consistent with prior research on the female audit fee premium and extend prior evidence (Hardies et al., 2015; Ittonen & Peni, 2012) by showing that the presence of a female audit partner as a joint audit engagement partner with a male audit partner results in an audit fee premium.

We find a significant relationship between most of the control variables and the dependent variable, (i.e., audit fee). Overall, these results are consistent with the literature on audit fees (Hay, 2013; Hay et al., 2006). We observe a positive and significant association for client firm-specific variables. Specifically, client firm size (*SIZE*), inherent risk (*REC&INV*) and complexity (*FOR\_ASSETS*) are related to audit fees, implying that engagement partners charge higher audit fees on the basis of client firm size, inherent risk and the complexity of their operations (Audousset-Coulier, 2015). In line with our expectations, we find that client firm profitability (*ROA*) is negatively associated with audit fees. Consistently with Choi et al. (2009), we find that cross-listing (*CROSS*) of client firms increases audit fees, showing that audit firms charge a fee premium for client firms that are cross-listed in strong legal regime countries. Similarly, we find that market risk as measured by beta is positively and significantly associated with audit fees. As far as audit firm-specific variables are concerned, our results show that the use of *BIG* audit firms is positively associated with

audit fees. This result indicates that BIG audit firms charge an audit fee premium for providing higher audit quality. Moreover, the longer the period of the auditor-client relationship (*TENURE*), the higher are the audit fees. In accordance with Firth (2002), we find that non-audit services (*NAUDFEES*) increase audit fees. Finally, we find that industry specialist engagement partners (*INDSPEC\_AP*) earn an audit fee premium, whereas, national level industry specialization of audit firm (*INDSPEC\_AF*) is insignificant. These results are comparable to the findings of Goodwin and Wu (2014). Similarly, we find that public specialization (*PUBLSPEC\_AP*) of engagement partners also increases audit fees. Taken together, these findings support the view that industry specialist and public specialist engagement partners improve perceived audit quality and command higher audit fees (Zerni, 2012). In line with our expectations, our results show that the engagement partner's total client portfolio (*PORTFOLIO\_AP*) is positively associated with audit fees. Contrary to the findings of Xu et al. (2013), the coefficient of *CRISIS* is negative but insignificant, indicating that the financial crisis of 2008 and 2009 has had no impact on audit fees. However, the relationship becomes negative and significant in Model 2 and Model 3. As French listed firms appoint audit firms for a period of six years, it is possible that audit firms have a better understanding of their clients, which in turn may not have affected audit risk or required audit effort during the financial crisis. The results of Model 2 in Table 1.6 are consistent with IFRS fee premium studies (De George et al., 2013; Kim et al., 2012). We report a positive impact of *IFRS* adoption on audit fees, suggesting that *IFRS* adoption leads to increased audit task complexity, which in turn causes the audit fee to increase.

## *5.6 Test of hypothesis H2*

In a more complex situation, female auditors outperform male auditors with regard to information processing effectiveness (O'Donnell & Johnson, 2001).

Accordingly, our hypothesis 2 states that the impact of *GENDIV\_AP* on audit fees should be greater after *IFRS* adoption than before. To measure the marginal effect of *GENDIV\_AP* on *AUDITFEES* in the post-*IFRS* period, we perform the joint test of the sum of the coefficients on *GENDIV\_AP* ( $\beta_1$ ) and *GENDIV\_AP*  $\times$  *IFRS* ( $\beta_3$ ). The results of Model 3 in Table 1.6 show that the joint coefficient of *GENDIV\_AP* and *GENDIV\_AP*  $\times$  *IFRS* is positive and significant at the 5% level ( $\beta_1 + \beta_3 = 0.085$ ,  $z = 1.99$ ,  $p = 0.046$ ). This result suggests that the positive relation between *GENDIV\_AP* and *AUDITFEES* is greater after the introduction of *IFRS*. Consistently with hypothesis H2, gender-diverse audit partners seem to outperform two male joint audit partners with regard to the compensation paid by client firms in more complex situations.

At this stage of analysis, it is also interesting to ascertain whether companies audited by gender-diverse audit partners really face more complexity from the introduction of *IFRS* than other companies. Accordingly, we perform a second joint test of the sum of the coefficients on *IFRS* ( $\beta_2$ ) and *GENDIV\_AP*  $\times$  *IFRS* ( $\beta_3$ ) to reflect the change of the impact of *GENDIV\_AP* on *AUDITFEES* between pre- and post-*IFRS* implementation. The result of Model 3 in Table 1.6 shows that this joint coefficient is positive and significant at the 1% level ( $\beta_2 + \beta_3 = 0.162$ ,  $z = 3.15$ ,  $p = 0.002$ ). This finding suggests that task complexity brought about by *IFRS* implementation is associated with an increase in the audit fees reported by firms audited by gender-diverse audit partners.

To better understand the impact of *IFRS* adoption on audit fee premium earned by gender-diverse audit partners, we divide our PSM sample into two sub-groups (i.e., pre-*IFRS* and post-*IFRS*) and re-estimate the regression Equation (1.1) for both sub-groups separately. The results in Table 1.7 show that the coefficient of *GENDIV\_AP* is not significant in the pre-*IFRS* adoption period. After *IFRS* adoption the coefficient of



*GENDIV\_AP* becomes positive and significant at the 5% level ( $\beta_1 = 0.070$ ,  $z = 1.98$ ,  $p = 0.045$ ). These results support hypothesis H2, which proposes that adoption of new accounting standards has a positive impact on audit fees charged by gender-diverse audit partners.

**Table 1.7: Regression of audit fee on gender-diverse audit partners before and after IFRS**

Variables	Predicted sign	Before IFRS (n = 210)			After IFRS (n = 660)		
		Coef.	z.stat	p-value	Coef.	z.stat	p-value
<i>GENDIV_AP</i>	+	0.021	0.18	0.860	0.070**	1.98	0.045
<i>SIZE</i>	+	0.534***	11.11	0.000	0.493***	21.81	0.000
<i>REC&amp;INV</i>	+	0.372	1.23	0.219	0.288	1.57	0.117
<i>FOR_ASSETS</i>	+	0.891***	3.63	0.000	0.780***	6.31	0.000
<i>R&amp;D</i>	+	0.908	0.83	0.408	0.770	0.99	0.321
<i>LEVERAGE</i>	+	-0.177	-0.56	0.573	-0.032	-0.21	0.836
<i>LOSS</i>	+	-0.036	-0.44	0.662	0.009	0.21	0.833
<i>BETA</i>	+	0.273	1.54	0.124	0.058	0.69	0.491
<i>ROA</i>	-	-1.324**	-2.44	0.015	-0.947***	-3.07	0.002
<i>CROSS</i>	+	-0.015	-0.06	0.951	0.430***	2.94	0.003
<i>TENURE</i>	+	0.020	0.25	0.805	-0.017	-0.50	0.618
<i>NAUDITFEES</i>	+	0.019	0.82	0.412	0.030***	2.79	0.005
<i>BIG</i>	+	0.114	1.02	0.307	0.174***	3.51	0.000
<i>CAREER_AP</i>	+	-0.030	-0.32	0.747	0.045	1.07	0.286
<i>INDSPEC_AF</i>	+	0.137	1.37	0.172	-0.025	-0.51	0.607
<i>INDSPEC_AP</i>	+	0.386**	2.12	0.034	0.235**	2.41	0.016
<i>PORTFOLIO_AP</i>	+	0.093	0.57	0.570	0.091*	1.67	0.094
<i>PUBLSPEC_AP</i>	+	-0.102	-0.60	0.548	0.142**	2.16	0.030
<i>CRISIS</i>	+		Omitted		-0.046*	-1.79	0.073
<i>INTERCEPT</i>	?	2.507***	5.48	0.000	2.778***	10.77	0.000
<i>INDUSTRY_RE</i>	?		Yes			Yes	
Wald chi <sup>2</sup> (Prob > chi <sup>2</sup> )			2094.95	(p = 0.000)		2088.45	(p = 0.000)
Overall R <sup>2</sup>			89.26%			89.24%	

This table provides results of the panel data regressions of audit fee on gender-diverse audit partners before and after the IFRS adoption using propensity score matched sample. All variables are as defined in Table 1.1. \*, \*\*, \*\*\* significance at the .10, .05 and .01 levels, respectively

### *5.7 Supplementary analyses: does audit firm size matter?*

The choice of audit firm is more complex in a joint audit setting, in contrast to countries where only a single auditor is required (Francis et al., 2009). Client firms in joint audits may variously appoint two Big 4 audit firms, one Big 4 and one non-Big 4 audit firm, or two non-big audit firms. Considered as a primary driver for audit fees (e.g., Audousset-Coulier, 2015; Gonthier-Besacier & Schatt, 2007), audit firm size may also alter the impact of the presence of a female audit partner in the joint auditor pair composition on audit fees. To test these interactive effects, we recalculate our previous estimations by subdividing our sample according to the number of Big 4 audit firms in the auditor pair composition. About 22.53% (196/870) of our PSM sample do not have a Big 4 auditor (*ZEROBIG*), 56.90% (495/870) have only one Big 4 auditor (*ONEBIG*), and 20.57% (179/870) have two Big 4 auditors (*TWOBIG*). Overall, our results regarding the impact of the presence of a female audit partner within the joint auditor pair on audit fees are dependent, but in a different way, on the size of audit firms in the auditor pair composition.

For the sub-samples *ZEROBIG* and *TWOBIG*, the results in Table 1.8 show that the combination of a female and a male audit engagement partner in the joint auditor pair composition (*GENDIV\_AP*) impacts the audit fee positively and significantly (at the 1% and 5% levels, respectively) compared to a pair of male engagement partners. No significance, however, is observed for the *ONEBIG* subsample. These results suggest that gender-diverse audit partners outperform two male joint audit partners in terms of audit fee premium mainly when they are appointed by two equally competitive audit firms (i.e., two non-Big 4 or two Big 4 auditors). Gonthier-Besacier and Schatt (2007) find that audit fees are reduced to a greater extent by client firms when they mix Big 4 audit firm with a non-Big 4 audit firm. The authors attribute this result to the

unbalanced expertise and risk sharing between audit firms. The abnormal audit fees that can be potentially attributed to gender-diverse audit partners may be then counterbalanced by the difference in expertise and risk sharing between Big 4 and non-Big 4 audit firms. Indeed, small audit firms are less likely to split the audit task equally (Audoussert-Coulier, 2015), thus reducing the relevance of the engagement partners.

With regard to audit task complexity in the context of IFRS adoption, results of the joint tests in Table 1.9 show, for the *ZEROBIG* and the *TWOBIG* subsamples, that the marginal effect of *GENDIV\_AP* is greater on *AUDITFEES* after the introduction of IFRS. For the subsample *ONEBIG*, the marginal effect ( $GENDIV\_AP + GENDIV\_AP \times IFRS$ ) is also positive, albeit non-significant. These results make it clear that gender-diverse auditor pairs may outperform two male joint auditor pairs in more complex situations, particularly when client firms select two audit firms with seemingly the same competition level. For each subsample, we also test whether client firms audited by gender-diverse audit partners encounter more complexity from the introduction of IFRS than other client firms. For all subsamples, we confirm our previous finding that the joint coefficient ( $IFRS + GENDIV\_AP \times IFRS$ ) is positive and significant.

**Table 1.8: Regression of audit fee on gender-diverse audit partners according to audit firm size**

Variables	Predicted sign	Model 1: ZEROBIG (n = 196)			Model 2: ONEBIG (n = 495)			Model 3: TWOBIG (n = 179)					
		Coef.	z.stat	p-value	Coef.	z.stat	p-value	Coef.	z.stat	p-value			
<i>GENDIV_AP</i>	+	0.290***	3.17	0.002	0.060	1.20	0.232	0.135**	1.99	0.046			
<i>IFRS</i>	+	0.209**	2.36	0.018	0.160***	3.32	0.001	0.073	0.96	0.337			
<i>SIZE</i>	+	0.317***	6.62	0.000	0.483***	18.13	0.000	0.559***	11.69	0.000			
<i>REC&amp;INV</i>	+	-0.502	-1.60	0.110	0.924***	4.33	0.000	-0.495	-0.92	0.356			
<i>FOR_ASSETS</i>	+	0.790**	2.15	0.032	0.794***	5.51	0.000	0.843***	3.97	0.000			
<i>R&amp;D</i>	+	-0.513	-0.38	0.705	0.916	1.25	0.210	0.623	0.37	0.708			
<i>LEVERAGE</i>	+	-0.232	-0.72	0.473	-0.029	-0.14	0.886	0.665**	2.13	0.033			
<i>LOSS</i>	+	-0.079	-0.98	0.325	0.069	1.25	0.210	0.055	0.67	0.500			
<i>BETA</i>	+	0.271	1.50	0.133	0.086	0.87	0.383	0.052	0.31	0.758			
<i>ROA</i>	-	-0.316	-0.65	0.514	-1.252***	-3.46	0.001	-0.201	-0.27	0.791			
<i>CROSS</i>	+	0.332	0.53	0.594	0.357*	1.88	0.060	0.179	0.73	0.463			
<i>TENURE</i>	+	-0.009	-0.13	0.898	0.019	0.45	0.655	-0.089	-1.21	0.226			
<i>NAUDITFEES</i>	+	0.013	0.35	0.724	0.043***	3.68	0.000	0.007	0.39	0.698			
<i>CAREER_AP</i>	+	-0.093	-1.09	0.274	0.125**	2.29	0.022	-0.028	-0.40	0.692			
<i>INDSPEC_AF</i>	+	-0.182	-1.17	0.241	-0.132**	-2.48	0.013	0.178**	1.97	0.049			
<i>INDSPEC_AP</i>	+	0.142*	1.72	0.062	0.258*	1.95	0.052	0.199*	1.80	0.073			
<i>PORTFOLIO_AP</i>	+	0.398***	3.41	0.001	0.131*	1.93	0.053	-0.415***	-2.82	0.005			
<i>PUBLSPEC_AP</i>	+	0.137	1.29	0.199	0.184*	1.82	0.069	0.073	0.38	0.706			
<i>CRISIS</i>	+	-0.128**	-2.18	0.029	-0.048	-1.23	0.219	0.035	0.65	0.513			
<i>INTERCEPT</i>	?	3.553***	7.38	0.000	2.115***	6.04	0.000	3.148***	5.77	0.000			
<i>INDUSTRY_RE</i>	?		Yes			Yes			Yes				
Wald chi <sup>2</sup> (Prob > chi <sup>2</sup> )			718.73 (p = 0.000)				1271.94 (p = 0.000)				977.71 (p = 0.000)		
Overall R <sup>2</sup>			68.20%				87.64%				92.86%		

This table provides results of separate regressions of audit fee on gender-diverse audit partners depending on the number of Big audit firms in joint auditor pair composition using propensity score matched sample. All variables are as defined in Table 1.1. \*, \*\*, \*\*\* significance at the .10, .05 and .01 levels, respectively

**Table 1.9: Regression of audit fee on gender-diverse audit partners and IFRS according to audit firm size**

Variables	Predicted sign	Model 1: ZEROBIG (n = 196)			Model 2: ONEBIG (n = 495)			Model 3: TWOBIG (n = 179)					
		Coef.	z.stat	p-value	Coef.	z.stat	p-value	Coef.	z.stat	p-value			
<i>GENDIV_AP</i>	+	0.187	1.04	0.298	0.065	0.82	0.414	-0.060	-0.48	0.631			
<i>IFRS</i>	+	0.176*	1.72	0.085	0.163***	2.60	0.009	-0.066	-0.62	0.535			
<i>GENDIV_AP</i> × <i>IFRS</i>	+	0.117	0.67	0.502	-0.007	-0.08	0.936	0.231*	1.87	0.061			
<i>SIZE</i>	+	0.318***	6.61	0.000	0.483***	18.08	0.000	0.555***	11.51	0.000			
<i>REC&amp;INV</i>	+	-0.483	-1.53	0.126	0.923***	4.31	0.000	-0.500	-0.93	0.353			
<i>FOR_ASSETS</i>	+	0.812**	2.19	0.028	0.794***	5.49	0.000	0.803***	3.77	0.000			
<i>R&amp;D</i>	+	-0.473	-0.35	0.728	0.909	1.24	0.216	0.636	0.38	0.707			
<i>LEVERAGE</i>	+	-0.245	-0.75	0.451	-0.024	-0.14	0.891	0.627**	2.03	0.042			
<i>LOSS</i>	+	-0.082	-1.01	0.311	0.069	1.25	0.211	0.046	0.57	0.569			
<i>BETA</i>	+	0.281	1.55	0.122	0.085	0.86	0.390	0.053	0.32	0.748			
<i>ROA</i>	-	-0.382	-0.77	0.439	-1.248***	-3.45	0.001	0.010	0.01	0.989			
<i>CROSS</i>	+	0.349	0.55	0.580	0.359*	1.88	0.060	0.195	0.79	0.431			
<i>TENURE</i>	+	-0.013	-0.18	0.858	0.020	0.46	0.649	-0.071	-0.95	0.342			
<i>NAUDITFEES</i>	+	0.008	0.21	0.836	0.043***	3.68	0.000	0.007	0.38	0.707			
<i>CAREER_AP</i>	+	-0.092	-1.08	0.280	0.125**	2.29	0.022	-0.042	-0.59	0.554			
<i>INDSPEC_AF</i>	+	-0.192	-1.23	0.219	-0.133**	-2.48	0.013	0.169*	1.88	0.060			
<i>INDSPEC_AP</i>	+	0.139*	1.93	0.053	0.259*	1.95	0.052	0.183*	1.66	0.096			
<i>PORTFOLIO_AP</i>	+	0.399***	3.42	0.001	0.131*	1.92	0.055	-0.408***	-2.81	0.005			
<i>PUBLSPEC_AP</i>	+	0.138	1.29	0.198	0.184*	1.81	0.070	0.037	0.19	0.848			
<i>CRISIS</i>	+	-0.124**	-2.10	0.036	-0.049	-1.23	0.219	0.041	0.78	0.433			
<i>INTERCEPT</i>	?	3.559***	7.36	0.000	2.115***	6.01	0.000	3.368***	6.02	0.000			
<i>INDUSTRY_RE</i>	?		Yes			Yes			Yes				
Wald chi <sup>2</sup> (Prob > chi <sup>2</sup> )			716.89 (p = 0.000)				1264.84 (p = 0.000)				990.95 (p = 0.000)		
Overall R <sup>2</sup>			68.28%				87.63%				92.76%		
Joint test: <i>GENDIV_AP</i> + ( <i>GENDIV_AP</i> × <i>IFRS</i> )		0.304***	3.24	0.001	0.058	1.05	0.295	0.171**	2.47	0.014			
Joint test: <i>IFRS</i> + ( <i>GENDIV_AP</i> × <i>IFRS</i> )		0.293*	1.92	0.055	0.156**	2.35	0.019	0.164*	1.85	0.064			

This table provides results of separate regressions of audit fee on gender-diverse audit partners and the IFRS adoption depending on the number of Big audit firms in joint auditor pair composition using propensity score matched sample. All variables are as defined in Table 1.1. \*, \*\*, \*\*\* significance at the .10, .05 and .01 levels, respectively

## **6 Summary and conclusion**

Motivated by recent studies on auditor gender differences suggesting that female auditors command an audit fee premium compared to male auditors, we contribute to the debate by presenting our empirical findings from the French audit regulatory environment. France's mandatory joint audit requirement means that a company's financial statements are jointly audited by two independent audit firms. In addition to controlling for the specific attributes of several well-known client firms and audit firms, we also control for the specific attributes of engagement partners that drive audit fees. We first use propensity score matching, which controls for characteristics of client firms audited by gender-diverse audit partners and those audited by two male joint audit partners. Specifically, we analyze whether the combination of a female and a male audit engagement partners influences the audit fee compared to a pair of male engagement partners. The empirical findings of our study show that the combination of female and male audit engagement partners results in an 11 % audit fee premium. Likewise, the presence of a female audit partner in a joint auditor pair leads to higher audit fees. Prior literature examines the impact of auditor gender on audit fees in countries where only one audit partner is required for audit engagement (Hardies et al., 2015; Ittonen & Peni, 2012). Our results extend the evidence to mandatory joint audit setting.

Furthermore, we examine the relationship between the gender of audit partner and audit fees in the context of the new accounting standards (i.e. IFRS). Consistently with the view that audit task complexity increases audit risk and audit fees, the existing literature suggests that IFRS adoption increases audit task complexity, audit effort and audit fees required for an audit engagement. Because female auditors are generally less overconfident and more risk averse, this in turn may increase the time spent on audit

planning and risk assessment. We hypothesize that in the IFRS post-adoption period, the presence of a female audit partner as a joint audit engagement partner increases the required audit effort for an audit engagement and leads to higher fees. The results of our study show that IFRS adoption has a significant impact on audit fees. Combination of a female and a male audit engagement partner commands significantly higher audit fees in the post-IFRS adoption period. These findings support our intuition that task complexity and greater audit effort in the IFRS post-adoption period has resulted in increased audit fees for male-female joint audit partners. Overall, we show that implementation of IFRS is positively associated with the audit fees charged by gender-diverse audit partners in the French joint audit setting. Alternatively, these findings suggest that gender-diverse audit partners possess better problem solving skills in more complex situations and are better able to communicate with clients, leading to greater client satisfaction and, thus, to higher audit fee.

Finally, in supplementary analyses, we test whether audit firm size alters the impact of the presence of a female audit partner within the joint auditor pair composition on audit fees. Our results show that these impacts are dependent, but in a different way, on the size of the audit firms in the joint auditor pair composition. Interestingly, we find that gender-diverse audit partners outperform two male joint audit partners in terms of audit fee premium only when they are appointed by equally competitive audit firms (i.e., two non-Big 4 or two Big 4 audit firms). When client firms are audited by one Big 4 auditor and one non-Big 4 auditor, the abnormal audit fees potentially arising from gender-diverse audit partners is more likely to be counterbalanced by the difference in expertise and risk sharing between audit firms. This result may be also due to the fact that coordination problems between two highly competitive audit firms (two Big 4 audit firms) are exacerbated within gender-diverse



audit pairs. These coordination problems are more likely to be amplified in the post-IFRS adoption period.

Our findings raise a number of questions regarding recruitment and promotion practices and the determinants of career success in audit firms. Indeed, there was only a small proportion of women audit engagement partners (18.31% in our case) and we were unable to find many cases where both engagement partners were female (only 53 firm-years observations). Our analysis is thus based on cases where the joint auditor pair has two male engagement partners or where a female audit partner is paired with a male audit partner. Consequently the findings of our study need to be interpreted with care. An interesting avenue for future research would be to focus on various other supply- or demand-side factors that may also help to explain the audit fee premium earned by gender-diverse audit partners in joint audit setting. Similarly, future research may also investigate if gender-diverse audit partners also provide higher audit quality compared to male audit partners.

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## **Chapter 2: Gender-diverse audit partners and earnings management in a mandatory joint audit setting**

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### ***ABSTRACT***

Our study examines whether gender-diverse engagement partners constrain earnings management in a French mandatory joint audit setting. Male and female engagement partners differ in terms of their innate characteristics. Accordingly, we argue that gender-diverse engagement partners are more likely to promote effective monitoring and collaborative behavior in detecting and curtailing opportunistic accounting practices in their audited clients. Consistently with our expectations, our empirical results show that gender-diverse engagement partners are negatively associated with discretionary accruals. This negative association is more pronounced in the post-IFRS adoption period, which has been conducive to aggressive earnings management in France. In additional analyses, we confirm the robustness of our results using a propensity score matching procedure. Gender-diverse engagement partners are found to constrain earnings management irrespective of whether clients hire one or two brand name audit firms. The variation in the level of earnings management is likely to stem from the male-female partners' interaction within the joint audit partners pair rather than from simply the assignment of a female audit partner. Finally, using appropriate econometric specification, we find that the pervasiveness of earnings management declines when client firms switch from all-male audit partners to gender-diverse audit partners.

**Keywords:** Audit partner gender, Discretionary accruals, Joint audit, IFRS.

## **Chapitre 2: Genre du commissaire aux comptes et gestion des résultats dans un contexte de co-commissariat**

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### ***RÉSUMÉ***

Notre étude examine si les commissaires aux comptes de genre différent limitent la gestion des résultats dans un cadre d'audit joint obligatoire comme celui de la France. Les commissaires aux comptes associés masculins et féminins diffèrent en termes de leurs caractéristiques innées. En conséquence, nous soutenons que les commissaires aux comptes de genre différent sont plus susceptibles de promouvoir un suivi efficace et un comportement collaboratif pour détecter et réduire les pratiques comptables opportunistes chez leurs firmes clientes. Conformément à nos attentes, nos résultats empiriques montrent que les commissaires aux comptes de genre différent sont associés de manière négative à la présence des comptes de régularisation discrétionnaires. Cette association négative est plus prononcée dans la période post-IFRS, propice à une gestion agressive des résultats. Dans des analyses complémentaires, nous confirmons la robustesse de nos résultats en utilisant une procédure d'appariement des scores de propension. Le résultat est également constant que les clients engagent un ou deux cabinets d'audit de grande taille. La variation au niveau de la manipulation des résultats est susceptible de provenir de l'interaction entre les auditeurs masculins et féminins au sein du collège des commissaires aux comptes plutôt que de la simple affectation dans la mission d'audit d'un commissaire aux comptes de genre féminin. Enfin, nous constatons que la gestion des résultats diminue lorsque les sociétés clientes engagent des commissaires aux comptes de genre différent en remplacement des commissaires aux comptes exclusivement masculins.

**Mots-clés:** Genre des commissaires aux comptes, Manipulation des résultats, audit conjoint, IFRS.

## **1 Introduction**

Much prior research has highlighted the role of auditing in reducing information asymmetry between stakeholders and firm managers. External auditors provide assurance to corporate stakeholders that company financial statements faithfully convey information regarding the underlying economic conditions of the reporting entity (DeFond & Zhang, 2014). External auditors also verify the credibility of reported earnings and certify that financial statements are prepared in conformity with applicable accounting standards, thereby ensuring the integrity of the financial reporting process (Caramanis & Lennox, 2008; Dechow, Ge, & Schrand, 2010; Piot & Janin, 2007). In response to notorious corporate accounting scandals that called into question the credibility of audit firms (e.g., Enron, WorldCom and Parmalat), regulators around the world have introduced numerous accounting and auditing reforms to enhance transparency and investor confidence in the quality of financial reporting. For example, regulations in different jurisdictions now require that the identity of audit partners responsible for each audit engagement be disclosed. Individual audit partners differ in terms of their personal attributes and financial incentives, encouraging various researchers to consider the engagement partner as the unit of analysis (e.g., Church, Davis, & McCracken, 2008; DeFond & Zhang, 2014; Francis, 2011; Nelson & Tan, 2005). As data on audit engagement partners becomes increasingly available, a succession of auditing studies have sought to enhance our understanding of how the individuals involved in the audit process affect this and audit outcomes (Cameran, Ditillo, & Pettinicchio, 2018; Gul, Wu, & Yang, 2013; Lennox & Wu, 2018; Menezes Montenegro, & Bras, 2015).

A growing body of archival auditing literature considers audit partner gender as an observable characteristic of individual audit partners that may affect audit outcomes.

These studies use various theoretical perspectives in an attempt to explain differences in audit outcomes for male and female auditors (Lennox & Wu, 2018). Male and female engagement partners differ in terms of their abilities, risk preferences and cognitive style. Findings from experimental studies confirm that gender-based differences also exist between male and female auditors and these differences have the potential to influence auditors' judgment and decision-making (Chung & Monroe, 1998; Chung & Monroe, 2001; O'Donnell & Johnson, 2001). Archival auditing literature in the single-partner audit setting documents somewhat mixed results with regard to gender-differentiated audit quality. Some studies suggest that female audit partners are more likely to enhance audit quality (Hardies, Breesch, & Branson, 2016; Ittonen, Vähämaa, & Vähämaa, 2013; Karjalainen, Niskanen, & Niskanen, 2018; Lee, Nagy, & Zimmerman, 2019), whereas others suggest that female audit partners are associated with lower audit quality (Hossain, Chapple, & Monroe, 2018; Yang, Liu, & Mai, 2018) or the absence of any link between auditor gender and audit outcomes (Gul et al., 2013). The mixed results from these studies highlight the importance of considering institutional settings and auditing environments that may consequently influence audit partners' decision-making.

We seek to contribute to literature on gender-differentiated audit quality by investigating the linkage between audit engagement partner gender and earnings management in a mandatory joint audit setting. In the French regulatory environment, firms preparing consolidated financial statements are required to appoint two different audit firms to jointly audit their financial statement (Ratzinger-Sakel, Audoussert-Coulier, Kettunen, & Lesage, 2013). The joint audit partners split the audit task, cross-review each other's work and issue a single audit report bearing the signature of both partners along with the names of their audit firms. Thus, the gender of each engagement

partner can be ascertained by looking at the audit report. In a joint audit setting, the composition of the joint audit engagement partners may be two male, two female, or one male and one female. However, we eliminated the case where both engagement partners are female because there were few observations of such instances and we restrict our analysis to comparison of male-female joint engagement partner pairs (hereafter gender-diverse engagement partners) and all-male engagement partner pairs. Specifically, we examine whether gender-diverse engagement partners constrain excessive earnings management compared to all-male engagement partners.

The issue of audit partner gender with regard to earnings management matters more in a joint audit setting than in a single-partner audit setting for several reasons. First, joint audit engagement partners mutually decide audit strategy and plan for each audit engagement. Second, joint audit partners split the audit task for conducting the audit and cross-review the work performed by the other partner. Gender-diverse engagement partners possess varied skills, abilities and perspectives compared to all-male audit partners, resulting in effective monitoring and collaborative behavior with regard to the audit process, thus reducing the probability of undetected misstatement. Third, in a joint setting, both partners jointly negotiate with client management over financial misstatement and other matters. Diverse skills, abilities and perspective may provide a comparative advantage to gender-diverse partners in auditor-client negotiation in comparison with all-male partners. Such advantages are also crucial in a joint audit setting, where competition among joint audit firms may reduce cooperation and productive exchange of information due to their need to protect business secrets. A number of studies have highlighted that suboptimal collaboration may undermine audit quality in a joint audit setting (Lobo, Paugam, Zhang, & Casta, 2017; Zerni, Haapamäki, Järvinen, & Niemi, 2012). Indeed, evidence exist that audit firms rely more

on female auditors to get favorable outcomes in various situations. In helping to resolve situations of conflict between clients and audit firms, female auditors play a “troubleshooter” role (Bitbol-Saba & Dambrin, 2019).

We extend the literature on gender-differentiated audit quality by investigating the French mandatory joint audit setting. We use a sample of French listed firms in the SBF 120 index between 2002 and 2017 and estimate discretionary accruals using a Modified Jones Model. In addition to well-known client firm and audit firm attributes, we also control for a number of engagement partner attributes, so that our variable of interest (gender-diverse engagement partners) is not confused with other attributes of engagement partners. We mitigate endogeneity concerns by using the system GMM estimation method and report estimates of OLS and fixed effect models for comparability purposes. Although female audit partners are found to face several constraints in developing their professional skills (i.e., specialization, experience, and expertise), our results suggest that gender-diverse engagement partners are associated with smaller absolute positive and absolute negative discretionary accruals. We then use difference-in-differences methodology and find that the negative association between gender-diverse engagement partners and earnings management is more pronounced in a complex environment (i.e., the post-IFRS adoption period), conducive to intensified earnings management. In additional analyses, we verify the robustness of our findings by using Propensity Score Matching to mitigate the selection problem with regard to audit partners and client alignments. We find that gender-diverse engagement partners provide high-quality audited earnings irrespective of the use of brand audit firms, signaling that the assignment of partners may take precedence over the selection of audit firm. We also show that the variation in the level of earnings management stems from the male-female partners’ interaction within the joint auditor pair rather

than simply from the assignment of a female audit partner. To provide more evidence on the skills of gender-diverse engagement partners, we find that client firms are less likely to mislead financial statement users when they switch from all-male to gender-diverse audit partners. In contrast, no effect is observed on the level of earning management when firms switch from gender-diverse engagement partners to all-male engagement partners. Overall, our results highlight the importance of audit partners' gender in the assessment of the financial statement quality.

The rest of our study is organized as follows. The next section features the literature review in relation to our study. Section 3 formulates the hypotheses to be tested. Section 4 describes data, selection of variables, and econometric specification. Estimated results are discussed in section 5. Section 6 provides additional analyses. Section 7 presents our conclusions, considers the social and managerial implications and opens up avenues for future research.

## **2 Literature review**

### *2.1 Audit firms and earnings management*

Although earnings management does not necessarily entail violation of accounting principles, financial statement quality is considered lower for firms with earnings management behavior because excessive earnings management can make the financial statements misleading. Reported earnings are used in a variety of ways, such as equity valuation, debt contracting, and management compensation plans (Francis, Maydew, & Sparks, 1999). Corporate stakeholders are concerned that opportunistic executives may misuse their discretion for choosing accounting methods and report overly optimistic earnings that are more advantageous for them but are detrimental for external users (DeAngelo, DeAngelo, & Skinner, 1994; Healy & Wahlen, 1999). The

role of external auditors is to reduce information asymmetry between corporate management and the firm's stakeholders by ensuring the integrity of the financial reporting process (Jensen & Meckling, 1976). In a similar vein, DeFond and Zhang (2014) argue that external auditors provide assurance to corporate stakeholders that company financial statements faithfully convey information regarding the underlying economic conditions and inherent characteristics of the reporting entity. External auditors verify the credibility of reported earnings and certify that financial statements are prepared in conformity with accounting standards (Dechow et al., 2010).

Abundant literature has examined the issue of earnings management and documented that clients audited by brand name audit firms (i.e., Big N) have lower level of abnormal accruals compared with clients of non-Big auditors (Becker, DeFond, Jiambalvo, & Subramanyam 1998; Francis et al., 1999). A common interpretation is that brand name audit firms possess more resources and expertise to detect questionable accounting practices, and are therefore more effective in constraining managers' discretion to manipulate earnings through discretionary accruals. Auditor brand reputation provides strong motivation to uphold their independence because breach of independence may jeopardize their reputation and result in loss of audit fee revenue from client firms switching to other reputable audit firms. Furthermore, exposure to litigation costs also motivates auditors to maintain their independence (DeFond & Zhang, 2014).

In contrast to litigation costs or deep pocket arguments commonly used for large audit firms operating in a common-law system, auditors in France face lower litigation risk due to the reduced responsiveness of the French civil law legal system in protecting minority shareholders (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998). Drawing on this argument, Piot and Janin (2007) examine the issue of earnings management in a



French joint audit setting and find no difference in terms of accruals quality between Big and non-Big audit firms. In a similar vein, Francis, Richard and Vanstraelen (2009) find no systematic relationship between absolute abnormal accruals and audit firm size. However, they document a hierarchy of audit firm pairs with regard to income-increasing accruals quality by showing that a pair of two Big 4 audit firms provides higher-quality audited earnings than a pair of Big 4 and non-Big 4 audit firms. These results raise the question of whether the use of brand name audit firms is related to earnings quality in civil-law countries such as France and emphasize the role played by audit partners.

Going further, subsequent research contends that industry specialist audit firms invest heavily in technologies, control systems and personnel that enhance their ability to detect errors and fraud within their industry. Thus, clients of industry specialists have smaller amounts of abnormal accruals and higher quality of financial reporting (Balsam, Krishnan, & Yang, 2003; Gul, Fung, & Jaggi, 2009; Krishnan 2003). A review of prior archival studies reveals that audit firms or audit offices are the relevant unit of analysis and implicitly assumes homogeneity of audit outcomes across engagement partners. More recent literature has challenged this assumption by showing that the personal attributes of engagement partners may influence engagement partner decisions and that audit outcomes may differ considerably across engagement partners (Lennox & Wu, 2018; Gul et al., 2013; Nelson & Tan, 2005).

## *2.2 Audit partner gender and audit outcomes*

The economic psychology literature provides ample evidence to suggest that women are more conservative and have a greater tendency to take less extreme risks than men in a variety of contexts (Byrnes, Miller, & Schafer, 1999; Croson & Gneezy, 2009). Similarly, Hardies, Breesch, & Branson, (2013) find that female auditors tend to

avoid risk as compared to male auditors. Some evidence suggests that auditors are generally overconfident (Owhoso & Weickgenannt, 2009); female engagement partners are presumed to be less confident than male colleagues (Ittonen & Peni, 2012). Overconfidence coupled with risk-taking implies that female auditors will produce a better audit quality. Extant literature also documents gender-related behavioral differences between auditors with respect to ethical intensity in general and professional ethics in particular. Female auditors are found to be more ethical and are less likely to engage in behavior that undermines audit quality, and are more conscientious than their male counterparts (Bernardi & Arnold, 1997; Pierce & Sweeney, 2010; Shaub, 1994). In analyzing disciplinary violation of French statutory auditors, Hottegindre, Loison, and Farjaudon (2017) find that male French statutory auditors exhibit behavior that undermines their professional image, whereas female statutory auditors mainly commit disciplinary violations related to audit quality and violations of professional peer review.

The cognitive psychology literature suggests that men and women adopt distinctive approaches in acquiring and processing information, known as the selectivity hypothesis. Women rely less on heuristics (i.e., rules of thumb) and process information in detail, whereas men tend to process information selectively (Mayer-levy, 1986). Experimental and behavioral studies in auditing confirm that the selectivity hypothesis may influence the information evaluation strategy of auditing students (Chung & Monroe, 1998). Chung and Monroe (2001) examine the influence of audit task complexity on the accuracy of audit judgments made by accountants and report that male accountants are more accurate in less complex audit tasks, whereas female accountants are more accurate in more complex audit tasks. In a similar vein, O'Donnell and Johnson (2001) examine the influence of the complexity of analytical

procedures on the efficiency of male and female auditors and document that female auditors are more efficient than male auditors in a variety of tasks. In contrast, Breesch and Branson (2009) show that male auditors analyze misstatements more accurately than female auditors. Overall, gender-related psychological and behavioral differences such as risk tolerance, overconfidence and cognitive style suggest that male and female engagement partners may differ in terms of audit planning and audit process, not without consequences on the earnings quality of their client firms. Furthermore, male and female engagement partners may also differ with respect to the competence and independence dimensions of audit quality. Thus, audit outcomes might be systematically related to the engagement partners' gender (Church et al., 2008; Lennox & Wu, 2018).

In contrast with board gender diversity,<sup>23</sup> the very limited archival auditing literature documents somewhat mixed findings concerning the link between audit partner gender and audit outcomes from various capital market settings (Hardies et al., 2016; Hossain et al., 2018; Ittonen et al., 2013; Niskanen, Karjalainen, Niskanen, & Karjalainen, 2011; Karjalainen et al., 2018; Lee et al., 2019; Yang et al., 2018). Using a sample of private Finnish firms, Niskanen et al. (2011) find that clients audited by female auditors are positively related to absolute discretionary accruals. Importantly, this positive association is mainly driven by income-decreasing accruals, suggesting that female auditors are more conservative with regard to income-decreasing earnings management. Similarly, based on a sample of large Finnish and Swedish listed firms, Ittonen et al. (2013) find that firms audited by of female engagement partners exhibit

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<sup>23</sup> Studies examining the effect of corporate board gender diversity suggest that gender diversity improves board effectiveness through intensive monitoring and oversight of financial reporting process and leads to more transparent and accurate financial reports (Adams & Ferreira, 2009; Gul, Hutchinson, & Lai, 2013). At the same time, it is less likely that managers of companies with a female board of directors or with women in senior management positions will engage in aggressive accounting practices (Barua et al., 2010; Krishnan & Parsons, 2008; Peni & Vähämaa, 2010; Srinidhi et al., 2011).

smaller abnormal accruals, and thus argue that female engagement partners are more effective in mitigating opportunistic earnings management. Using data on financially distressed private Belgian companies and the likelihood of issuing going-concern opinion as a proxy for audit quality, Hardies et al. (2016) show that female engagement partners provide higher audit quality compared to their male counterparts. They argue that female engagement partners are both more independent and more risk-averse, resulting in a greater willingness to offer going-concern opinion to important or high-risk clients. Similarly, Karjalainen et al. (2018) suggest a positive effect of female partners on audit quality. However, based on a sample of financially distressed Australian listed firms, Hossain et al. (2018) report contrary findings, suggesting that audit quality of female engagement partners is significantly lower (measured by the likelihood of issuing going-concern opinion and discretionary accruals) compared to male engagement partners. They also find no association between audit partner gender and absolute discretionary accruals. These authors argue that different institutional settings and regulatory environments potentially impact auditor decision-making. Similarly, using a sample of Chinese listed firms, Yang et al. (2018) report that female auditors deliver lower audit quality. Audit clients of male auditors are more likely to have lower absolute and lower income-increasing discretionary accruals. The authors explain the results in terms of empathy theory and relationship-oriented gender role theory. Because auditors have a higher empathy level than male auditors, they are more likely to relax audit rules and compromise with their clients. In the U.S., Lee et al. (2019) examine the effect of lead audit partner gender on abnormal accruals and financial restatements. They find that female engagement partners positively influence accruals quality. However, no significant relationship is reported between accounting restatements and female audit partners.

Using data on audit firms operating in Portugal and their audited clients, Menezes et al. (2015) examine the effect of gender diversity in the partnership structure on earnings quality of client firms and document that female-dominance in partner positions reduces excessive earnings management in audited clients. Similarly, Cameran et al. (2018) use proprietary data from Big 4 audit firms operating in Italy to examine the effect of audit team composition on audit quality and find that the presence of women in leading positions (i.e., engagement partners and managers) enhances audit quality. Downar, Ernstberger, and Koch (2017) examine the effect of auditor dyad composition on earnings quality and report that distance-based auditor dyads (i.e., individuals with different characteristics) provide higher audit quality than homophily-based auditor dyads. Finally, several studies find that female audit partners leads to higher audit fees (Ittonen & Peni, 2012; Hardies, Breesch, & Branson, 2015; Lee et al., 2019), even in a mandatory joint audit setting (Nekhili, Javed, & Chtioui, 2018). Going further, the question we address in our study is whether gender-diverse engagement partners provide higher quality earnings in a joint audit setting.

### **3 Hypothesis development**

#### *3.1 Gender-diverse engagement partners and earning management in a joint audit setting*

We consider diversity at audit engagement partner level in a French mandatory joint audit setting, where each partner is assigned by different audit firms. French auditing standards require each engagement partner to understand the client firm and its environment, in order to better assess the possibility of material misstatement at financial statement level (NEP-100). The audit process mainly involves four components such as audit planning, client risk assessment, conducting the audit,

reviewing and evaluating the work carried out and issuing an appropriate audit report (Ittonen & Peni, 2012). Joint audit engagement partners mutually decide on audit strategy and plan for each audit engagement. Because female audit partners are more risk averse than their male colleagues, they may demand more audit effort for clients with higher assessed risk or with more accounting misstatements. Indeed, auditors are responsive to various aspects of risk and adapt their audit investment accordingly (Johnstone & Bedard 2001, 2003; Schelleman & Knechel, 2010). Additional audit efforts enhance the probability of detecting earnings manipulation, mainly in the initial stage as a result of the extensive information gathered from audited clients (Caramanis & Lennox, 2008). Furthermore, joint audit partners split the tasks for conducting the audit and then cross-review the work carried out by the other partner. Reciprocal review of each other's work reduces the likelihood of undetected accounting misstatements due to the diversity of cognitive resources in the case of gender-diverse partners (i.e., free from cognitive biases).

Audited financial statements are a joint product of client management and external auditors. Several studies show that client-partner disputes mostly arise during negotiation over material accounting and disclosure issues (Antle & Nalebuff, 1991; Beattie, Fearnley, & Brandt, 2000). In a joint audit setting, both partners jointly negotiate with client management over financial misstatements and other matters. The existing literature attributes better communication skills to women, which in turn enable them to perform better in group problem-solving tasks (Ittonen et al., 2013). Better communication skills may provide comparative advantage to gender-diverse partners in auditor-client negotiation compared to all-male partners. Such advantages are also crucial in a joint audit setting, where competition among joint audit firms may reduce cooperation and productive exchange of information due to their need to protect

business secrets. Suboptimal collaboration may undermine audit quality (Lobo et al., 2017; Zerni et al., 2012). Indeed, there is evidence that audit firms use female auditors to obtain favorable outcomes in various situations. In resolving conflict situations, female auditors play a “trouble-shooter” role (Bitbol-Saba & Dambrin, 2019). The cooperative nature of women promotes common grounds to avoid audit failure. In a joint audit setting, a shared goal of the joint audit partners is to minimize the likelihood of audit failure. Conversely, it can also be argued that their higher empathy level may encourage female engagement partners to relax audit rules and compromise with their clients, thereby providing client management with an opportunity for opinion shopping (Ratzinger-Sakel et al., 2013; Yang et al., 2018). Moreover, a male-dominated environment (the presence of a male joint audit partner and a male client) may discourage female auditors from expressing their opinion during auditor-client negotiations (Bitbol-Saba & Dambrin, 2019). The likely consequences of miscommunication, lack of understanding, differences in personalities and conflicts between gender-diverse partners can become major impediments to the potential benefits of gender diversity and may exacerbate the coordination problems highlighted in the literature (Lobo et al., 2017; Zerni et al., 2012).

Overall, the above arguments imply that gender-diverse engagement partners are more likely to promote effective monitoring and collaborative behavior with regard to an audit process. Moreover, gender-diverse engagement partners possess varied skills and abilities which enhance their potential to resolve conflicts and to obtain favorable outcomes, compared to same-gender audit partners. Thus, we put forward the following hypothesis:

**H1:** *Gender-diverse joint audit partners reduce earnings management.*

### *3.2 Gender-diverse engagement partners and IFRS adoption*

Since 2005, French listed firms, as well as firms of European Union countries, are required to prepare their consolidated accounts in accordance with IFRS (EU regulation 1606/2002). Proponents of developing and adopting a common language for preparing financial statements argue that the new accounting standards (i.e., IFRS) would ensure widespread comparability in financial reports across different countries (Pope & McLeay, 2011). Earlier studies analyzing the impact of the new accounting standards on financial reporting quality show that financial reports prepared under IFRS are more comparable and consistent (Barth, Landsman, & Lang, 2008), and that IFRS adoption not only enhanced accrual quality but also resulted in timely loss recognition (Chen, Tang, Jiang, & Lin, 2010). One major aspect of IFRS adoption is that it required switching from the existing set of measurement and recognition standards to new standards. Making this switch calls for considerable judgment and the use of private information. Therefore, IFRS first-time adoption provided transition management with substantial discretion in manipulating balance sheets (Ball, Tyler, & Wells, 2015). The extent to which firm managers have used this discretion depends on various factors such as firm-specific characteristics and national legislation (Ball et al., 2000). In particular, IFRS provided managers with the ability to eliminate balance sheet bloat and derecognize and impair various asset classes. Therefore, it was expected that transition management could manage earnings upwards after switching to IFRS during the earlier years. Similarly, financial reports prepared under IFRS became extremely complex and unmanageably large due to dense disclosure and fair value requirements (KPMG 2007). Accordingly, Jeanjean and Stolowy (2008) show that various studies of the voluntary adoption of IFRS suffer from selection bias, which possibly caused the potential benefits of IFRS to be overestimated. After controlling for selection bias



caused by the switch to IFRS, the authors show that the pervasiveness of earnings manipulations intensified in France compared to the UK and Australia.

An audit is inherently a matter of professional judgment and decision-making process (Knechel, 2000). Lead engagement partners perform a variety of tasks throughout the audit process. For example, audit partners plan and implement audit strategy, negotiate with the client over financial misstatement matters, and finally sign the audit report (Ittonen & Peni, 2012). Auditors obtain and process numerous information cues in an attempt to find accounting misstatements in client financial reports and establish that accounts are fairly stated (Nelson & Tan, 2005). Experimental and behavioral studies in auditing have since confirmed that male and female auditors are arguably different in terms of their innate characteristics (e.g., risk tolerance, skills, ability, technical expertise, cognitive information processing). In particular, considerable evidence suggests that female auditors are more efficient and accurate in their decision-making than male auditors in more complex audit tasks (Chung & Monroe, 1998; Chung & Monroe, 2001; O'Donnell & Johnson, 2001). Gender-diverse engagement partners may also possess better skills and abilities to resolve disagreements with regard to IFRS implementation between joint audit partners and their client management, who are not necessarily IFRS experts.

Thus, by recognizing that gender-diverse engagement partners are more likely to promote effective monitoring and collaborative behavior in detecting and curtailing earnings management, gender-diverse audit partners may also better satisfy required judgment skills to resolve IFRS-driven complexity and to discover more accounting misstatement by firm managers after the switch to IFRS.

**H2:** *The negative relationship between gender-diverse engagement partners and earnings management will be stronger in the post-IFRS period.*

## **4 Data and research methodology**

### *4.1 Sample selection*

We started developing our sample by including all the firms in the SBF 120 index listed on Euronext Paris for the period between 2002 and 2017. From the initial sample, we eliminated firms in the financial and real estate sectors and foreign firms due to their distinct characteristics and differences in regulations (Bennouri, Chtioui, Nagati, & Nekhili, 2018). We also eliminated firms that were part of our initial sample in 2002 but no longer existed on December 1, 2017<sup>24</sup> and firm-year observations with missing values. The application of these restrictions yielded a final sample of an unbalanced panel of 1320 firm-year observations. Data regarding accounting and financial information was taken from the Thomson data stream. The engagement partners' names and audit committee characteristics were hand-collected from the reference documents or firms' audited financial statements available at the AMF website or the firms' official websites. Since the audit reports are signed by both joint audit engagement partners, we determine the gender of each partner by reviewing their full names. In our study, we use audit engagement partners' year of certification to control for the length of their career. We consulted the official website of the French National Institute of Statutory Auditors (<http://annuaire.cncf.fr>) to retrieve audit partners' year of certification and to verify the gender of audit engagement partners. In the event of missing information, we consulted various information sources such as [www.dirigeant.societe.com](http://www.dirigeant.societe.com) and the social networking website [www.linkedin.com](http://www.linkedin.com).<sup>25</sup>

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<sup>24</sup> We start our sample period from 2002 because data pertaining to various variables used in our study is not available before then. For example, we used audit fees to calculate industry specialization of audit firms and engagement partners, but audit fee data has been publically available only since 2002. We exclude foreign listed firms because these firms are not required to appoint joint auditors.

<sup>25</sup> Laurion, Lawrence, and Ryans (2017) use both Google and LinkedIn, as valuable professional-oriented

## *4.2 Measuring discretionary accruals*

Prior research indicates that accruals-based earnings are more relevant for users of financial statements than for operating cash flows. However, firm managers also generally manipulate earnings through discretionary accruals (Dechow, 1994; Francis et al., 1999). One key objective of audit work is to ensure that financial statements are fairly presented in conformity with accounting standards and to constrain aggressive accounting practices in client firms. Abundant audit differentiation research concentrates on financial statement quality and often uses abnormal accruals as a proxy for earnings management, because they reflect the quality of audit work performed by external auditors (Dechow et al., 2010; DeFond & Zhang, 2014). Therefore, following the existing literature, our study also considers discretionary accruals to proxy earnings management. We compute abnormal discretionary accruals as the residuals from the Modified Jones Model (Kothari, Leone, & Wasley, 2005) widely used in the literature (e.g., Francis, Michas, & Seavey, 2013; Ittonen et al., 2013; Andre et al., 2016).

$$TA_t = \alpha_1 \left( \frac{1}{A_{t-1}} \right) + \alpha_2 (\Delta REV_t - \Delta REC_t) + \alpha_3 PPE_t + \alpha_4 ROA_t + \text{Year Fixed Effects} + \text{Industry Fixed Effects} + \varepsilon_t \quad (2.1)$$

where  $TA_t$  is total accruals at time  $t$  (earnings before extraordinary items less net cash flows from operations),  $\Delta REV_t$  is net sales revenues at time  $t$  less net sales revenues at time  $t - 1$ ,  $\Delta REC_t$  is accounts receivables at time  $t$  less accounts receivables at time  $t - 1$ ,  $PPE_t$  is gross property plant and equipment at time  $t$ .  $A_{t-1}$  denotes lagged total assets and is used to scale all variables, the coefficients  $\alpha_1, \alpha_2, \alpha_3$  and  $\alpha_4$  are the parameters from estimating Equation (2.1), firm subscripts are omitted for simplicity, and  $t$  stands for year.

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social networks, to investigate audit partner rotation among US publicly listed firms. We also examined the accuracy of data provided by LinkedIn by cross-checking with information gathered on audit partner in the official CNCC website (<http://annuaire.cncc.fr>). No significant difference was observed between the two sources.

First, we use absolute values of residuals ( $\varepsilon_{it}$ ) from Equation (2.1) to assess the magnitude of earnings management and consider large absolute discretionary accruals ( $ABS\_DA$ ) to infer lower quality of audited earnings. Second, many prior studies suggest that depending on management's objective, reported earnings can be manipulated either upward or downward. Therefore, we carry out further analysis by separately considering the signed values of positive and absolute negative discretionary accruals to assess the effect of gender-diverse engagement partners on earnings management.

### *4.3 Measure of gender-diverse engagement partners*

As discussed earlier, each audit report in the French joint audit setting is signed by both engagement partners. Thus, we determine the gender of each partner by reviewing their full names. In order to analyze the effect of gender-diverse engagement partners on discretionary accruals, we use  $GENDER\_AP$  as our test variable and define it as one if at least one female engagement partner is a joint engagement partner and zero otherwise. We expect a negative coefficient of  $GENDER\_AP$  on discretionary accruals. We use a dummy variable to represent  $IFRS$  and define it as one to indicate the adoption of new standards in 2005 and zero otherwise. We include an interaction term between  $GENDER\_AP \times IFRS$  and use the difference-in-differences procedure to examine the marginal effect of  $GENDER\_AP$  on discretionary accruals in the post-IFRS period. We expect a negative association between gender-diverse engagement partners and discretionary accruals in the post-IFRS adoption.

### *4.4 Econometric specification*

DeFond and Zhang (2014) note that the level of reported earnings in audited financial statements is a joint product of client firms' innate characteristics, internal

control mechanisms and external auditors. Likewise, we consider a wide range of client firm, audit firm and engagement partner specific characteristics, which may contribute to or mitigate the magnitude of earnings management in audited clients (Dechow et al., 2010). It is still possible that the potential impact of gender-diverse audit partners on earnings management is driven by unobservable client characteristics that affect both auditor selection and earnings management simultaneously. Indeed, Lennox and Wu (2018) argue that endogeneity issues are also serious for partner level studies, when financial reporting quality is used to capture audit quality. Ittonen et al. (2013) use fixed effect estimations to examine auditor gender and its impact on accruals quality. However, reverse causality between earnings management and audit partner gender may lead to biased fixed effect estimates. Various studies also analyze the effect of audit partner gender on audit outcomes by using two-stage regression models when single-partner audits are required (Hardies et al., 2016; Hossain et al., 2018; Ittonen et al., 2013). However, in joint audit setting, where the audit partners come from different audit firms, it is hard to find any compelling exclusion restriction. In addition, as well as the fact that French firms appoint auditors for a six-year period, the variable *GERDER\_AP* may also be auto correlated due to the long-term audit mandate of joint auditors. Consistent and efficient coefficient can be obtained by using lagged levels of endogenous variables as instruments (Blundell & Bond, 1998). Thus, we consider that both auditor appointment and earnings management are endogenous. In order to mitigate endogeneity concerns arising from various sources, we use the General Method of Moments (GMM) estimation. The system GMM approach allows the relationship between gender-diverse audit partners (*GERDER\_AP*) and discretionary accruals (*ABS\_DA*) to be estimated in levels and first differences simultaneously. When the study period is short compared to the number of individuals, the fixed effect

estimation results in biased estimates and GMM estimation is more appropriate (Wintoki, Linck, & Netter, 2012). Accordingly, we use the two-step GMM approach, also known as system GMM, to test H1 using Equation (2.2).<sup>26</sup>

$$\begin{aligned} ABS\_DA = & \beta_0 + \beta_1 Lag\ ABS\_DA + \beta_2 GENDER\_AP + \beta_3 IFRS \\ & + \beta_4 AUDCOM\_SIZE + \beta_5 AUDCOM\_IND + \beta_6 AUDCOM\_DIV \\ & + \beta_7 REC\&INV + \beta_8 FOR\_ASSET + \beta_9 R\&D + \beta_{10} LEV + \beta_{11} LOSS \\ & + \beta_{12} ROA + \beta_{13} TOBIN + \beta_{14} CROSS + \beta_{15} BIG + \beta_{16} F\_SIZE \\ & + \beta_{17} SPEC\_AF + \beta_{18} TENURE\_AF + \beta_{19} SPE\_AP \\ & + \beta_{20} CAREER\_AP + \beta_{21} TENURE\_AP + \beta_{22} PUBSPEC\_AP \\ & + \beta_{23} PORTFOLIO\_AP + \beta_{24} INDUSTRY + \varepsilon \end{aligned} \tag{2.2}$$

where  $\varepsilon$  is the error term. Definition of each variable is given in Table 2.1.

#### *4.5 Control variables*

Based on the existing literature, we include both contributing and mitigating factors to predict earnings management. Prior studies provide evidence that IFRS adoption in Europe has intensified the instance of earnings manipulation, particularly in France (Callao & Jarne, 2010; Jeanjean & Stolowy, 2008). Thus, we predict a positive coefficient on IFRS. We consider a set of client firms' specific variables to control for audit committee characteristics and other firm-specific variables. An important role of the audit committee is to oversee the quality of financial reporting. Audit committees not only participate in auditor selection but also ensure the independence of external auditors by protecting them from client pressure. In line with prior studies, we include *AUDCOM\_SIZE* to represent the number of directors on the audit committee. A greater number of audit committee members provide more resources and talents for

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<sup>26</sup> An increasing number of studies in the accounting and corporate governance literature use GMM estimation to examine various issues relating to quality of financial information, firm performance, earnings management and investors' protection (Barton & Waymire, 2004; Bennouri et al., 2015; Bennouri, Chtioui, Nagati, & Nekhili, 2018; Kang & Sivaramakrishnan, 1995).

overseeing the financial reporting process (Lin & Hwang, 2010). We also predict audit committee independence (*AUDCOM\_IND*) will increase the effective oversight capability of the audit committee (Abbott, Parker, & Peters, 2004; Klein, 2002). Female directors on the audit committee (*AUDCOM\_DIV*) may also enhance its monitoring capability and constrain aggressive accounting practices in their respective firms. In accordance with prior studies, we include *FOR\_ASSET*, *REC&INV* and *LEV* to control for client firm complexity and inherent risk. Auditing client firms with foreign operations (*FOR\_ASSET*) or receivables and inventory (*REC&INV*) is more complex, and provides an environment more conducive to the manipulation of earnings. Empirical findings are mixed with regard to the impact of leverage (*LEV*) on earnings manipulations (Vasilescu & Millo, 2016). We include *LOSS*, *ROA* and *QTOB* as indicators of client profitability, financial condition and firm performance. A number of studies indicate that management of poorly performing companies (*LOSS*) has less discretion over accruals estimates. Accrual models may overestimate the accruals of financially troubled companies (Dechow et al., 1995; Srinidhi et al., 2011). We expect management of profitable firms (*ROA*) to be less likely to engage in earnings manipulation (Lee et al., 2019). Firms involved in earnings manipulation may reduce firm value if such practices are detected and revealed to stakeholders (Becker et al., 1998). Accordingly, we predict a negative relationship between *LOSS*, *ROA* and *QTOB*, on the one hand, and earnings management, on the other. We expect a negative relation between *R&D* intensity and discretionary accruals (Jo & Kim, 2007). Following Lang, Raedy, and Wilson (2006), we expect a higher magnitude of earnings management for cross-listed (*CROSS*) firms. Becker et al. (1998) assert that firm size (*F\_SIZE*) can be a surrogate for various omitted variables. Furthermore, larger client firms are subject to greater monitoring (Meek et al., 2007).

With regard to audit firm attributes, prior research suggests that clients of Big N audit firms exhibit lower discretionary accruals compared to non-Big audit firms (Becker et al., 1998; Francis et al., 1999). We include an ordinal variable *BIG* that takes value zero, one or two to control for audit firm size in the joint audit setting. *SPEC\_AF* is a dummy variable that indicates whether the client firm is audited by an industry specialist audit firm and coded as one if one of the joint audit firms is an industry specialist and zero otherwise. We classify industry specialization by calculating annual market share of audit fees for each audit firm within an industry, rank audit firm within the industry and define two audit firms at the top of the ranking as industry specialists. Based on prior evidence, we expect a negative relationship between industry specialization (*SPEC\_AF*) and discretionary accruals (Chi & Chin, 2011; Gul, Fung, & Jaggi, 2009; Lim & Tan, 2008). In line with prior studies, we expect that the duration of the relationship between the audit firm and the client firm (*TENURE\_AF*) decreases earnings management (Chen, Lin, & Lin, 2008; Gul et al., 2009).

Finally, we control for a number of joint audit partner specific variables. Following prior studies, we include *SPE\_AP* to indicate the industry specialist audit partners and code *SPE\_AP* as one if one of the joint audit engagement partners is an industry specialist (Chi, Myers, Omer, & Xie, 2017; Zerni, 2012; Chen, Lin, & Lin, 2008). An engagement partner is classified as an industry specialist if the partner is the largest supplier within that particular industry, based on annual market share of audit fees, and has audited two or more clients in that industry. Based on prior evidence, a negative coefficient is expected for audit partner industry specialization (Chi & Chin, 2011). In addition to audit firm tenure, we also control for engagement partner tenure (*TENURE\_AP*). We define engagement partner tenure on the basis of the number of consecutive audit partner and client firm relationships. For empirical analysis, mean



tenure of joint audit partners is used. Following studies by Chen et al. (2008) and Chi et al. (2017), we expect audit partner tenure to be negatively associated with discretionary accruals. Consistently with Ittonen et al. (2013), we control for audit partner experience (*CAREER\_AP*), as measured by the number of years the audit partners has been registered and have been legally authorized to sign audit reports. We use mean career of joint audit partners. Prior evidence suggests that large auditors are associated with lower discretionary accruals (Becker et al., 1998; Van, Tendeloo, & Vanstraelen, 2008), so we control for audit partner portfolio (*PORTFOLIO\_AP*) representing the size of the client portfolio as measured by the logarithm of total audit assets by an audit partner. We also control for engagement partner public specialization (*PUBSPEC\_AP*) and classify an engagement partner as a public specialist if he/she has audited more than two clients within a year. This variable is coded one if one of the joint audit engagement partners is a public specialist audit partner. Following prior studies, a negative coefficient is expected for these variables. The level of earnings management may also differ by industry. Accordingly, we add an *INDUSTRY* dummy variable to capture inherent audit risk associated with each industry. We use the industry classification benchmark (ICB) categorization to classify industries in prior studies in the French context (Bennouri, Nekhili, & Touron, 2015; Nekhili et al., 2018).

**Table 2.1: Definition of variables**

<b>Variable</b>	<b>Definition</b>	<b>Measure<sup>27</sup></b>
<b>Dependent variable:</b>		
<i>ABS_DA</i>	Absolute value of discretionary accruals	Absolute value of discretionary accruals using Modified Jones Model.
<i>POS_DA</i>	Positive discretionary accruals	Income-Increasing discretionary accruals using Modified Jones Model.
<i>NEG_DA</i>	Negative discretionary accruals	Absolute value of income-decreasing discretionary accruals using Modified Jones Model.
<b>Endogenous variable:</b>		
<i>GENDER_AP</i>	Audit by gender-diverse engagement partners	Dummy variable equal to one if at least one audit partner is a female.
<b>Audit firm and audit partner variables</b>		
<i>BIG</i>	Audit by Big audit firms	Ordinal variable coded “zero” if the company is audited by non-Big audit firms, “one” if the company is audited by only one Big audit firm, “two” if the company is audited by two Big audit firms.
<i>SPEC_AF</i>	Audit firm Industry Specialization	Dummy variable equal to one if the audit firm is an industry specialist and zero otherwise.
<i>TENURE_AF</i>	Audit firm Tenure	Natural logarithm of the number of years the auditor-client relationship. We use mean tenure of both audit firms.
<i>SPE_AP</i>	Audit Partner Industry Specialization	Dummy variable equal to one if the audit engagement firm is an industry specialist and zero otherwise.
<i>CAREER_AP</i>	Audit Partner Career	Natural logarithm of the number of years since the auditor's registration date. We used mean career of both audit engagement partners.
<i>TENURE_AP</i>	Audit Partner Tenure	Natural logarithm of the number of years of the audit engagement partner and client firm relationship. We use mean tenure of both audit partners.
<i>PUBSPEC_AP</i>	Audit Partner Public Specialization	Dummy variable equal to one if the audit partner is a public client specialist and zero otherwise.
<i>PORTFOLIO_AP</i>	Audit Partner Portfolio	Dummy variable coded one if for the audit partner the portfolio of audited assets was greater than the median and zero otherwise.
<b>Control variables:</b>		
<i>IFRS</i>	IFRS adoption	Dummy variable equal to one after adoption of IFRS standards in 2005, and zero otherwise.
<i>AUDCOM_SIZE</i>	Audit committee size	Total number of audit committee members
<i>AUDCOM_IND</i>	Audit committee independence	Ratio of non-executive independent audit committee members to total number of audit committee members.
<i>AUDCOM_DIV</i>	Audit committee diversity	Percentage of female audit committee members
<i>REC&amp;INV</i>	Receivable and inventory	Accounts receivable and inventory divided by total assets.
<i>FOR_ASSETS</i>	Foreign assets	Ratio of foreign assets to total assets.
<i>R&amp;D</i>	Research and Development	Ratio of R&D investment to total assets.
<i>LEV</i>	Leverage	Ratio of financial debt to total assets.
<i>LOSS</i>	Financial loss	Dummy variable = one if the firm reports a loss and zero otherwise.
<i>ROA</i>	Return on Assets	Ratio of operating income to total assets
<i>TOBIN</i>	Tobin's Q	Book value of assets minus book value of equity, plus the market value of equity, scaled by the book value of assets.
<i>CROSS</i>	Cross listing	Firms simultaneously listed in France and the USA.
<i>F_SIZE</i>	Firm size	Natural logarithm of the firm's total assets.
<i>INDUSTRY</i>	Industry	A binary variable coded one if the company belongs to the sector in question and zero otherwise. The industry classification is based on the Industry Classification Benchmark developed in January 2005 by Dow Jones and FTSE, and used by Euronext since 2006.

<sup>27</sup> Variables from Thomson One are winsorized at the 0.01 and 0.99 levels

## **5 Empirical results**

### *5.1 Descriptive statistics*

Table 2.2 presents the descriptive statistics of the variables used in the analysis to test our hypotheses. Overall, the value of discretionary accruals ranges from -0.223 to 0.336 with mean of -0.002, and mean absolute discretionary accruals (our dependent variable) is 0.041. It can be noted that gender-diverse engagement partners (*GENDER\_AP*) audited 20.1% of the firm-year observations, which is slightly higher than reported in prior French sample-based studies (Dambrin & Lambert, 2008; Nekhili et al., 2018). The variable *GENDER\_BIG* indicate that 16% of the firm-year observations are audited by gender-diverse engagement partners from Big 4 audit firms. Our measure of audit firm size (*BIG*) indicates that on average client firms are audited by more than one Big audit firms (1.40). Specifically, 50% of firm-years are audited by *ONEBIG*, 44.7% firm-years are audited by *TWOBIG* auditors and less than 5 percent of firm-years are audited by *ZEROBIG* auditors. Similar statistics are reported by Bennouri et al. (2015) in analyzing firms in the SBF 120 index. On average client firms have 3.77 directors on their audit committee (*AUDCOM\_SIZE*), in which 67.32% of members are independent directors (*AUDCOM\_IND*) and 18.46% firm-years have women as members of the audit committee (*AUDCOM\_DIV*). The mean value of *REC&INV* and *FOR\_ASSET* is 14.26% and 21.01%, respectively. On average, client firms spend 2.70 percent of their sales proceeds on Research and Development (*R&D*). The proportion of debt financing (*LEV*) is 24.49%, while 13.43% of firms reported incidence of financial loss. *ROA* across sample firms is (mean) 4.61 percent and sample firms have Tobin's q (*TOBIN*) just above 1.20. The cross-listing of our sample firms in the U.S is less than 25%. Mean firm size (*F\_SIZE*) measured by total assets is €18.83

billion and varied from a minimum of €10.1 billion to a maximum of €27.9 billion. We use the log of total assets in our multivariate analysis. 65.79% of firm-year observations are audited by at least one industry specialist audit firm (*SPEC\_AF*) and mean audit firm tenure (*TENURE\_AF*) is almost 12 years. Audousset-Coulier (2015) reported mean auditor tenure of around nine years for the companies listed on SBF 250 index. With respect to audit partner variables, we find that 7.68 percent of firm-years are audited by at least one industry specialist audit partner (*SPE\_AP*). On average, audit partners in our sample firms have slightly less than 18 years' experience (*CAREER\_AP*) and the mean tenure of joint partners (*TENURE\_AP*) is on average three years. Firm-years audited by public specialist audit partners (*PUBSPEC\_AP*) are 71%, while 61.92% of audit partners have large portfolios of audited assets (*PORTFOLIO\_AP*).

**Table 2.2: Descriptive statistics for entire sample**

Variable	Mean	Standard Deviation	Minimum	Maximum	25th percentile	50th percentile	75th percentile
<i>DA</i>	-0.002	0.070	-0.223	0.336	-0.056	-0.014	0.033
<i>ABS_DA</i>	0.041	0.057	0.001	0.336	0.013	0.022	0.048
<i>POS_DA</i>	0.058	0.076	0.000	0.336	0.017	0.036	0.055
<i>NEG_DA</i>	-0.033	0.041	-0.223	-0.000	-0.035	-0.017	-0.013
<i>ABSNEG_DA</i>	0.033	0.041	0.000	0.223	0.013	0.017	0.034
<i>GENDER_AP (%)</i>	20.15	40.11	0	1	0	0	0
<i>GENDER_BIG (%)</i>	16.03	36.70	1	0	0	0	0
<i>BIG</i>	1.39	0.58	0	2	1	1	2
<i>ZEROBIG (%)</i>	4.95	21.70	0	1	0	0	0
<i>ONEBIG (%)</i>	50.09	50.01	0	1	0	1	1
<i>TWOBIG (%)</i>	44.76	49.74	0	1	0	0	1
<i>AUDCOM_SIZE</i>	3.77	1.09	2	10	3	4	4
<i>AUDCOM_IND (%)</i>	67.32	27.90	0	1	50	66.67	1
<i>AUDCOM_DIV (%)</i>	18.46	23.02	0	1	0	0	33.33
<i>REC&amp;INV (%)</i>	14.26	16.29	0	65.31	0.63	8.35	22.92
<i>FOR_ASSETS (%)</i>	21.01	29.98	0	97.31	0	0	39.23
<i>R&amp;D (%)</i>	2.70	5.60	0	34.63	0	0	3.27
<i>LEV (%)</i>	24.49	14.64	0.10	66.55	14.02	22.98	33.50
<i>LOSS (%)</i>	13.43	34.11	0	1	0	0	0
<i>ROA (%)</i>	4.32	4.60	-13.99	18.67	2.07	4.04	6.46
<i>TOBIN</i>	1.217	1.081	0.219	7.026	0.629	0.892	1.346
<i>CROSS (%)</i>	24.75	43.17	0	1	0	0	0
<i>F_SIZE (Total assets in billions of euros)</i>	18.843	33.004	10.1	27.894	2.064	5.765	23.241
<i>SPEC_AF (%)</i>	65.79	47.45	0	1	0	1	1
<i>TENURE_AF (Number of years)</i>	11.79	6.68	0	38.5	6.5	11	16
<i>SPE_AP (%)</i>	7.68	26.64	0	1	0	0	0
<i>CAREER_AP (Number of years)</i>	17.78	6.33	0	37.5	13	18	22
<i>TENURE_AP (Number of years)</i>	3.15	1.32	0	6.5	2	3	4
<i>PUBSPEC_AP (%)</i>	71.05	45.36	0	1	0	1	1
<i>PORTFOLIO_AP (%)</i>	61.92	48.57	0	1	0	1	1

This table reports descriptive statistics for discretionary accruals, gender-diverse engagement partners and control variables for a sample containing French listed firms of SBF 120 index. All foreign, financial, real estate and firms with missing data are eliminated. The final sample contains unbalanced panel data of 1320 firm-year observations for 97 French firms for the period between 2002 and 2017. All variables are as defined in Table 2.1.

In Table 2.3, we focus on individual characteristics of female and male audit partners and examine their mean differences. We find substantial differences in the personal attributes of male and female partners, including their experience, tenure, expertise, and portfolio. In particular, only 0.52 percent of firm-years are audited by industry specialist female audit partners (*SPE\_AP*) compared to 4.42 percent of firm-years audited by industry specialist male partners. Mean career length (*CAREER\_AP*) of female audit partners is substantially shorter than for male partners (7.94 versus 18.1 years, respectively). Female partners in the U.S. have on average 23 years of experience (Lee et al., 2019) against only 14 years of experience in Belgium (Hardies et al., 2016). Similarly, mean tenure of female audit partners (*TENURE\_AP*) is only 1.59 years against 3.13 years for male engagement partners. In our sample, 26.64% firm-years are audited by female public specialist audit partners, whereas 47.46% of male audit partners are public specialists (*PUBSPEC\_AP*). Finally, 23.35% of female audit partners have portfolios of audited assets higher than median compared to 49.27% of male audit partners, indicating that client firms of female partners are smaller in size. Overall, these statistics show that female audit partners not only have fewer opportunities to be promoted to the partnership structure of audit firms but also face various constraints in developing their professional skills.

**Table 2.3: Mean difference test of individual audit partner characteristics between female and male partners**

<b>Audit partner characteristics</b>	<b>Female partner (n = 266)</b>	<b>Male partner (n = 1054)</b>	<b>t-test</b>
<i>SPE_AP (%)</i>	0.52	4.42	4.434*
<i>CAREER_AP (Number of years)</i>	7.95	18.14	26.543*
<i>TENURE_AP (Number of years)</i>	1.59	3.13	19.121*
<i>PUBSPEC_AP (%)</i>	26.64	47.46	8.963*
<i>PORTFOLIO_AP (%)</i>	23.35	49.27	8.563*

This table reports mean difference test of the following female and male audit partners' attributes: the percentage of audit partners with industry specialization, the average number of years since an audit partner was registered and authorized to sign audit reports, the average number of years with consecutive audit partner and client firm relationship, the percentage of audit partners with public specialization, the proportion of audit partners with portfolio of audited assets greater than median. \* represent significance at the 1 percent level. All variables are as defined in Table 2.1.

Table 2.4 presents the trend of gender-diverse partners and yearly variation in various attributes of joint audit partners and joint audit firms for the whole sample. Gender-diverse engagement partners audit on average 20.13% of firm-year observations, ranging from 11.12% in 2002 to 28.32% in 2017. The percentage of audit engagements with gender-diverse partners sharply increased from 18.93% in 2010 to 30.93% in 2015. It is interesting to note that both audit partner tenure (*TENURE\_AP*) and audit firm tenure (*TENURE\_AF*) increased over the sample period. In France, audit firms are appointed for a fixed period of six years and this can subsequently be renewed. However, since 2006 mandatory rotation of audit partners is required after six years. Audit partner attributes with regard to public specialization (*PUB\_SPEC*) and portfolio of audited assets (*PORTFOLIO\_AP*) also changed over the sample period. The results of the Mann-Kendall test for statistically testing the occurrence of the trend for audit partner and audit firm attributes are also provided in Table 2.4. The reported results disconfirm the null hypothesis of no trend over time and a statistically upward trend is reported for audit partner attributes (*GENDER\_AP*, *TENURE\_AP* and *PORTFOLIO\_AP*) and audit firm tenure (*TENURE\_AF*). Although audit partner career (*CAREER\_AP*), industry specialization (*SPE\_AP*) and audit firm specialization slightly changed over the years, we do not observe any statistically upward or downward trend for these variables.



**Table 2.4 Descriptive statistics by year for the gender-diverse engagement partners, the audit partners and the audit firms attributes**

Year	<i>GENDER_AP</i> (%)	<i>SPEC_AF</i> (%)	<i>TENURE_AF</i> (Number of years)	<i>SPE_AP</i> (%)	<i>CAREER_AP</i> (Number of years)	<i>TENURE_AP</i> (Number of years)	<i>PUBSPEC_AP</i> (%)	<i>PORTFOLIO_AP</i> (%)
2002	11.11	62.96	8.71	8.64	17.25	2.50	62.96	48.15
2003	8.43	66.26	8.80	9.64	17.50	2.78	60.24	53.01
2004	10.34	69.77	9.14	11.49	18.12	3.00	59.77	57.47
2005	11.23	67.04	9.23	10.11	18.13	3.15	57.30	57.30
2006	16.48	64.44	9.46	9.89	17.74	3.25	60.44	60.44
2007	15.62	66.32	10.00	8.33	17.87	2.96	77.89	67.37
2008	17.89	67.02	10.71	7.37	18.97	3.55	75.79	66.31
2009	22.92	67.37	11.55	4.17	17.26	3.04	71.58	65.26
2010	18.55	67.71	11.90	6.18	17.14	3.22	70.83	64.58
2011	22.68	66.67	12.44	5.15	16.98	3.17	73.96	64.58
2012	23.71	65.62	13.09	6.18	17.37	3.28	76.04	63.54
2013	28.86	66.67	13.91	6.18	17.38	3.02	77.08	66.67
2014	27.83	65.62	14.50	7.22	18.20	3.41	80.21	67.71
2015	30.93	64.58	14.91	8.25	17.89	3.29	76.04	65.62
2016	28.87	63.54	15.45	7.22	18.21	3.51	79.17	64.58
2017	28.32	63.91	16.38	7.36	19.24	4.30	79.67	65.13
Total	20.13	65.79	11.79	7.68	17.79	3.15	71.05	61.92
Analysis of variance for mean difference test :								
F-value ( <i>p</i> -value)	3.41 (0.000)*	0.14 (1.000)	16.9 (0.000)*	0.46 (0.964)	0.98 (0.472)	16.83 (0.000)*	2.94 (0.000)*	1.43 (0.117)
Mann–Kendall test:								
Z-value ( <i>p</i> - value):	7.00 (0.000)*	−0.24 (0.810)	15.63 (0.000)*	−1.49 (0.137)	1.07 (0.286)	11.88 (0.000)*	5.70 (0.000)*	3.74 (0.000)*

This table presents descriptive statistics by year for the percentage of audit engagements with gender-diverse engagement partners, the following engagement partners' attributes: the percentage of audit partners with industry specialization, the average number of years since an audit partner was registered and authorized to sign audit reports, the average number of years with consecutive audit partner and client firm relationship, the percentage of audit partners with public specialization, the proportion of audit partners with portfolio of audited assets greater than median, and the following audit firms' attributes: the percentage of audit firms with industry specialization and the number of years with consecutive audit firm and client firm relationship. \* represent significance at the 1 percent levels. All variables are as defined in Table 2.1.

Table 2.5 presents the pairwise matrix of correlations and the variance inflation factor (VIF) for the variables used in our study. Gender-diverse engagement partners (*GENDER\_AP*) appears to correlate negatively with our measures of earnings management (i.e., absolute value of discretionary accruals, positive accruals, absolute value of negative accruals), thus indicating that clients of gender-diver audit partners may be characterized by less earnings management. Overall, all the correlation coefficients remain below the threshold value of 0.6 and the values of the variance inflation factor (VIF) range between 1.10 and 2.12, well below the critical threshold of 10. Therefore, we conclude that there is no serious issue of multicollinearity that may influence our results.

## *5.2 Estimation specification*

Table 2.6 reports system GMM regression estimations for our complete sample for investigating the relationship between gender-diverse engagement partners and earnings management. For the sake of completeness, we also report estimations for pooled OLS and fixed effect models. We proxy earnings management by discretionary accruals and use a performance adjusted Jones Model to estimate discretionary accruals (Kothari et al., 2005). First, we use absolute value of discretionary accruals (*ABS\_DA*) as the dependent variable and examine its relationship with gender-diverse engagement partners (*GENDER\_AP*), our variable of interest. We estimate two models using all the three regression methods. In Model 1, we examine the relationship between gender-diverse engagement partners (*GENDER\_AP*), and absolute discretionary accruals (*ABS\_DA*) by considering client firm and audit firm attributes. In Model 2, we consider various attributes relating to audit partners, in addition to client attributes and audit firm attributes used earlier in Model 1.

**Table 2.5: Pairwise correlation matrix**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	VIF
(1) <i>ABS_DA</i>	1.000												
(2) <i>POS_DA</i>	1.000*	1.000											
(3) <i>NEG_DA</i>	-1.000*	.	1.000										
(4) <i>GENDER_AP</i>	-0.109*	-0.112*	0.112*	1.000									1.13
(5) <i>IFRS</i>	0.230*	0.279*	-0.169*	0.127*	1.000								1.35
(6) <i>BIG</i>	-0.023	-0.046	-0.006	0.033	0.081*	1.000							1.39
(7) <i>ONEBIG</i>	-0.031	-0.023	0.041	0.026	0.028	-0.678*	1.000						1.20
(8) <i>TWOBIG</i>	0.001	-0.017	-0.024	0.006	0.033	0.929*	-0.902*	1.000					1.29
(9) <i>AUDCOM_SIZE</i>	-0.078*	-0.135*	0.014	0.091*	0.110*	0.039	-0.012	0.028	1.000				1.20
(10) <i>AUDCOM_IND</i>	0.075*	0.081	-0.071	-0.002	0.225*	0.087*	-0.114*	0.106*	-0.130*	1.000			1.17
(11) <i>AUDCOM_DIV</i>	0.055	0.096	-0.019	0.140*	0.312*	-0.085*	0.028	-0.061	0.102*	0.119*	1.000		1.26
(12) <i>REC&amp;INV</i>	-0.015	-0.121*	-0.111*	-0.040	-0.285*	-0.050	-0.035	-0.012	-0.120*	-0.028	-0.232*	1.000	1.22
(13) <i>FOR_ASSETS</i>	-0.074*	-0.123*	0.018	-0.087*	-0.247*	-0.057	0.113*	-0.090*	-0.080*	0.018	-0.221*	0.248*	1.24
(14) <i>R&amp;D</i>	0.040	0.004	-0.087	-0.011	0.045	0.050	0.039	0.010	-0.041	0.076*	0.017	0.014	1.15
(15) <i>LEV</i>	0.011	0.065	0.054	-0.020	-0.069*	0.022	0.074*	-0.024	0.056	-0.043	-0.005	-0.178*	1.11
(16) <i>LOSS</i>	0.024	0.022	-0.027	-0.002	-0.054	0.052	-0.054	0.058	0.021	0.046	-0.019	-0.049	1.49
(17) <i>ROA</i>	0.011	0.044	0.033	0.080*	0.004	0.032	0.012	0.012	-0.063	-0.059	-0.059	0.157*	1.88
(18) <i>TOBIN</i>	0.125*	0.207*	-0.038	0.071*	0.017	-0.027	-0.004	-0.014	-0.076*	-0.052	0.067	0.067*	1.55
(19) <i>CROSS</i>	-0.065	-0.090	0.046	0.049	-0.032	0.142*	-0.087*	0.127*	0.140*	0.154*	0.058	-0.101*	1.28
(20) <i>F_SIZE</i>	-0.118*	-0.144*	0.085	0.079*	0.159*	0.373*	-0.187*	0.313*	0.320*	0.071*	0.128*	-0.194*	2.12
(21) <i>SPEC_AF</i>	-0.088*	-0.071	0.111*	-0.055	0.002	0.358*	-0.132*	0.277*	0.015	0.032	-0.026	-0.115*	1.22
(22) <i>TENURE_AF</i>	-0.015	-0.051	-0.030	0.136*	0.251*	0.126*	-0.092*	0.120*	0.105*	0.167*	0.175*	-0.136*	1.20
(23) <i>SPE_AP</i>	-0.035	-0.068	-0.008	-0.061	-0.038	0.175*	-0.145*	0.176*	0.015	0.041	-0.032	-0.065*	1.10
(24) <i>CAREER_AP</i>	0.003	-0.003	-0.012	-0.026	0.028	-0.002	0.021	-0.012	-0.004	0.091*	0.047	0.023	1.26
(25) <i>TENURE_AP</i>	0.011	0.048	0.031	0.075*	0.254*	0.016	0.001	0.008	0.023	0.097*	0.130*	-0.068*	1.18
(26) <i>PUBSPEC_AP</i>	-0.053	-0.041	0.069	0.101*	0.109*	0.298*	-0.137*	0.244*	0.056	0.043	0.078*	-0.075*	1.29
(27) <i>PORTFOLIO_AP</i>	-0.066*	-0.111*	0.017	0.071*	0.104*	0.313*	-0.176*	0.272*	0.220*	0.022	0.117*	-0.115*	1.87

**Table 2.5: Pairwise correlation matrix (continued)**

	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
(28) <i>FOR_ASSETS</i>	1.000													
(29) <i>R&amp;D</i>	0.013	1.000												
(30) <i>LEV</i>	0.063	-0.083*	1.000											
(31) <i>LOSS</i>	0.042	0.084*	0.091*	1.000										
(32) <i>ROA</i>	0.070*	-0.025	-0.069*	-0.465*	1.000									
(33) <i>TOBIN</i>	0.053	0.121*	-0.068*	-0.011	0.381*	1.000								
(34) <i>CROSS</i>	-0.023	0.109*	0.039	0.099*	-0.007	-0.032	1.000							
(35) <i>F_SIZE</i>	-0.090*	-0.093*	0.142*	-0.119*	-0.033	-0.300*	0.322*	1.000						
(36) <i>SPEC_AF</i>	-0.041	-0.093*	0.085*	0.036	-0.025	-0.097*	0.139*	0.254*	1.000					
(37) <i>TENURE_AF</i>	-0.087*	0.007	0.005	-0.006	-0.089*	-0.055	0.022	0.193*	0.126*	1.000				
(38) <i>SPE_AP</i>	0.067*	-0.066*	0.071*	0.075*	-0.045	-0.067*	0.045	0.125*	0.143*	0.099*	1.000			
(39) <i>CAREER_AP</i>	0.035	-0.056	0.041	-0.011	0.073*	-0.049	0.044	0.118*	-0.051	0.062	0.068*	1.000		
(40) <i>TENURE_AP</i>	-0.045	0.017	-0.052	-0.017	0.028	0.025	0.046	0.055	0.005	0.227*	-0.002	0.292*	1.000	
(41) <i>PUBSPEC_AP</i>	-0.004	-0.063	0.004	0.033	0.058	-0.036	0.151*	0.266*	0.189*	0.103*	0.137*	0.204*	0.060	1.000
(42) <i>PORTFOLIO_AP</i>	-0.079*	-0.128*	0.124*	0.020	-0.025	-0.093*	0.302*	0.579*	0.240*	0.125*	0.148*	0.141*	0.045	0.407*

This table reports pairwise correlation matrix and VIF scores of the variables used in our study.

\* represent significance at the 1 percent level. All variables are as defined in Table 2.1.

Table 2.6 reports the results of overall model fit (F-statistics), suggesting that Model 1 and Model 2 are highly significant for each regression estimation (OLS, fixed effect and system GMM). The adjusted  $R^2$  for OLS and fixed effect estimations are 21.88 and 12.86 respectively. Ittonen et al. (2013) report 20% adjusted  $R^2$  using a fixed effect model. However, note that adjusted  $R^2$  is not reported for the system GMM model because it has no statistical significance when the dependent variable is autoregressive (Wooldridge, 2002). With regard to the quality of system GMM estimation, results provided in Table 2.6 report the validity of GMM estimations by testing autocorrelations of endogenous and dependent variables. The Arellano and Bond (1991) tests rule out the null hypothesis of no first-order serial correlation but not the null hypothesis of no second-order serial correlation. These results support our rationale for choosing the system GMM model since this approach performs better only with first-order serial correlation (Roodman, 2009a). Proliferation of instruments is an important issue to be considered when estimating system GMM method. Each explanatory variable in the system GMM model provides a number of instruments associated with lagged values and differences. Instruments may become weak as the number of explanatory variables increases (Roodman, 2009b). We carried out two additional tests to check identification of our system GMM model. First, the Sargan test leads to the rejection of null hypothesis of over-identified model. Second, the Hansen test does not lead to the rejection of the null hypothesis of validity of (exogenous) instruments. Overall, these results support our rationale for choosing the system GMM estimation method.

### *5.3 Testing H1*

Results of Table 2.6 show that the coefficient of gender-diverse engagement partners (*GENDER\_AP*) is significantly and negatively associated with absolute

discretionary accruals (*ABS\_DA*) for each Model 1 estimated using OLS, fixed effect and system GMM estimation methods. In accordance with our expectations, these results suggest gender-diverse engagement partners enhance the quality of audited earnings by reducing the magnitude of absolute discretionary accruals in their client firms. In each Model 2 of Table 2.6, we include a number of attributes relating to audit engagement partners with the aim of mitigating any confounding effect of engagement partner attributes that may be captured by *GENDER\_AP*. Thus, the significant linkage between *GENDER\_AP* and *ABS\_DA* may vanish after the inclusion of audit partner specific attributes. Note that the estimated coefficients on *GENDER\_AP* remain negative and significant in each regression specification even in Model 2. In fact, the coefficient on gender-diverse engagement partners slightly increased after the inclusion of audit partner attributes. Importantly, the magnitude and statistical significance on *GENDER\_AP* are higher under the system GMM estimation method than the combined coefficients on *GENDER\_AP* under the OLS and fixed effect models.

These findings are in accordance with the literature that suggests endogeneity issues cause downward bias for regression estimates (Roberts & Whited, 2013). Likewise, test of model fitness (F-statistics) suggesting that our model displays satisfactory fit, and the tests of identification of system GMM models are in accordance with our expectations. Overall, our results provide evidence to suggest that clients of gender-diverse engagement partners exhibit lower magnitude of absolute discretionary accruals compared to clients of all-male audit partners. Our findings are consistent with Ittonen et al. (2013), who find a negative relationship between the proportion of female to male engagement partners and absolute discretionary accruals for listed firms in Nordic countries, where joint audit is voluntary.

Table 2.6: Regression of the absolute value of discretionary accruals on gender-diverse audit partners (Full sample)

Variables	Predicted sign	OLS				Fixed effect				System GMM			
		Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
		Coef.	t-test	Coef.	t-test	Coef.	t-test	Coef.	t-test	Coef.	t-test	Coef.	t-test
<i>Lag ABS_DA</i>	?									0.124***	7.40	0.262***	10.90
<i>GENDER_AP</i>	-	-0.036***	-4.98	-0.035***	-4.93	-0.031***	-4.14	-0.033***	-4.29	-0.050***	-5.17	-0.073***	-6.77
<i>IFRS</i>	+	0.072***	9.00	0.074***	9.07	0.065***	8.15	0.065***	8.03	0.079***	7.01	0.090***	9.01
<i>AUDCOM_SIZE</i>	-	-0.004	-1.46	-0.004	-1.55	-0.002	-0.54	-0.002	-0.63	0.004	0.54	0.001	0.03
<i>AUDCOM_IND</i>	-	0.002	0.16	0.002	0.23	-0.001	-0.04	0.003	0.21	-0.016	-0.55	0.024*	1.65
<i>AUDCOM_DIV</i>	-	-0.007	-0.50	-0.002	-0.13	-0.049***	-3.24	-0.050***	-3.25	-0.064***	-2.66	-0.011***	-2.55
<i>REC&amp;INV</i>	+	0.001	0.03	0.001	0.08	-0.006	-0.23	-0.006	-0.23	-0.117***	-2.74	0.051***	2.54
<i>FOR_ASSETS</i>	+	-0.010	-1.00	-0.009	-0.94	-0.036***	-3.39	-0.034***	-3.27	-0.015	-1.10	-0.002	-0.20
<i>R&amp;D</i>	+	0.025	0.40	0.021	0.34	-0.348**	-2.40	-0.336**	-2.31	0.030	0.15	0.015	0.28
<i>LEV</i>	-	-0.059***	-2.82	-0.062***	-2.97	-0.077***	-2.60	-0.085***	-2.83	0.012	0.32	-0.019***	-3.68
<i>LOSS</i>	-	-0.010	-1.07	-0.006	-0.65	0.011	1.09	0.012	1.19	0.021	1.45	0.005	0.52
<i>ROA</i>	-	-0.095	-1.16	-0.066	-0.80	0.031	0.30	0.053	0.51	-0.085	-0.63	-0.213***	-2.95
<i>TOBIN</i>	-	0.007**	2.28	0.006**	2.05	-0.001	-0.11	-0.001	-0.16	-0.003	-0.51	0.007*	1.93
<i>CROSS</i>	+	0.012*	1.72	0.014*	1.93	0.055	1.15	0.062	1.30	0.060***	2.74	0.021*	1.90
<i>F_SIZE</i>	-	-0.013***	-5.01	-0.012***	-4.06	-0.001	-0.14	-0.001	-0.02	-0.013	-1.42	0.001	0.25
<i>BIG</i>	-	-0.002	-0.28	-0.001	-0.01	0.015	1.55	0.016	1.63	0.106***	6.04	0.014	1.40
<i>SPEC_AF</i>	-	-0.026***	-4.02	-0.026***	-4.01	-0.036***	-3.34	-0.036***	-3.40	-0.424***	-12.32	-0.095***	-3.81
<i>TENURE_AF</i>	-	-0.006	-1.12	-0.005	-0.90	-0.008	-1.03	-0.005	-0.68	-0.008	-0.39	-0.059***	-4.18
<i>SPE_AP</i>	-			-0.001	-0.12			0.006	0.49			-0.144***	-3.61
<i>CAREER_AP</i>	-			-0.009	-1.09			-0.015*	-1.80			0.006	0.39
<i>TENURE_AP</i>	-			-0.003	-1.38			-0.003	-1.39			-0.017***	-6.80
<i>PUBSPEC_AP</i>	-			-0.016**	-2.26			0.004	0.54			0.055***	3.59
<i>PORTFOLIO_AP</i>	-			-0.001	-0.12			0.003	0.33			-0.046*	-1.82
Intercept	?	0.321***	7.83	0.341***	7.20	0.111	1.14	0.138	1.39	0.301**	2.35	0.209**	1.99
<i>Industry</i>	?		Yes		Yes		No		No		Yes		Yes
Number of obs.			1320		1320		1320		1320		1266		1266
R-squared (%)			21.17		21.88		12.30		12.86				
F (Prob > F)			11.38 ( $p = 0.000$ )		10.13 ( $p = 0.000$ )		9.86 ( $p = 0.000$ )		7.99 ( $p = 0.000$ )		1100.39 ( $p = 0.000$ )		3380.19 ( $p = 0.000$ )
Arellano–Bond test AR(1) ( $z, p$ -value):											-5.90 ( $p = 0.000$ )		-5.85 ( $p = 0.000$ )
Arellano–Bond test AR(2) ( $z, p$ -value):											0.23 ( $p = 0.874$ )		0.80 ( $p = 0.426$ )
Sargan test (Chi-square, $p$ -value):											886.40 ( $p = 0.000$ )		521.20 ( $p = 0.000$ )
Hansen test (Chi-square, $p$ -value):											77.69 ( $p = 0.401$ )		68.94 ( $p = 0.206$ )

This table presents regression estimates of the OLS, the fixed effect, and the system GMM regressions of the absolute value of discretionary accruals on gender-diverse engagement partners. Discretionary accruals are the residuals of the Modified Jones Model adjusted for performance. Analysis is performed using the sample of 97 firms listed on SBF 120 index and an unbalanced panel data of 1320 firm-year observations. \*, \*\*, \*\*\* represent significance at the 10 percent, 5 percent and 1 percent levels, respectively. All variables are as defined in Table 2.1.

As discussed above, regression estimates of the system GMM model explain more variation in our dependent variable (*ABS\_DA*) in terms of magnitude and significance of estimated coefficients. Therefore, for brevity, we only discuss the results of control variables obtained using system GMM regression models in Table 2.6. Consistently with Jeanjean and Stolowy (2008), our results show that mandatory introduction of IFRS intensified the pervasiveness of earnings management in France. Overall, the coefficient on audit committee size *AUDCOM\_SIZE* and audit committee independence (*AUDCOM\_IND*) is negative and statistically non-significant in Model 1. However, the coefficient of *AUDCOM\_IND* becomes positive and significant when engagement partner attributes are included in Model 2. Audit committee diversity (*AUDCOM\_DIV*) is negatively associated with earnings management, implying that the presence of female directors on the audit committee curbs earnings management. The linkage between inventory and receivables and earnings management depends on whether or not we control for engagement partner attributes. Coefficients on *FOR\_ASSETS* and *R&D* are negative and statistically non-significant. In accordance with the previous literature (Piot & Janin, 2007; Ittonen et al., 2013), we find leverage (*LEV*) to be negatively associated with earnings management. We find no linkage between firms reporting negative income (*LOSS*) and earnings management, whereas profitable firms (*ROA*) are less likely to be involved in earnings management (Ittonen et al., 2013; Lang et al., 2006; Lee et al., 2019). Finally, no significance is found for firm size (*F\_SIZE*).

With regard to audit firm attributes, the coefficient of audit firm size (*BIG*) on *ABS\_DA* is positive and significant using system GMM estimation in Model 1, suggesting that clients of Big 4 audit firms have higher absolute discretionary accruals compared to clients of non-Big audit firms. These results are consistent with Gull,



Nekhili, Nagati, and Chtioui (2018), who also apply system GMM estimation using French data. However, the relationship between audit firm size (*BIG*) and absolute discretionary accruals (*ABS\_DA*) becomes non-significant after the inclusion of audit partner attributes in Model 2. As expected, our results show that the presence of an industry specialist audit firm (*SPEC\_AF*) enhances the quality of audited earnings by reducing the likelihood of earnings management (Chi & Chin, 2011; Gul et al., 2009). *TENURE\_AF* is negatively associated with absolute discretionary accruals in Model 2. These findings indicate that audit firms' independence is not influenced by a long auditor-client relationship (Johnson, Khurana, & Reynolds, 2002; Gul et al., 2009).

Model 2 of Table 2.6 reports estimation results after controlling for audit partner attributes. We find industry specialist audit partners (*SPE\_AP*) are negatively associated with absolute value of discretionary accruals (*ABS\_DA*), suggesting that in addition to industry specialization at audit firm level, presence of an industry specialist audit partners also enhances accruals quality (Chi & Chin, 2011). Our measure of audit partner experience (*CAREER\_AP*) is negative and non-significant using system GMM model. These results complement the findings of Lee et al. (2019) and suggest that audit partner experience has no impact on earnings management. Audit partner tenure measures audit partner-client relationship in terms of years, and the coefficient on *TENURE\_AP* is negatively associated with discretionary accruals. We also find a positive and significant coefficient on public specialization of audit partners (*PUBSPEC\_AP*). Finally, we find that audit partners with larger *PORTFOLIO* of audited assets are more likely to curb earnings management for system GMM regression estimates.

So far, we have used absolute discretionary accruals to analyze the extent of earnings management by the audited clients of gender-diverse engagement partners and

all-male engagement partners. In the next stage of our analysis, we study the effects of gender-diverse engagement partners on discretionary accruals by differentiating income-decreasing and income-increasing discretionary accruals. Appropriately, we split firm-year observations on the basis of the sign of the discretionary accruals estimated from the Modified Jones Model. We find 395 observations with income-increasing accruals and 572 observations with income-decreasing accruals. We re-estimate Equation (2.2) using the system GMM regression method with all the control variables. Results reported in Table 2.7 present system GMM regression estimations. Note that the F-statistics are statistically significant. The coefficient of *GENDER\_AP* is significantly and negatively associated with income-increasing accruals (Model 1) and absolute value of negative accruals in Model 2 of Table 2.7.

In accordance with H1, these results suggest that gender-diverse engagement partners enhance the quality of audited earnings by reducing the magnitude of absolute discretionary accruals in their client firms. With regard to the control variables, most of those reported in Table 2.7 have the expected sign and are qualitatively comparable to those reported in Table 2.6.

**Table 2.7: Regression of the positive and the negative discretionary accruals on gender-diverse audit partners (Full sample)**

Variables	Predicted sign	Model 1: Positive discretionary accruals		Model 2: Absolute negative discretionary accruals	
		Coef.	t-test	Coef.	t-test
<i>Lag POS_DA</i>	?	0.357***	15.14		
<i>Lag NEG_DA</i>	?			0.106***	2.82
<i>GENDER_AP</i>	–	–0.108***	–4.15	–0.118***	–6.48
<i>IFRS</i>	+	0.147***	11.33	0.127***	7.68
<i>AUDCOM_SIZE</i>	–	–0.022***	–4.80	–0.004	–1.10
<i>AUDCOM_IND</i>	–	0.026	1.41	–0.018	–0.58
<i>AUDCOM_DIV</i>	–	–0.089***	–5.52	0.056***	2.61
<i>REC&amp;INV</i>	+	–0.069***	–2.73	0.138***	4.54
<i>FOR_ASSETS</i>	+	–0.022***	–2.81	–0.031***	–2.68
<i>R&amp;D</i>	+	–0.059	–0.47	0.189**	2.23
<i>LEV</i>	–	–0.062	–1.20	0.039*	1.79
<i>LOSS</i>	–	–0.029**	–2.30	0.036***	3.40
<i>ROA</i>	–	–0.210**	–2.28	0.419***	2.86
<i>TOBIN</i>	–	0.012**	2.24	–0.019***	–3.43
<i>CROSS</i>	+	0.013	0.80	0.017	1.30
<i>F_SIZE</i>	–	0.006	0.98	0.010**	2.11
<i>BIG</i>	–	0.019	1.38	0.006	0.48
<i>SPEC_AF</i>	–	–0.087***	–4.36	–0.060*	–1.92
<i>TENURE_AF</i>	–	–0.090***	–4.82	0.001	0.03
<i>SPE_AP</i>	–	0.030	1.40	0.024	0.47
<i>CAREER_AP</i>	–	–0.082***	–3.84	–0.097***	–2.96
<i>TENURE_AP</i>	–	–0.017***	–4.15	–0.012***	–4.42
<i>PUBSPEC_AP</i>	–	–0.002	–0.13	–0.082***	–4.80
<i>PORTFOLIO_AP</i>	–	–0.069***	–2.78	0.018	1.11
Intercept	?	0.513***	8.07	0.268***	2.69
Industry (?)		Yes		Yes	
Number of obs.		523		721	
F (Prob > F)		5378.28 ( $p = 0.000$ )		1704.14 ( $p = 0.000$ )	
Arellano–Bond test AR(1) ( $z, p$ -value):		–3.38 ( $p = 0.001$ )		–3.15 ( $p = 0.002$ )	
Arellano–Bond test AR(2) ( $z, p$ -value):		0.49 ( $p = 0.337$ )		0.58 ( $p = 0.561$ )	
Sargan test (Chi–square, $p$ -value):		215.99 ( $p = 0.000$ )		426.07 ( $p = 0.000$ )	
Hansen test (Chi–square, $p$ -value):		47.77 ( $p = 0.373$ )		55.95 ( $p = 0.448$ )	

This table presents estimates of the system GMM regressions of the positive value of discretionary accruals and absolute value of negative discretionary accruals, respectively, on gender-diverse engagement partners. Abnormal discretionary accruals are the residuals of the Modified Jones Model adjusted for performance. Regression analysis is performed using the full sample of 97 French firms listed on SBF 120 index. \*, \*\*, \*\*\* represent significance at the 10 percent, 5 percent and 1 percent levels, respectively. All variables are as defined in Table 2.1.

## 5.4 Testing H2

Our earlier findings suggest that gender-diverse engagement partners constrain earnings management. Moreover, we found that IFRS adoption is positively associated with earnings management. Going further, H2 entails analyzing the effect of gender-diverse engagement partners on absolute discretionary accruals after the switch to IFRS. Hence, we estimate the following model.

$$ABS\_DA = \beta_0 + \beta_1 Lag\ ABS\_DA + \beta_2 GENDER\_AP + \beta_3 IFRS + \beta_4 (GENDER\_AP \times IFRS) + \beta_5 CONTROL + \beta_6 INDUSTRY + \varepsilon \quad (2.3)$$

where  $\varepsilon_{it}$  is the error term, *CONTROL* is a vector of control variables that may differ across client firms, audit firms and audit partners (*BIG*, *AUDCOM\_SIZE*, *AUDCOM\_IND*, *AUDCOM\_DIV*, *REC&INV*, *FOR\_ASSET*, *R&D*, *LEV*, *LOSS*, *ROA*, *TOBIN*, *CROSS*, *F\_SIZE*, *SPEC\_AF*, *TENURE\_AF*, *SPE\_AP*, *CAREER\_AP*, *TENURE\_AP*, *PUBSPEC\_AP*, *PORTFOLIO\_AP*). All these variables are defined in Table 2.1.

To test H2, we estimate the model given in Equation (2.3) using the system GMM regression model. H2 states that the negative relationship between gender-diverse engagement partners and earnings management will be stronger in the post-IFRS adoption period. To examine the marginal difference of gender-diverse engagement partners on earnings management after the switch to IFRS, we conduct a joint test of coefficients on *GENDER\_AP* and *GENDER\_AP*  $\times$  *IFRS* using the difference-in-differences procedure. Results of Model 1 and Model 2 in Table 2.8 show that the impact of IFRS adoption on the magnitude of earnings management is positive and significant. In accordance with Jeanjean and Stolowy (2008), our results show that the post-IFRS period is conducive to more aggressive accounting practices. Outstandingly, results reported in Model 2 of Table 2.8 show that the joint coefficient

on *GENDR\_AP* and *GENDER\_AP* × *IFRS* is negative and statistically significant ( $\beta_2 + \beta_4 = -0.096$ ,  $t = -7.98$ ), suggesting that gender-diverse engagement partners provide higher earnings quality by constraining client management from reporting discretionary accruals opportunistically, thus supporting H2. Gender-diverse engagement partners also better satisfy the required judgment skills in resolving IFRS-driven complexity and better reveal accounting misstatement by firm managers. Moreover, these findings imply that gender-diverse engagement partners foster diverse skills and abilities, which enhance their potential to resolve conflicts and to obtain favorable outcomes in the post-IFRS adoption period. Note in particular that the impact of IFRS adoption on the magnitude of earnings management, in accordance with Jeanjean and Stolowy (2008), remains unchanged and still positive and significant in both Models 1 and 2. These results give support to H2.

**Table 2.8: Regression of the absolute value of discretionary accruals on gender-diverse audit partners and IFRS**

Variables	Predicted sign	Model 1		Model 2	
		<i>GENDER_AP</i>		<i>GENDER_AP</i> × <i>IFRS</i>	
		Coef.	t-test	Coef.	t-test
<i>Lag ABS_DA</i>	?	0.268***	11.52	0.036***	2.75
<i>GENDER_AP</i>	–	–0.070***	–7.56	–0.069*	–1.85
<i>IFRS</i>	+	0.077***	11.23	0.094***	9.63
<i>GENDER_AP</i> × <i>IFRS</i>	–			–0.027	–0.92
<i>AUDCOM_SIZE</i>	–	0.016*	1.68	–0.002	–0.16
<i>AUDCOM_IND</i>	–	0.001	0.28	–0.002	–0.37
<i>AUDCOM_DIV</i>	–	0.024*	1.71	0.027*	1.88
<i>REC&amp;INV</i>	+	–0.004	–0.20	0.007	0.33
<i>FOR_ASSETS</i>	+	–0.054**	–2.53	0.005	0.72
<i>R&amp;D</i>	+	–0.007	–0.71	–0.044**	–2.34
<i>LEV</i>	–	0.034	0.73	0.001	0.03
<i>LOSS</i>	–	–0.023	–0.85	0.023	0.31
<i>ROA</i>	–	0.005	0.49	–0.026	–0.72
<i>TOBIN</i>	–	–0.217***	–3.11	0.005	0.41
<i>CROSS</i>	+	0.007**	2.23	–0.163*	–1.71
<i>F_SIZE</i>	–	0.019*	1.75	0.005	0.91
<i>BIG</i>	–	0.001	0.16	0.021*	1.75
<i>SPEC_AF</i>	–	–0.096***	–4.41	–0.032	–1.16
<i>TENURE_AF</i>	–	–0.063***	–5.08	–0.052***	–3.91
<i>SPE_AP</i>	–	–0.120***	–3.40	–0.211***	–4.50
<i>CAREER_AP</i>	–	0.016	0.98	0.015	0.70
<i>TENURE_AP</i>	–	–0.020***	–7.88	–0.016***	–7.05
<i>PUBSPEC_AP</i>	–	0.036***	2.85	0.095***	7.32
<i>PORTFOLIO_AP</i>	–	–0.040*	–1.72	–0.100***	–2.76
Intercept	?	0.215**	2.13	0.135	1.03
Industry	?	Yes		Yes	
Number of obs.		1266		1266	
F (Prob > F)		493.53 ( $p = 0.000$ )		280.06 ( $p = 0.000$ )	
Arellano–Bond test AR(1) ( $z, p$ -value):		–5.79 ( $p = 0.001$ )		–5.32 ( $p = 0.001$ )	
Arellano–Bond test AR(2) ( $z, p$ -value):		0.95 ( $p = 0.352$ )		–0.59 ( $p = 0.556$ )	
Sargan test (Chi-square, $p$ -value):		523.87 ( $p = 0.000$ )		577.39 ( $p = 0.000$ )	
Hansen test (Chi-square, $p$ -value):		78.44 ( $p = 0.108$ )		77.99 ( $p = 0.105$ )	
Difference-in-difference test : <i>GENDER_AP</i> + ( <i>GENDER_AP</i> × <i>IFRS</i> )				–0.096***	–7.98

This table presents estimates of the system GMM regressions of the absolute value of discretionary accruals on gender-diverse engagement partners and IFRS. Abnormal discretionary accruals are the residuals of the Modified Jones Model adjusted for performance. Analysis is performed using interaction between gender-diverse audit partners and IFRS for the full sample of 97 French firms listed on SBF 120 index. For examining the marginal difference of gender-diverse engagement partners on earnings management after the switch to IFRS, we conduct a joint test of coefficients on gender-diverse engagement partners and the interaction between gender-diverse audit partners and IFRS by using difference-in-differences procedure. \*, \*\*, \*\*\* represent significance at the 10 percent, 5 percent and 1 percent levels, respectively. All variables are as defined in Table 2.1.

## **6 Additional analyses**

### *6.1 Selection concerns regarding client-engagement partner alignment*

Consistently with the selection problem highlighted by the analysis at audit firm level, the partner-client matching process may also be non-random (Lennox & Wu, 2018). While assigning engagement partners to clients, audit firms consider various factors, including client needs and partner skills and abilities. Similarly, the role of audit partners is also important in the partner-client matching process, because audit partners directly negotiate with their audited clients with regard to various matters including audit fees and financial reporting issues. In addition, client firms may have certain preferences regarding gender balance or gender diversity and strategically select gender-diverse engagement partners (Bitbol-Saba & Dambrin, 2019). Thus, we use the mean difference test between the audit clients of gender-diverse audit partners (*GENDER-AP*) and all-male audit partners to examine any structural differences between the two subsamples.

Table 2.9 presents mean difference tests between the audited clients of gender-diverse engagement partners (*GENDER-AP*) and audited clients of all-male engagement partners for our full sample as well as for the matched sample. First, the results exhibit significant mean differences at 1 percent and 5 percent between the client characteristics of gender-diverse engagement partners and all-male engagement partners. Firms audited by *GENDER-AP* show a significantly lower magnitude of absolute discretionary accruals (*ABS-DA*). Client firms of gender-diverse engagement partners have large audit committees (*AUDCOM-SIZE*) along with more gender-diverse audit committee members (*AUDCOM-DIV*).

**Table 2.9: Mean difference test between firm-years audited by gender-diverse audit partners and firm-years audited by two male audit partners for entire and matched samples**

Variable	Entire Sample			Matched Sample		
	Firms audited by gender-diverse audit partners ( <i>n</i> = 266)	Firms audited by two male audit partners ( <i>n</i> = 1056)	t-value	Treatment group ( <i>n</i> = 252)	Control group ( <i>n</i> = 252)	t-value
<i>ABS_DA</i>	0.063	0.094	-4.32***	0.064	0.097	-4.20***
<i>AUDCOM_SIZE</i> <sup>a</sup>	3.99	3.73	3.36***	3.98	4.00	-0.15
<i>AUDCOM_IND</i> (%)	69.11	68.11	0.55	69.03	71.56	-1.14
<i>AUDCOM_DIV</i> (%)	26.21	16.34	6.31***	25.45	24.97	0.22
<i>REC&amp;INV</i> (%)	12.86	14.70	-1.60	12.99	11.44	1.00
<i>FOR_ASSETS</i> (%)	17.10	23.58	-3.03***	17.17	17.97	-0.31
<i>R&amp;D</i> (%)	2.75	2.56	0.54	2.79	2.86	-0.16
<i>LEV</i> (%)	23.05	24.36	-1.36	23.094	23.53	-0.34
<i>LOSS</i> (%)	13.79	12.78	0.44	13.492	9.92	1.25
<i>ROA</i> (%)	4.87	4.31	1.86*	4.78	4.67	0.30
<i>TOBIN</i>	1.322	1.182	1.91*	1.308	1.184	1.24
<i>CROSS</i> (%)	31.80	26.03	1.87*	30.95	31.35	-0.10
<i>F_SIZE</i> (Total assets in billions of euros) <sup>a</sup>	19.180	19.735	-0.24	19.387	19.807	-0.47
<i>BIG</i>	1.459	1.447	0.31	1.464	1.488	-0.50
<i>SPEC_AF</i> (%)	59.00	69.16	-3.13***	60.71	61.51	-0.18
<i>TENURE_AF</i> (number of years) <sup>a</sup>	2.64	2.41	6.19***	2.64	2.64	-0.03
<i>SPE_AP</i> (%)	5.36	9.99	-2.33**	5.56	7.14	-0.73
<i>CAREER_AP</i> (number of years) <sup>a</sup>	2.83	2.90	-3.03***	2.84	2.81	0.69
<i>TENURE_AP</i> (number of years) <sup>a</sup>	3.43	3.19	2.56***	3.42	3.37	0.47
<i>PUBSPEC_AP</i> (%)	82.37	73.68	2.93***	82.14	81.35	0.23
<i>PORTFOLIO_AP</i> (%)	70.88	64.36	1.99**	71.43	75.00	-0.90

This table reports the mean difference between firm-years audited by gender-diverse engagement partners and firm-years audited by two male engagement partners before and after matching for discretionary accruals and control variables for a sample of French firms listed on SBF 120 index (1320 firm-year observations for 97 French firms for the period between 2002 and 2017). Propensity score matching of Rosenbaum and Rubin (1983) yields a matched sample consisting of 504 cases: 252 treatment cases (firm-years with gender-diverse audit engagement partners) and 252 comparison cases (firm-years with two male audit engagement partners). All variables are as defined in Table 2.1. \*, \*\*, \*\*\* represent significance at 10 percent, 5 percent and 1 percent levels, respectively. <sup>a</sup> t-tests are based on natural logarithm-transformed values.



In accordance with Lee et al. (2019), these results suggest that gender-diverse audit committees are more likely to have gender-diverse partners, indicating that client firms have some influence on the selection of partners. Client firms of gender-diverse engagement partners have significantly less foreign assets (*FOR\_ASSET*). Similarly, clients of gender-diverse engagement partners are more profitable (*ROA*), have a higher Tobin's q (*TOBIN*) and are more cross-listed (*CROSS*) in the U.S. With regard to audit partner characteristics, client firms that appoint an industry specialist audit firm (*SPEC\_AF*) more often have all-male engagement partners. Clients of gender-diverse engagement partners have a longer relationship with their audit firms (*TENURE\_AF*). When client firms appoint an industry specialist audit partner (*SPE\_AP*), they are more likely to be audited by all-male audit partners. Gender-diverse engagement partners are generally less experienced (*CAREER\_AP*) than all-male engagement partners. On average, clients of gender-diverse engagement partners have a longer relationship with their audit partners (*TENURE\_AP*) than all-male engagement partners. Finally, gender-diverse engagement partners are more likely to be public specialists (*PUBSPEC\_AP*) and their portfolio of audited assets (*PORTFOLIO\_AP*) is higher than all-male engagement partners.

## *6.2 Propensity score matching and re-estimating system GMM regression*

Substantial differences in client firm characteristics between different gender-diverse engagement partners and all-male engagement partners are reported in Table 2.9. A direct comparison of earnings management between the clients of gender-diverse and same-gender audit partners would be less informative because earnings management might be influenced by dissimilarities in the characteristics of client firms. We implement the propensity score matching (PSM) technique to counter concerns of selection bias arising from observable client firm characteristics, as highlighted above

(Rosenbaum & Rubin, 1983). This approach involves two stages. We first generate propensity scores by estimating a logit model that predicts whether client firms appoint gender-diverse engagement partners. The propensity scores represent the probability of appointing gender-diverse engagement partners given a vector of client firm characteristics. After obtaining the propensity scores, we match audited clients of gender-diverse engagement partners (treatment group) with audited clients of same-gender engagement partners (control group). Using sampling method without replacement and caliper distance of 1 percent, we find 252 matched observations for a total matched sample of 504 firm-year observations. After matching, results reported in Table 2.9 show that no significant differences exist between the clients of gender-diverse engagement partners and all-male engagement partners.

We re-estimate the model given in Equation (2.3) using system GMM regression on the PSM sample to study the effect of gender-diverse engagement partners and IFRS on absolute discretionary accruals (*ABS\_DA*). Results reported in Model 1 and Model 2 of

Table 2.10 are in accordance with our H1 and H2. The regression estimates of PSM sample are qualitatively similar to the regression estimates of our full sample. These findings suggest that our results are not influenced by selection bias and are not attributable to dissimilarities in the characteristics between the audit clients of gender-diverse and same-gender audit partners.

**Table 2.10: Regression of the absolute value of discretionary accruals on gender-diverse audit partners and IFRS (PSM sample)**

Variables	Predicted sign	Model 1		Model 2	
		<i>GENDER_AP</i>	<i>GENDER_AP</i> × <i>IFRS</i>	<i>GENDER_AP</i>	<i>GENDER_AP</i> × <i>IFRS</i>
		Coef.	t-test	Coef.	t-test
<i>Lag ABS_DA</i>	?	0.216***	11.76	0.198***	6.78
<i>GENDER_AP</i>	–	–0.071***	–8.78	–0.062***	–2.90
<i>IFRS</i>	+	0.063***	9.56	0.094***	4.30
<i>GENDER_AP</i> × <i>IFRS</i>	–			–0.055**	–2.25
<i>AUDCOM_SIZE</i>	–	–0.006**	–2.43	–0.007*	–1.85
<i>AUDCOM_IND</i>	–	–0.047***	–3.82	–0.068***	–3.95
<i>AUDCOM_DIV</i>	–	0.005	0.36	–0.054***	–3.40
<i>REC&amp;INV</i>	+	0.052**	2.47	–0.040***	–5.86
<i>FOR_ASSETS</i>	+	–0.003	–0.28	0.024	1.17
<i>R&amp;D</i>	+	0.271***	2.61	–0.027**	–2.37
<i>LEV</i>	–	0.026	1.31	–0.370***	–3.66
<i>LOSS</i>	–	0.010	1.01	–0.135***	–4.79
<i>ROA</i>	–	0.358***	3.49	–0.057***	–3.80
<i>TOBIN</i>	–	0.003	0.85	–0.997***	–6.67
<i>CROSS</i>	+	0.022**	2.47	0.028***	6.49
<i>F_SIZE</i>	–	0.015***	2.68	0.014	1.25
<i>BIG</i>	–	0.017**	2.23	0.018	1.40
<i>SPEC_AF</i>	–	–0.066***	–3.87	0.024	1.44
<i>TENURE_AF</i>	–	0.088***	5.73	–0.093***	–4.51
<i>SPE_AP</i>	–	0.095***	6.74	0.008	0.34
<i>CAREER_AP</i>	–	–0.052**	–2.42	0.048***	2.77
<i>TENURE_AP</i>	–	–0.013***	–7.15	–0.030***	–9.04
<i>PUBSPEC_AP</i>	–	–0.053***	–2.55	–0.116***	–4.70
<i>PORTFOLIO_AP</i>	–	–0.038***	–2.94	0.194***	6.81
Intercept	?	–0.125	–1.41	0.988***	9.06
Industry	?	Yes		Yes	
Number of obs.		474		474	
F (Prob > F)		2742.94 ( <i>p</i> = 0.000)		5663.34 ( <i>p</i> = 0.000)	
Arellano–Bond test AR(1) ( <i>z</i> , <i>p</i> –value):		–3.43 ( <i>p</i> = 0.001)		–3.86 ( <i>p</i> = 0.001)	
Arellano–Bond test AR(2) ( <i>z</i> , <i>p</i> –value):		0.55 ( <i>p</i> = 0.579)		–0.93 ( <i>p</i> = 0.353)	
Sargan test (Chi–square, <i>p</i> –value):		172.16 ( <i>p</i> = 0.000)		250.37 ( <i>p</i> = 0.000)	
Hansen test (Chi–square, <i>p</i> –value):		55.26 ( <i>p</i> = 0.250)		63.89 ( <i>p</i> = 0.190)	
Difference-in-difference test : <i>GENDER_AP</i> + ( <i>GENDER_AP</i> × <i>IFRS</i> )				–0.117***	–7.54

This table presents estimates of the system GMM regressions of the absolute value of discretionary accruals on gender-diverse engagement partners using a sample of PSM sample. Abnormal discretionary accruals are the residuals of the Modified Jones Model adjusted for performance. Propensity score matching procedure of Rosenbaum and Rubin (1983) is used to match firm-years with gender-diverse audit engagement partners (treatment group) and firm-years with two male audit engagement partners (control group). The matching procedure yields a sample consisting of 504 cases: 252 treatment cases and 252 comparison cases. \*, \*\*, \*\*\* represent significance at the 10 percent, 5 percent and 1 percent levels, respectively. All variables are as defined in Table 2.1.

### *6.3 Does the composition of joint audit firms matter?*

In a joint audit setting, the composition of joint audit firms may include Big/Big, Big/non-Big, or non-Big/non-Big audit firms. The joint audit literature suggests that the choice of different combinations of joint audit firms has implications not only with regard to the distribution of audit task but also to audit outcomes (Ratzinger-Sakel et al., 2013). In terms of earnings quality, prior studies in the French context report no systematic relationship between the choice of brand name audit firms and absolute abnormal accruals (Piot & Janin, 2007; Francis et al., 2009). Our descriptive statistics show that 50% of our sample firm-years are audited by at least one Big 4 audit firm along with a non-Big audit firm, and 44% of firms are audited by two Big 4 audit firms. In Equation (2.4), we examine whether combinations of joint audit firms (i.e., Big/Big or Big/non-Big) and gender-diverse audit partners jointly affects earnings quality.

$$\begin{aligned} ABS\_DA = \beta_0 &+ \beta_1 Lag\_ABS\_DA + \beta_2 GENDER\_AP + \beta_3 IFRS + \beta_4 TWOBIG \\ &+ \beta_5 (GENDER\_AP \times TWOBIG) + \beta_6 CONTROL + \beta_7 INDUSTRY \\ &+ \mathcal{E} \end{aligned} \tag{2.4}$$

where  $\mathcal{E}$  is the error term, *CONTROL* is a vector of control variables that may differ across client firms, audit firms and audit partners (*AUDCOM\_SIZE*, *AUDCOM\_IND*, *AUDCOM\_DIV*, *REC&INV*, *FOR\_ASSET*, *R&D*, *LEV*, *LOSS*, *ROA*, *TOBIN*, *CROSS*, *F\_SIZE*, *SPEC\_AF*, *TENURE\_AF*, *SPE\_AP*, *CAREER\_AP*, *TENURE\_AP*, *PUBSPEC\_AP*, *PORTFOLIO\_AP*). Definition of each variable is given in Table 2.1.

Equation (2.4) is estimated using the system GMM regression method on the sample of PSM matched observations to examine the effect of gender-diverse engagement partners and of Big-Big joint auditor pair composition on absolute discretionary accruals. Results reported in Model 1 of Table 2.11 show that the

coefficient on gender-diverse engagement partners remains qualitatively the same ( $\beta_2 = -0.64$ ,  $t = -4.53$ ) and the coefficient of *TWOBIG* is negative but non-significant ( $\beta_3 = -0.19$ ,  $t = -1.62$ ). To examine the marginal impact of gender-diverse engagement partners and Big/Big audit firms on earnings management, we include interaction between gender-diverse engagement partners and two Big 4 audit firms (*GENDER\_AP*  $\times$  *TWOBIG*) in Model 2 and conduct a joint test of the sum of the coefficients on *GENDER\_AP* and *GENDER\_AP*  $\times$  *TWOBIG* using the difference-in-differences procedure.<sup>28</sup> Results reported in Model 2 of Table 2.11 show that the joint coefficient is negative and significant ( $\beta_2 + \beta_5 = -0.065$ ,  $t = -2.21$ ). However, the impact of *GENDER\_AP* on earnings management remains qualitatively unchanged, compared to the one observed in Model 1. These findings suggest that gender-composition of audit engagement partners matters more in detecting and curtailing discretionary accounting practices than the paired audit firms in which they are partners.

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<sup>28</sup> We exclude firm-years audited by two non-Big audit firms due to the smaller number of observations.

**Table 2.11: Regression of the absolute value of discretionary accruals on gender-diverse engagement partners and TWOBIG (PSM sample)**

Variables	Predicted sign	Model 1		Model 2	
		<i>GENDER_AP</i>	<i>GENDER_AP</i> × <i>TWOBIG</i>	Coef.	t-test
<i>Lag ABS_DA</i>	?	0.151***	4.94	0.065***	3.04
<i>GENDER_AP</i>	–	–0.064***	–4.53	–0.258***	–7.39
<i>IFRS</i>	+	0.084***	9.48	0.131***	7.88
<i>TWOBIG</i>	–	–0.019	–1.62	–0.107***	–3.51
<i>GENDER_AP</i> × <i>TWOBIG</i>	–			0.193***	3.69
<i>AUDCOM_SIZE</i>	–	–0.014***	–3.32	0.005	0.96
<i>AUDCOM_IND</i>	–	–0.017	–0.91	–0.094***	–3.09
<i>AUDCOM_DIV</i>	–	0.081***	4.59	–0.012	–0.53
<i>REC&amp;INV</i>	+	0.024***	3.08	–0.030***	–3.81
<i>FOR_ASSETS</i>	+	0.084**	2.08	0.127**	2.36
<i>R&amp;D</i>	+	–0.002	–0.11	–0.013	–0.64
<i>LEV</i>	–	–0.127	–1.08	–0.043	–0.24
<i>LOSS</i>	–	–0.062*	–1.67	–0.155***	–3.59
<i>ROA</i>	–	0.068***	4.18	–0.036**	–2.08
<i>TOBIN</i>	–	0.483***	2.98	–0.668***	–5.32
<i>CROSS</i>	+	0.004	0.78	0.035***	4.32
<i>F_SIZE</i>	–	0.005	0.38	0.013	0.54
<i>SPEC_AF</i>	–	0.102***	5.29	0.109***	3.12
<i>TENURE_AF</i>	–	0.053***	3.28	–0.078***	–3.43
<i>SPE_AP</i>	–	0.096**	2.33	0.199***	3.41
<i>CAREER_AP</i>	–	–0.068***	–3.67	0.050*	1.71
<i>TENURE_AP</i>	–	0.001	0.65	–0.019***	–4.75
<i>PUBSPEC_AP</i>	–	–0.076***	–3.84	–0.053**	–2.45
<i>PORTFOLIO_AP</i>	–	–0.152***	–4.37	0.074***	2.77
Intercept	?	–0.150	–1.04	0.726***	6.28
Industry	?	Yes		Yes	
Number of obs.		474		474	
F (Prob > F)		9172.34 ( <i>p</i> = 0.000)		3281.77 ( <i>p</i> = 0.000)	
Arellano–Bond test AR(1) ( <i>z</i> , <i>p</i> –value):		–3.43 ( <i>p</i> = 0.001)		–4.13 ( <i>p</i> = 0.001)	
Arellano–Bond test AR(2) ( <i>z</i> , <i>p</i> –value):		0.55 ( <i>p</i> = 0.579)		–0.34 ( <i>p</i> = 0.733)	
Sargan test (Chi–square, <i>p</i> –value):		172.16 ( <i>p</i> = 0.000)		240.53 ( <i>p</i> = 0.000)	
Hansen test (Chi–square, <i>p</i> –value):		55.26 ( <i>p</i> = 0.250)		59.08 ( <i>p</i> = 0.204)	
Joint test: <i>GENDER_AP</i> + ( <i>GENDER_AP</i> × <i>TWOBIG</i> )				–0.065**	–2.21

This table presents estimates of the system GMM regressions of the absolute value of discretionary accruals on gender-diverse engagement partners and two Big 4 audit firms using a sample of PSM sample. Abnormal discretionary accruals are the residuals of the Modified Jones Model adjusted for performance. Propensity score matching procedure of Rosenbaum and Rubin (1983) is used to match firm-years with gender-diverse audit engagement partners (treatment group) and firm-years with two male audit engagement partners (control group). The matching procedure yields a sample consisting of 504 cases: 252 treatment cases and 252 comparison cases. \*, \*\*, \*\*\* represent significance at the 10 percent, 5 percent and 1 percent levels, respectively. All variables are as defined in Table 2.1.

#### *6.4 Does collaboration between gender-diverse engagement partners' matter?*

In the case of gender-diverse engagement partners, every company that has a female engagement partner also has a male engagement partner. Therefore, the impact of our main variable (*GENDER\_AP*) on earnings management may be driven either by the presence of a female engagement partner or by effective collaboration between gender-diverse engagement partners. One problem generally stressed in a joint audit setting is that competition among audit firms may reduce cooperation and productive exchange of information due to their need to protect business secrets. Indeed, suboptimal collaboration may undermine audit quality in a joint audit setting (Ittonen & Trønnes, 2015; Lobo, Paugam, Zhang, & Casta, 2017; Zerni, Haapamäki, Järvinen, & Niemi, 2012). In this case, interaction within the joint partner pair becomes the keystone for effective collaboration between competing audit firms. Because interaction between gender-diverse engagement partners is unobservable, one approach is to consider the two-stage residual inclusion estimation.<sup>29</sup> From Equation (2.2), we collect the absolute value of the residuals, which represent the estimation errors in the absolute discretionary accruals that are associated neither simply with the presence of a female partner in the joint partners' pair composition nor with the control variables considered in the model. These residuals are then considered as a proxy for the unobservable variable, namely male-female partners' interaction (*MF\_INTERACT*). We then use the absolute residuals from the first stage as additional regressors in the second stage estimation to test the impact of male-female partners' interaction on earnings management.

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<sup>29</sup> Many examples of the use of the two-stage residual inclusion estimation can be founded in accounting studies to measure abnormal audit fees. For Beatty (1989), the residuals extracted from their first regression are used as a proxy for the reputation capital of the auditor. For Asthana and Boone (2012), the residual audit fee reflects abnormal audit fees associated with both client bargaining power and economic bonding.



$$\begin{aligned} ABS\_DA = \beta_0 &+ \beta_1 Lag\ ABS\_DA + \beta_2 GENDER\_AP + \beta_3 MF\_INTERACT \\ &+ \beta_4 IFRS + \beta_5 CONTROL + \beta_6 INDUSTRY + \mathcal{E} \end{aligned} \quad (5)$$

where  $\mathcal{E}$  is the error term, *CONTROL* is a vector of control variables that may differ across client firms, audit firms and audit partners (*AUDCOM\_SIZE*, *AUDCOM\_IND*, *AUDCOM\_DIV*, *REC&INV*, *FOR\_ASSET*, *R&D*, *LEV*, *LOSS*, *ROA*, *TOBIN*, *CROSS*, *F\_SIZE*, *SPEC\_AF*, *TENURE\_AF*, *SPE\_AP*, *CAREER\_AP*, *TENURE\_AP*, *PUBSPEC\_AP*, *PORTFOLIO\_AP*). Definition of each variable is given in Table 2.1.

The results of Model 1 in Table 2.12 show that the impact of the presence of a female partner (*GENDER\_AP*) turns out to be statistically non-significant ( $\beta_2 = 0.003$ ,  $t = 0.038$ ). However, the impact of male-female partners' interaction (*MF\_INTERACT*) on *ABS\_DA* is strongly negative and highly significant ( $\beta_3 = -1.975$ ,  $t = -24.84$ ). These results suggest that the variation in the level of earnings management (between gender-diverse partners and all-male partners) stems from effective collaboration between the male-female partners rather than simply from the presence of a female partner. The effectiveness of diverse teams in the accomplishment of goals (Thomas & Ely, 1996) and risk aversion of mixed groups as compared to non-mixed groups (Latimer, 1998) are arguments that appeal to a more collaborative effort for the male-female partner pair (i.e., gender-diverse engagement partners). Therefore, in accordance with our argument, we find that gender-diverse engagement partners promote effective monitoring and collaborative behavior in detection and prevention of aggressive earnings management in their audited clients.

**Table 2.12: Regression of the absolute value of discretionary accruals on gender-diverse engagement partners and the male-female interaction (PSM sample)**

Variables	Predicted sign	Coef.	t-test
<i>Lag ABS_DA</i>	?	0.192***	5.10
<i>GENDER_AP</i>	–	0.003	0.38
<i>MF_INTERACT</i>	–	–1.975***	–24.84
<i>IFRS</i>	+	–0.026**	–1.89
<i>AUDCOM_SIZE</i>	–	–0.008**	–2.26
<i>AUDCOM_IND</i>	–	–0.013	–0.74
<i>AUDCOM_DIV</i>	–	–0.021	–1.21
<i>REC&amp;INV</i>	+	0.045**	2.42
<i>FOR_ASSETS</i>	+	–0.033***	–3.63
<i>R&amp;D</i>	+	0.213**	1.98
<i>LEV</i>	–	0.036	1.32
<i>LOSS</i>	–	–0.016	–1.46
<i>ROA</i>	–	0.055	0.41
<i>TOBIN</i>	–	0.004	1.11
<i>CROSS</i>	+	0.009	0.84
<i>F_SIZE</i>	–	–0.012	–1.44
<i>BIG</i>	–	–0.006	–0.74
<i>SPEC_AF</i>	–	–0.014	–0.54
<i>TENURE_AF</i>	–	0.062***	2.89
<i>SPE_AP</i>	–	0.206***	9.05
<i>CAREER_AP</i>	–	–0.064***	–5.17
<i>TENURE_AP</i>	–	0.011***	4.47
<i>PUBSPEC_AP</i>	–	0.007	0.41
<i>PORTFOLIO_AP</i>	–	0.060*	1.91
Intercept	?	2.102***	14.14
Industry	?		Yes
Number of obs.			474
F (Prob > F)		3978.78 ( $p = 0.000$ )	
Arellano–Bond test AR(1) ( $z, p$ -value):		–3.52 ( $p = 0.000$ )	
Arellano–Bond test AR(2) ( $z, p$ -value):		–1.12 ( $p = 0.264$ )	
Sargan test (Chi-square, $p$ -value):		120.35 ( $p = 0.000$ )	
Hansen test (Chi-square, $p$ -value):		38.86 ( $p = 0.573$ )	

This table presents estimates of the system GMM regression of the absolute value of discretionary accruals on gender-diverse engagement partners and male-female interaction using a sample of PSM sample. Abnormal discretionary accruals are the residuals of the Modified Jones Model adjusted for performance. Propensity score matching procedure of Rosenbaum and Rubin (1983) is used to match firm-years with gender-diverse audit engagement partners (treatment group) and firm-years with two male audit engagement partners (control group). The matching procedure yields a sample consisting of 504 cases: 252 treatment cases and 252 comparison cases. \*, \*\*, \*\*\* represent significance at the 10 percent, 5 percent and 1 percent levels, respectively. All variables are as defined in Table 2.1.

### *6.5 Audit partners switch effect*

In order to alleviate concerns that the negative relationship between gender-diverse engagement partners and earnings management is not driven by potentially unobservable omitted variables, we perform engagement partner switch analyses. We create a dummy variable *SWITCH* to identify all possible individual engagement partner switches (i.e., male to male, male to female and female to female). We then use the mean difference test between firm-years with engagement partner switches and firm-years without partner switches to examine structural differences between the two subsamples. In untabulated results, we find substantial differences between firm-years with and without partner switches. Therefore, we use the PSM approach as described earlier to match client firms with engagement partner switches (treatment group) with client firms without engagement partner switches (control group) and we find a total matched sample of 580 firm-year observations (i.e., 290 firm-year observations with engagement partner switches and 290 firm-year observations without engagement partner switches). After matching, we re-estimate Equation (2.2) using system GMM regression on the sample of PSM matched observations for engagement partner switches by replacing *GENDER\_AP* with *SWITCH* as our test variable on absolute discretionary accruals (*ABS\_DA*). The results reported in Model 1 of Table 2.13 shows that our variable of interest (*SWITCH*) is positively and significantly associated ( $\beta_2 = 0.044$ ,  $t = 5.46$ ) with *ABS\_DA*, suggesting a higher likelihood of earnings manipulation after an engagement partner is changed.

We create two more dummy variables by identifying switches from all-male partners to gender-diverse partners (*MALE\_TO\_GD*) and switches from gender-diverse partner to all-male partners (*GD\_TO\_MALE*). We code *MALE\_TO\_GD* as one if gender-diverse partners are appointed to replace all-male partners and zero otherwise.

The variable *GD\_TO\_MALE* is coded one if all-male audit partners are appointed to replace gender-diverse partners and zero otherwise. If gender-diverse partners reduce earnings management, then their audited clients must exhibit lower discretionary accruals after their appointment to replace all-male audit partners. We separately re-estimate Equation (2.2) using *GD\_TO\_MALE* or *MALE\_TO\_GD* as our variable of interest. The system GMM regression results reported in Table 2.13 show that the coefficient of *MALE\_TO\_GD* is negatively and significantly associated with absolute discretionary accruals (Model 2), thereby suggesting that appointment of gender-diverse engagement partners constrains earnings management. However, the coefficient of *MALE\_TO\_GD* appears non-significant and has no relationship with our dependent variable *ABS\_DA* (Model 3).

Table 2.13: Regression of the absolute value of discretionary accruals on engagement partner switch effect (PSM sample for partner switch)

Variables	Predicted sign	Model 1: SWITCH		Model 2: MALE_to_GD		Model 3: GD_to_MALE	
		Coef.	t-test	Coef.	t-test	Coef.	t-test
Lag ABS_DA	?	0.286***	9.61	0.395***	6.18	0.300***	8.29
SWITCH	?	0.044***	5.46				
MALE_TO_GD	–			–0.051***	–4.48		
GD_TO_MALE	+					0.005	0.56
IFRS	+	0.036***	3.71	0.019	1.33	0.029***	3.34
AUDCOM_SIZE	–	–0.016	–1.33	0.003	0.05	–0.001	–0.26
AUDCOM_IND	–	–0.005	–0.28	0.029	1.22	0.069***	3.69
AUDCOM_DIV	–	–0.033**	–2.06	–0.019	–0.69	–0.015	–0.63
REC&INV	+	–0.054***	–3.04	–0.124***	–3.24	–0.128***	–4.52
FOR_ASSETS	+	–0.020*	–1.78	–0.012	–0.84	–0.019	–1.46
R&D	+	–0.008	–0.09	0.069	0.53	0.081	0.93
LEV	–	–0.018	–0.55	–0.009	–0.21	–0.081***	–2.78
LOSS	–	–0.013	–1.01	–0.027	–1.47	–0.007	–0.57
ROA	–	–0.298**	–2.13	–0.400***	–2.77	–0.210**	–1.89
TOBIN	–	0.019***	4.12	0.014**	2.17	0.006	0.92
CROSS	+	0.039***	2.82	0.018*	1.66	–0.004	–0.59
F_SIZE	–	0.004	0.81	–0.021***	–2.77	–0.027***	–5.25
BIG	–	0.039***	3.39	0.033	1.79	0.015	1.47
SPEC_AF	–	–0.16***	–6.22	–0.120***	–2.66	–0.100***	–3.66
TENURE_AF	–	0.050***	3.50	0.001	0.01	–0.062***	–4.47
SPE_AP	–	–0.078**	–2.13	–0.173***	–3.64	–0.204***	–6.03
CAREER_AP	–	0.065**	2.24	0.135***	4.35	0.045***	3.31
TENURE_AP	–	–0.023***	–4.53	–0.051***	–6.10	–0.028***	–5.64
PUBSPEC_AP	–	0.038*	1.91	0.049	1.44	–0.003	–0.20
PORTFOLIO_AP	–	–0.089***	–3.47	0.019	0.61	0.146***	7.60
Intercept	?	–0.182*	–1.90	0.113	1.16	0.522***	5.71
Industry	?		Yes		Yes		Yes
Number of obs.			544		544		544
F (Prob > F)			8059.45 ( $p = 0.000$ )		1807.76 ( $p = 0.000$ )		2028.78 ( $p = 0.000$ )
Arellano–Bond test AR(1) ( $z, p$ -value):			–4.09 ( $p = 0.000$ )		–4.13 ( $p = 0.000$ )		–3.86 ( $p = 0.000$ )
Arellano–Bond test AR(2) ( $z, p$ -value):			1.07 ( $p = 0.264$ )		0.70 ( $p = 0.486$ )		0.93 ( $p = 0.354$ )
Sargan test (Chi–square, $p$ -value):			112.78 ( $p = 0.000$ )		191.79 ( $p = 0.000$ )		272.10 ( $p = 0.000$ )
Hansen test (Chi–square, $p$ -value):			54.86 ( $p = 0.330$ )		61.02 ( $p = 0.136$ )		66.41 ( $p = 0.140$ )

This table presents estimates of the system GMM regressions of the absolute value of discretionary accruals on gender-diverse engagement partners using a sample of PSM sample for engagement partner switches. Abnormal discretionary accruals are the residuals of the Modified Jones Model adjusted for performance. Propensity score matching procedure of Rosenbaum and Rubin (1983) is used to match firm-years with audit partner switch (treatment group) with firm-years without audit partner switch (control group). The matching procedure yields a sample consisting of 580 cases: 290 treatment cases and 290 comparison cases. \*, \*\*, \*\*\* represent significance at the 10 percent, 5 percent and 1 percent levels, respectively. All variables are as defined in Table 2.1

## **7 Summary and conclusion**

Male and female engagement partners differ in terms of their innate characteristics (e.g., abilities, risk preferences and cognitive style) and these differences have the potential to influence auditors' judgment and decision-making (Chung & Monroe, 1998; Chung & Monroe, 2001; O'Donnell & Johnson, 2001). Archival auditing literature documents somewhat mixed results concerning gender-differentiated audit quality in a single-partner audit setting. Some studies suggest that female audit partners are more likely to enhance the quality of audited earnings and thus audit quality (Hardies et al., 2016; Ittonen et al., 2013; Karjalainen et al., 2018), whereas other studies suggest that female audit partners are associated with lower audit quality (Hossain et al., 2018; Yang et al., 2018) or even that there is no link between auditor gender and audit outcomes (Gul et al., 2013). The mixed results from these studies highlight the importance of considering different institutional settings and auditing environments that may potentially influence audit partner decision-making.

In the French mandatory joint audit setting, firms preparing consolidated financial statements must appoint two different audit firms to jointly audit their financial statements. Therefore, the composition of joint audit partners may include two male, two female, or one male and one female audit engagement partners. We investigate whether gender-diverse engagement partners constrain discretionary accounting practices as compared to all-male engagement partners. We argue that gender-diverse engagement partners possess diverse knowledge, skill and abilities that promote effective monitoring and collaborative behavior in detecting and curtailing excessive earnings management by their audited clients. In addition to the well-known client firm and audit firm attributes, we also control for engagement partner attributes, so that our variable of interest (gender-diverse engagement partners) is not confounded

with other attributes of engagement partners. We mitigate endogeneity concerns by using the system GMM estimation method and report estimates of OLS and fixed effect models for comparability purpose.

Overall, the empirical findings show that gender-diverse engagement partners are associated with smaller discretionary accruals. Given these findings, we then argue that the impact of gender-diverse engagement partners on earnings management should be more pronounced in a complex environment, which is conducive to earnings management practices for French listed firms. Consistently, our results show that the negative association between gender-diverse engagement partners and earnings management is stronger in the post-IFRS adoption period. In additional analyses, we confirm the robustness of these results by using a PSM sample and show that our results are not driven by client-engagement partners' selection bias or by dissimilarities in the characteristics between the audit clients of gender-diverse and same-gender audit partners. In addition, we find that gender-diverse engagement partners provide high-quality audited earnings irrespective of the joint auditor-pair composition with regard to brand name audit firms. This result may be explained by the fact that audit partners may matter more than audit firms with regard to earnings quality, particularly in the French civil law-based legal system, which provides inadequate investor protection. Furthermore, we show that the variation in the level of earnings management stems from male-female auditors' interaction within the joint auditor pair rather than simply from the presence of a female auditor partner. Finally, we find that switching from all-male to gender-diverse audit partners, as compared to switching from gender-diverse to all-male audit partners, leads client firms to be less engaged in earnings management. Taken together, these findings give support to our argument that gender-diverse engagement partners are more likely than all-male engagement partners to promote

effective monitoring and collaborative behavior in detecting and curtailling opportunistic accounting practices.

Our findings contribute to the auditing literature on gender-differentiated audit quality. While prior studies focus on countries with single-partner audit or countries with a voluntary joint audit setting, we address the issue of audit partner gender and earnings management in a mandatory joint audit environment. In addition, we extend the literature on audit partner gender in a joint audit setting by using an output-based measure of audit quality (i.e., discretionary accruals) to complement the findings of Nekhili et al. (2018), who used an input-based measure of audit quality (i.e., audit fees), and document the audit fee premium for gender-diverse engagement partners in a joint audit setting. We also go beyond the tokenism argument and masculine bias in the partnership structure of public accounting firms by shedding light on individual characteristics of female and male engagement partners. Accordingly, we find that female audit partners exhibit less industry specialization, are less experienced, are less tenured in the auditing process for a given client, and have a smaller portfolio of audited assets, compared to male audit partners. This finding confirms the common belief that female auditors not only have fewer opportunities to be promoted within the partnership structure of audit firms but also face several constraints in developing their professional skills. Nevertheless, our study shows that, despite the constraints faced by female partners, they strive to prove their effectiveness and to influence the audit process and audit outcomes in a joint audit setting. An implication for audit practice and theory is that the gender of the lead audit partner may be central for both audit firms and clients in providing value in response to the needs and requirements of society and stakeholders. Probably due to the lower litigation risk faced by audit firms, we found that the gender of audit engagement partners matters more for the assessment



of financial statements quality than the composition of audit firms themselves, and on the basis of which audit partners are assigned to the engagement partnership. Further studies are needed to find out whether, from the client management/directors standpoint, audit partners' assignment takes precedence over the selection of audit firms and whether there are differences in this respect between civil law countries and common law countries.

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## Chapter 3: Looking beyond homophily: Board gender diversity and the choice of gender-diverse audit partners

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### *ABSTRACT*

This study examines whether the gender of corporate board members affects audit partner assignment in the French joint audit setting. We go beyond the theoretical homophily argument and distinguish between female board members on the basis of their position on corporate boards. Using appropriate econometrical procedures to alleviate concerns about endogeneity issues, we first show that board gender diversity positively influences the selection of gender-diverse audit partners. Importantly, we find that the positive influence of board gender diversity is driven by female directors involved in the monitoring function of the board. Conversely, the proportion of female inside directors is negatively associated with the gender of engagement partners. We also find that the aforementioned associations are more pronounced in the period following the gender quota law. Our empirical evidence adds to the understanding of factors affecting the audit partner assignment process.

***Keywords:*** Board gender diversity, Audit partner gender, audit partner selection, joint audit, gender quota law

## Chapitre 3: L'impact de la diversité de genre au sein du conseil d'administration sur la sélection des commissaires aux comptes

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### *RÉSUMÉ*

Cette étude examine la mesure dans laquelle la diversité de genre au sein du conseil d'administration affecte la composition du collège des commissaires aux comptes dans un contexte de co-commissariat, en l'occurrence celui de la France. Le principe d'homophilie postule que divers types d'individus ont implicitement tendance à préférer interagir avec des individus démographiquement similaires. En utilisant des procédures économétriques appropriées pour atténuer les préoccupations concernant les questions d'endogénéité, nous montrons d'abord que le genre est un déterminant important du processus d'appariement client-partenaire. Nous allons au-delà de l'argument théorique de l'homophilie et distinguons les femmes membres du conseil d'administration sur la base de leur rôle joué au sein de ces conseils. Nos résultats suggèrent que les femmes administrateurs ne devraient pas être traitées comme un groupe homogène lors de l'examen du processus de sélection des membres du collège des commissaires aux comptes. En effet, nous montrons que l'effet positif de la présence de femmes au sein des conseils d'administration provient pour l'essentiel de la capacité des femmes administrateurs à exercer un véritable contrôle sur les dirigeants. En effet, seules les femmes administrateurs indépendantes ou membres du comité d'audit semblent favoriser la mixité du genre au sein du collège des commissaires aux comptes. En outre, nous constatons que les associations susmentionnées sont plus prononcées dans la période post-quotas de genre dans les conseils d'administration. Les résultats empiriques apportent un nouveau regard pour mieux comprendre les facteurs qui influencent les décisions de sélection et d'affectation des commissaires aux comptes.

**Mots-clés:** Diversité de genre des conseils d'administration, Genre du commissaire aux comptes, sélection des commissaires aux comptes, co-commissariat, loi sur les quotas de genre dans les conseils d'administration.

## **1 Introduction**

The predominant archival studies on auditor choice examine auditor-client alignment at audit firm level. This literature stream is based on the implicit assumption that all practice offices and audit partners are homogenous groups producing relatively stable audit quality and focus only on audit firm selection/appointment decisions. These studies thus consider multiple audit client characteristics that may potentially influence the likelihood of appointing one audit firm rather than another. For example, auditor choice studies document that audit firm appointments are a function of the client's governance structure (board and audit committee characteristics), agency costs, and client size, complexity and other characteristics (DeFond & Zhang, 2014; Francis, Richard, & Vanstraelen, 2009); Francis & Wilson, 1988; Habib, Bhuiyan, & Rahman, 2019). In addition, these studies generally assume that firms choose a level of audit quality in accordance with their specific needs in relation to satisfying financial statement users. External users often lack the ability to fully assess the appropriateness of auditor choice decisions and rely on well-known indicators of audit quality (e.g., audit firm size, industry expertise) to form their opinions about external auditor choices (Balsam, Krishnan, & Yang, 2003; Beasley & Petroni, 2001; Hermanson, Plunkett, & Turner, 1994). However, prior studies on auditor choice tend to ignore the personal interaction between the primary parties involved in the auditor selection process (Beattie, Fearnley, & Brandt, 2000; Bobek, Daugherty, & Radtke, 2012; He, X., Pittman, Rui, & Wu, 2017; Nelson & Tan, 2005). In this regard, Houghton and Jubb (2003, p.2) argue that "auditor choice is, in fact, a choice of people (auditors) by people (directors)."

Empirical evidence from studies on audit partners show that personal attributes of engagement partners such as gender, age, experience and industry specialization are

more informative in explaining variation in audit outcomes (Gul, Wu, & Yang, 2013; Hardies, Breesch, & Branson, 2015; Hardies, Breesch, & Branson, 2016; Ittonen & Peni, 2012; Ittonen, Vähämaa, & Vähämaa, 2013; Kung, Chang, & Zhou, 2019; Lee, Nagy, & Zimmerman, 2019; Lennox & Wu, 2018; Nekhili, Javed, & Chtioui, 2018; Zerni, 2012). The implication is that the board of directors is sensitive to the personal attributes of audit partners, and audit firms are likely to factor in the preferences of client firms (Lee et al., 2019). This may give rise to situations in which homophily plays an important role in the audit partner assignment process. In this regard, Lennox and Wu (2018) urge future research to consider how the client gender profile affects the partner-client assignment process. To the best of our knowledge, there are only two recent papers on auditor choice that draw on the theoretical homophily argument to examine audit partner assignment decisions (Berglund & Eshleman, 2019; Lee et al., 2019). Both of them were conducted in the U.S. context. The term homophily refers to an implicit tendency of individuals to prefer interacting with others who are similar to themselves. Homophily is a robust observation and has been examined across various characteristics including age, gender, ethnicity, education, religion, and profession (Ibarra 1992; McPherson, Smith-Lovin, & Cook, 2001). Berglund and Eshleman (2019) demonstrate the positive role of co-ethnicity between audit client firms and the engagement partner on selection/retention decisions. Closely related to our study, Lee et al. (2019) find evidence that corporate boards with female members tend to select a female engagement partner.

Using a sample of publicly listed French firms, we aim to complement the work of Lee et al. (2019) in several ways. First, we investigate the client-partner assignment process in a mandatory joint audit setting. An important consequence of joint audit regulation is that French listed firms may be audited by same-gender audit partners (two male, two female) or gender-diverse engagement partners (one male and one

female).<sup>30</sup> Second, we conjecture in our study that female directors may affect the audit partner assignment process differently depending on the role they are expected to play on the board. In other words, engagement partner choices are likely to be affected by the disparity of incentives between those board members who are more likely to be involved in the board's monitoring function, such as independent directors or audit committee members. Third, the environment in which publicly listed firms choose independent auditors has changed tremendously in the last decade. In particular, regulators in different jurisdictions have introduced gender quota laws to increase the proportion of female directors.<sup>31</sup> In 2011, the Cope-Zimmermann law established gender quotas for French corporate boards. This legislation obliged French firms to appoint at least 20% female members up until 2014 and at least 40% by 2017. While the law on gender quota affected the composition of French corporate boards (Nekhili, Gull, Chtioui, & Radhouane, 2020), it may also have important implications for external auditor choices. The moderating effects of gender quota legislation therefore also need to be addressed.

To answer our research questions, we used a sample of firms listed on the SBF 120 index over the period 2002 to 2017 inclusive. We used audited financial statements to manually collect information on the appointment of female board members and the names of audit partners from signed audit reports. To obtain convincing evidence on the link between board gender diversity and the choice of gender-diverse engagement partners, we measured board gender diversity in various ways. In addition to well-known financial attributes of audit clients, we also include a wide range of client governance, audit firm and partner attributes in our model. We use the propensity score

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<sup>30</sup> Because the presence of two female audit engagement partners in the joint auditor pair is very unusual in France (Nekhili, Javed, & Chtioui, 2018), we limit our study to the cases of gender-diverse engagement partners and of two male audit partners.

<sup>31</sup> See Deloitte (2013) and Nekhili et al. (2020) for detailed information on legislative initiatives aimed at promoting gender diversity in top corporate positions in different jurisdictions.

matching technique to counter selection problems caused by observable factors and apply the system GMM regression method to counter endogeneity issues arising from multiple sources such as simultaneity and unobserved heterogeneity. In line with the homophily argument, our initial results show that gender-diverse boards tend to select gender-diverse engagement partners. We then partition firm-years with female directors into three groups: (1) female inside directors, (2) female independent directors, and (3) female audit committee members. Separate re-estimation of system GMM models for each of the above variables show that the positive association between gender-diverse boards and gender-diverse audit partners holds only when female board members are independent or when female board members are also members of the audit committee. In contrast, female inside directors are negatively associated with the selection of gender-diverse audit partners. Using difference-in-differences methodology, our empirical results show that the association between gender-diverse boards and gender-diverse audit partners is more pronounced in the post-gender quota period. Taken together, these results imply that when examining the client-partner assignment process, female directors should not be treated as a homogeneous group. Contrary to the homophily argument, empirical results reported in this study provide compelling evidence to suggest that female directors appointed to the board's monitoring positions tend to select gender-diverse audit partners.

The next section discusses prior literature on auditor selection and develops hypotheses for this study. The third section describes our sample selection and research method. The fourth section features our main analyses. In the fifth and final section, we present our conclusions and discuss their implications.



## **2 Theoretical background and hypothesis development**

### *2.1 Prior research on the choice of external auditors*

Various prior studies have identified two important and closely related sources of the heterogeneous demand for auditing: agency demand and information demand (DeFond & Zhang, 2014; Habib et al., 2019). Agency demand for auditing arises due to separation of ownership and control, and disparity of incentives between corporate managers and owners. In the narrowest sense, external auditing serves to reduce certain agency costs by ensuring compliance with statutory requirements in the preparation of financial reports (Beattie & Fearnley, 1995; Jensen & Meckling, 1976; Watts & Zimmerman, 1983). This demand for external monitoring increases with firms' exposure to higher agency costs. Thus, firms appoint international accounting firms having a strong brand name reputation (i.e., Big N auditors) to provide assurance over and beyond the minimum legal requirement (DeFond, 1992). The information demand for auditing arises because of information asymmetry between corporate managers and outsiders (Beattie & Fearnley, 1995), particularly when firms are going public (i.e., IPOs) or need external financing to fund profitable projects. Appointment of auditors with greater credibility, who follow more stringent reporting, gives a positive perception of the intrinsic quality of accounting numbers to financial market participants. Consequently, such appointment positively facilitates the firm's ability to attract external investment (Beatty, 1989; Willenborg, 1999). An extensive literature documents that external auditing mitigates information asymmetry between corporate executives, owners and creditors. External auditors protect shareholders' interests by ensuring the integrity of accounting numbers and by enhancing the credibility of financial statements (Beattie & Fearnley, 1995). Outside stakeholders have a limited ability to assess the quality of audit services. They see that statutory audits are carried

out by independent audit firms and rely on audit firm characteristics such as industry expertise and brand name reputation to form their assessment of audit quality (Taylor, 2011).

An important characteristic of audited financial reports is that they are intended to be used by heterogeneous groups of stakeholders with divergent interests (Warming-Rasmussen & Jensen, 1998). In this regard, it has been argued that auditor choice decisions are more complex than simply seeking to reduce agency costs or being based on cost-of-capital arguments (Beattie et al., 2000). With regard to appointment of external auditors, the composition of corporate boards and audit committees and the attributes of their members are viewed as critical determinants of auditor choice (Carcello, Hermanson, Neal, & Riley, 2002; DeFond & Zhang, 2014; Habib et al., 2019). Prior studies consider the presence of independent/non-management directors and of female members on corporate boards and audit committees in order to capture client governance quality. Corporate boards (audit committees) with a higher proportion of outside directors and a higher proportion of female directors are more diligent and fulfill their monitoring functions more effectively (Adams & Ferreira, 2009; Carcello et al., 2002; Maraghni & Nekhili, 2014). Boards (audit committees) that are more independent and gender-diverse strengthen their oversight function by engaging more knowledgeable external auditors with superior auditing technologies (Abbott & Parker, 2000; Knechel & Willekens, 2006; Lai, Srinidhi, Gul, & Tsui, 2017; Nekhili et al., 2020).

Much prior research on auditor selection tends to ignore interpersonal interaction between the primary parties involved in the auditor-client selection (Beattie et al., 2000; Bobek, et al., 2012; He et al., 2017; Nelson & Tan, 2005). On the audit demand side, executives of client firms, members of corporate boards and members of audit committees are directly involved in the auditor selection process. In particular,

audit committee members closely interact with the audit engagement partner, negotiate the scope of statutory audit, deal with any disruption caused by statutory audit, and receive additional services that help improve the firm's efficiency and remove internal control weaknesses (Knechel, Niemi, & Sundgren, 2008; Nelson & Tan, 2005). Similarly, on the audit supply side, audit engagement partners variously interact with existing and prospective clients to convey the quality of their audit services, lead the audit teams, gather and evaluate audit evidence during the audit process and negotiate over contentious accounting issues, and they are ultimately responsible for producing an audit opinion. Taylor (2011) argues that because of this interpersonal interaction clients perceive audit as a process carried out by people rather than an output generated by a monolithic entity called the audit firm. The client's decision to engage an external auditor involves appointing both an independent audit firm and a specific engagement partner from that audit firm. First, the client decides whether or not to engage an external audit firm based on differential audit quality (i.e., an industry specialist or Big 4 firm). Clients may engage an audit firm with a brand name reputation or industry specialization in accordance with their specific needs and to signal the integrity of their accounting figures to outsiders. Specific engagement partners from the proposed audit firm are then chosen. Audit firms present either one or two partners to lead the audit engagement, depending on the relative importance of the potential client and the risk associated with having that client firm in its client portfolio. Choosing one audit partner rather than another may be influenced by the close interpersonal interaction of the primary parties involved in the external auditor selection process. Corporate directors also draw on their professional and personal networks to obtain information about the abilities of engagement partners and to choose an external auditor (Almer, Philbrick, & Rupley, 2014; Beattie et al., 2000; He et al., 2017; Johansen & Pettersson, 2013; Kacanski, Lusher, & Wang, 2020). In addition, client choices may differ from those of

outside stakeholders partly due to differences in the perception of factors affecting audit quality and client satisfaction.<sup>32</sup> Those dimensions of the audit process that are invisible to external stakeholders are very important for client satisfaction (Duff, 2009).<sup>33</sup>

## *2.2 Factors affecting the choice of audit partner gender*

External auditor appointments are two-party contractual arrangements determined by audit clients and external auditor factors. The role of gender in the client-partner assignment process can be influenced by audit demand and audit supply factors that are not necessarily mutually exclusive (Hardies et al., 2015). The audit client's decision to engage an external auditor goes hand in hand with the decision to appoint audit firms and a specific engagement partner. Audit firms also assign audit partners who possess appropriate skills and abilities according to the client's needs and circumstances.<sup>34</sup> The demand for male or female lead audit partners may be driven by the marked preferences of corporate directors or managers to engage audit partners who are demographically similar to themselves. A substantial body of research in psychology and sociology suggests that people have an affinity for others with similar attributes (McPherson et al., 2001). Ibarra (1992) notes that "a widely cited explanation for women's purported exclusion or limited access to interaction networks is preference

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<sup>32</sup> Assessing audit quality ex ante is problematic (Francis, 2004). Prior research typically identifies some attributes that influence perceptions by different stakeholders regarding the quality of audit services (Carcello, Hermanson, & McGrath, 1992; DeFond & Zhang, 2014; Duff, 2009). Clients may possibly assess audit quality ex post by observing attributes such as higher audit fees, lower levels of discretionary accruals, less underpricing of IPOs and their propensity to issue going-concern opinions (Knechel et al., 2008).

<sup>33</sup> Duff (2009) contends that audit quality is a multidimensional construct that may be categorized into technical and service dimensions of audit quality. Technical quality is linked with traditional attributes of audit quality such as the independence, competence, expertise and experience of external auditors. The service quality dimension is associated with empathy (understanding by external auditors of the challenges faced by client), responsiveness (flexibility in terms of audit visits) and the provision of non-audit services. The service quality dimension of the audit process is largely unobservable by external stakeholders.

<sup>34</sup> While engagement partners are assigned to clients, audit firms do not offer all of their partners to each client. Rather the client's relative importance and riskiness are also taken into account (Johnstone, 2000; Lennox & Wu, 2018; Taylor, 2011).

for homophily, i.e., interaction with others who are similar on given attributes such as sex, race, and education.” Accordingly, two recent empirical auditing studies have used data on listed firms in the U.S. to examine the role of client gender, experience and ethnic similarity in the client-partner assignment process. Specifically, Lee et al. (2019) used the theoretical homophily argument to examine whether the gender and experience of corporate board members and top management teams coincide with the gender and experience of the partners selected. The authors find that board gender diversity positively affects the selection of female lead auditors and that corporate boards with more experienced members are more likely to appoint experienced audit partners. Berglund and Eshleman (2019) also document consistent findings with regard to co-ethnicity in client-partner alignment. They find ethnic similarity to be positively associated with partner appointment and retention decisions.

Another potential reason why gender-diverse boards prefer engaging gender-diverse partners could be the positive outcomes associated with gender diversity. For example, extensive research has demonstrated that gender diversity improves the quality of board deliberations, board monitoring, corporate governance, and the financial reporting quality of the firm (Adams & Ferreira, 2009; Lai et al., 2017; Nekhili et al., 2020; Srinidhi, Gul, & Tsui, 2011). Several recent studies have shown that audit quality varies according to the gender of the lead engagement partner (Hardies et al., 2016; Ittonen & Peni, 2012; Ittonen et al., 2013; Kung et al., 2019; Lee et al., 2019; Lennox & Wu, 2018; Nekhili, Javed, & Chtioui, 2018). Furthermore, audit teams with women in lead positions as well as audit firms with female predominance in the partnership structure have been shown to be associated with higher audit quality (Cameran, Ditillo, & Pettinicchio, 2018; Menezes Montenegro & Bras, 2015). Closely related to board gender diversity, demand for gender-diverse engagement partners may also arise as a result of client recognition of the quality of gender-differentiated audits.

Boards of directors may possibly differentiate between same-gender audit partners and gender-diverse partners in terms of audit quality (Kung et al., 2019; Nekhili, Javed, & Chtioui, 2018). If this is the case, a gender-diverse board is likely to prefer engaging gender-diverse partners, as they are associated with higher audit quality. We therefore put forward the following hypothesis:

**H1a:** *Board gender diversity is positively associated with the selection of gender-diverse engagement partners.*

The French parliament introduced the Cope-Zimmermann law in January 2011 with the aim of increasing the share of female directors in French firms by establishing gender quotas for female directors. Specifically, the enactment of this legislation provided a period of five years to implement the necessary changes in two stages. French firms were required to have a board of directors comprising at least 20% female members up until 2014 and at least 40% female members by 2017. Non-compliance with this legislation may result in a number of sanctions on the firm, including fines, restriction of payment of directors' fee and even the firm's dissolution. One key outcome of the enactment of the Cope-Zimmermann law is that corporate board composition changed significantly within a span of a few years. Therefore, if any relationship exists in accordance with H1a, the predominant presence of female directors due to gender quota legislation is likely to moderate this relationship. We therefore put forward the following hypothesis:

**H1b:** *The relationship between the proportion of female directors and the choice of gender-diverse engagement partners will be strengthened following enactment of the gender quota law.*

### *2.3 Position of female directors on corporate board and choice of audit partner*

The board of directors is responsible for overseeing management activities. Corporate boards delegate their financial oversight responsibilities to a subcommittee of the board (i.e., the audit committee). While the audit committee is primarily concerned with monitoring the financial reporting process, it also helps external auditors carry out their statutory audit responsibilities independently. The ultimate objective of the audit committee is to ensure a high quality of financial reporting (DeFond & Francis, 2005). Female board members are found to sit on monitoring-related committees more frequently than their male counterparts. In this regard, Adams and Ferreira (2009, p.292) argue that “women do not belong to the old boys club, therefore, female directors could more closely correspond to the concept of the independent director emphasized in theory.” Thus prior studies consider that independent directors and female members enhance the effectiveness of the monitoring function of corporate boards (Adams & Ferreira, 2009; Lai et al., 2017; Nekhili et al., 2020). A number of prior studies on the structure of corporate boards differentiate between independent directors and executive/management directors, partially due to the disparity of incentives between the two (Fama & Jensen, 1983). Firm insiders’ motivations are closely linked to presenting corporate performance in the best light, whereas those of outside directors are associated with preserving and enhancing their own reputation (Lai et al., 2017). Boards (audit committees) with a higher proportion of independent members prefer to engage specialist auditors, as doing so helps outside directors to preserve their reputational capital and reduces the likelihood of lawsuits by investors (i.e., litigation risk) (Abbott & Parker, 2000; Fredriksson, Kiran, & Niemi, 2020; Knechel & Willekens, 2006). The market penalizes directors who are involved in

deviant activities or corporate failures (Habib et al., 2019; Srinivasan, 2005). In addition, the board of directors and independent auditors function as corporate governance mechanisms to safeguard the quality of financial reporting. Directors complement governance by appointing higher quality auditors (Sun & Liu, 2013). Outside directors may seek to promote shareholders' interests by requiring superior quality audits. Indeed, financial reporting problems can cause significant losses for shareholders, and higher quality auditors reduce the probability of financial misstatements or fraud (Srinivasan, 2005). We argue that engagement partner choices are more likely to be influenced by divergent interests and disparity of incentives between those female board members who are involved in the board's monitoring function (female independent directors and female audit committee members) in comparison to others (i.e., inside female directors). We thus put forward the following hypotheses:

**H2a:** *The choice of gender-diverse engagement partners depends on the position of female directors on corporate boards.*

**H2b:** *The association between the position of female directors and the selection of gender-diverse engagement partners will be more pronounced following enactment of the gender quota law.*

### **3 Data and research methodology**

#### *3.1 Sample selection*

We began developing our sample with the largest French companies in the SBF 120 index. Our sample period spans 16 years from 2002 to 2017 inclusively.<sup>35</sup> Following prior studies, we dropped foreign companies listed in France, real estate

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<sup>35</sup> We began our sample period in 2002 because before 2002 online coverage of audited financial statements is limited and data pertaining to various variables is unavailable.



companies, and financial institutions because of their unique regulations. We also dropped observations with incomplete financial information. This screening yielded a final sample of 97 French publicly listed companies and unbalanced panel data consisting of 1,244 firm-years. We collected data on accounting and financial information from Thomson data stream. We used annual reports to manually collect information on appointment of female directors, their audit committee membership, and corporate governance variables of the companies in our sample. Audited financial statements were obtained from each company's website or from the French financial market authority (AMF) website. We also obtained the certification year of audit partners from the official CNCC website to control for their experience and length of career.

### *3.2 Measure of joint engagement partners' gender*

In the French joint audit setting, two engagement partners are assigned by each audit firm to jointly conduct the audit. French audit regulations oblige the audit engagement partner to sign the audit report along with the name of their respective audit firm and to issue a single audit report bearing the signature of each engagement partner. We therefore hand-collected names of engagement partners from signed audit reports and determined the gender of each partner from their name. In cases where the name was not sufficient to determine the audit partner's gender, we consulted the public register of French statutory auditors to identify their gender.<sup>36</sup> To analyze the effect of board gender diversity on the choice of gender-diverse engagement partners, we use *GD\_AP* as our dependent variable and define it as one if the gender of the two engagement partners is different and zero otherwise.

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<sup>36</sup> <http://annuaire.cncc.fr>

### *3.3 Board gender diversity variables*

We follow Nekhili et al. (2020) to capture the effect of board gender diversity, using four measures: (1) Proportion of female directors (*FEM\_PRO*), (2) Shannon index of gender diversity (*SHANNON*), (3) Blau index of gender diversity (*BLAU*), and (4) Number of female directors (*FEM\_NUM*). We expect a positive coefficient for each measure on the appointment of gender-diverse engagement partners (*GD\_AP*).

### *3.4 Model specification*

In our study, the client-partner assignment process can be affected by the observable or unobservable audit client factors that simultaneously impacts board gender diversity and engagement partner selection (DeFond & Zhang, 2014; Lennox & Wu, 2018). We follow prior studies to appropriately address selection bias caused by observable variables and use the Propensity Score Matching (PSM) procedure. However, some unobservable variables may still systematically have a joint impact on gender diversity and partner selection, making it hard to draw any strong causal inference due to biased estimates. In addition, our dependent variable (*GD\_AP*) could be auto-correlated because of the specificities of the French audit setting, which require audit clients to appoint external auditors for a six-year period. Therefore, we consider board gender diversity and selection of gender-diverse engagement partners as endogenous variables. We address endogeneity issues arising from multiple sources (e.g., simultaneity and omitted variable bias) using generalized method of moments (GMM) estimation, known as system GMM. This approach produces consistent and efficient coefficients by obtaining lagged levels of endogenous variables as instruments (Blundell & Bond, 1998). To test our research hypotheses, we model the choice of gender-diverse engagement partners as a function of gender-diverse boards and control for several characteristics of audit clients, audit firms and audit partners that may

influence engagement partners' selection of assignment process. We therefore estimate the following regression model:

$$\begin{aligned} GD\_AP = & \beta_0 + \beta_1 Lag\ GD\_AP + \beta_2 FEM\_DIR + \beta_3 BOA\_SIZE + \beta_4 BOA\_IND \\ & + \beta_5 BOA\_MEET + \beta_6 AC\_SIZE + \beta_7 AC\_IND + \beta_8 AC\_MEET \\ & + \beta_9 DUAL + \beta_{10} FEM\_CEO + \beta_{11} FEM\_CHAIR + \beta_{12} TENURE \\ & + \beta_{13} LEV + \beta_{14} ROA + \beta_{15} R\&D + \beta_{16} FOR\_ASSET + \beta_{17} CROSS \\ & + \beta_{18} CRISIS + \beta_{19} F\_SIZE + \beta_{20} TWOBIG + \beta_{21} SPEC\_AF \\ & + \beta_{22} TENURE\_AF + \beta_{23} SPEC\_AP + \beta_{24} CAREER\_AP \\ & + \beta_{25} TENURE\_AP + \beta_{26} PUBSPEC\_AP + \beta_{27} PORTFOLIO\_AP \\ & + \beta_{28} INDUSTRY + \mathcal{E} \end{aligned} \tag{3.1}$$

where  $\mathcal{E}$  is the error term and each variable is defined in Table 3.1.

We consider a wide range of audit client and auditor characteristics likely to affect auditor-client assignment decisions. We use two groups of variables to capture the audit client's characteristics. The first group contains a number of corporate governance variables for controlling for governance "quality". Auditor choice studies suggest that the client's board (audit committee) composition influences external auditor choices. In our study we therefore control for size, independence and number of meetings (Abbott & Parker, 2000; Beasley & Petroni, 2001; Lee et al., 2019). A corporate board (audit committee) with a larger number of directors is more likely to have demographically diverse members, thus increasing the probability of employing gender-diverse engagement partners ( $GD\_AP$ ). Independent and active boards (audit committees) demand differentially superior quality audits (Beasley & Petroni, 2001). Following Lee et al. (2019) we include CEO and chairperson gender in our model. We expect the presence of a female chairperson ( $FEM\_CHAIR$ ) and female chief executive officer ( $FEM\_CEO$ ) to positively influence the appointment of  $GD\_AP$ . CEO/chairperson duality is male-dominated in France, an indication of weak internal control (Nekhili, Chakroun, & Chtioui, 2018). Therefore, a negative link is expected

between *DUAL* and *GD\_AP*. We also control for the tenure of chief executive officers (*CEO\_TEN*). The dimensions represented by the second group of variables regarding the characteristics of client firms include profitability, risk, complexity and size. We use return on assets (*ROA*) to capture audit clients' financial performance. Leverage ratio (*LEV*) is proxy for audit client risk. Cross-listing (*CROSS*) proxies for environments with strong investor protection (e.g. U.S.) is expected to increase litigation risk for auditors. Complex clients require extensive audit work. R&D intensity and foreign assets (*FOR\_ASSET*) are used to capture audit client complexity. Finally, we control for the size of auditee firms (*F\_SIZE*) and the global financial crisis (*CRISIS*). Overall, these dimensions of audit clients play a key role in the assignment of audit partners (e.g., Nekhili, Javed & Chtioui, 2018).

We also use two groups of context-specific control variables with regard to auditor characteristics. Consistent with the specificities of French joint audit regulations, the first group involves audit firm characteristics.<sup>37</sup> Audit firm size (*TWOBIG*) and industry specialist audit firms (*SPEC\_AF*) are included to control for the choice of higher quality audit firms (Francis et al., 2009; Lai et al., 2017). Prior research suggests female auditors face implicit and explicit barriers in becoming partners, particularly in Big 4 firms, and rarely develop their expertise as industry specialists (Lupu, 2012; Nekhili, Javed, & Chtioui, 2018). Thus, a female engagement partner (paired with male engagement partner) is less likely to be assigned when clients select two Big 4 audit firms or industry specialist audit firms.<sup>38</sup> Some studies indicate

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<sup>37</sup> Due to the joint audit requirement, external auditor choices are more complex for French firms compared to the typical Big/non-Big dichotomy in many countries. Appointment of each audit firm pair (e.g., Big/Big, Big/non-Big, or non-Big/non-Big) signals a different level of audit assurance and the demand for higher-quality pairs is positively associated with agency costs (Francis et al., 2009).

<sup>38</sup> We determine industry expertise at audit firm and audit partner level. An audit firm (audit partner) is classified as industry expert if the audit firm (audit partner) is the largest supplier within an industry on the basis of annual market share of audit fees and has at least two audit clients in that particular industry. Given that French firms are subject to joint audits, an audit client with one industry expert audit firm

that the appointment of women enables audit firms to “tame” difficult clients (Lupu, 2012) and to “troubleshoot” situations characterized by auditor-client friction (Bitbol-Saba & Dambrin, 2019). Therefore, assignment of gender-diverse audit partners may positively affect the audit-client relationship (*TENURE\_AF*). The second group contains engagement partner characteristics. In accordance with the audit engagement partner literature (Lennox & Wu, 2018), the appointment of industry specialist engagement partners (*SPEC\_AP*) is also added as a control variable. Lupu (2012) notes that female partners are more inclined to choose alternative paths such as setting up their own firm, part-time work or early exit from public accounting firms because of family responsibilities. Therefore, we expect that the presence of experienced partners (*CAREER\_AP*) reduces the probability of appointing female engagement partners. We expect that the presence of a female partner may positively enhance partner-client relationship (*TENURE\_AP*). Following Ittonen, Johnstone, & Myllymäki, (2015), public client specialization is also added as control variable (*PUBSPEC\_AP*). Nekhili, Javed, and Chtioui (2018) report that gender-diverse partners have a smaller portfolio size (*PORTFOLIO\_AP*), used to capture partner size. Finally, industry controls (*INDUSTRY*) are added to denote audit client industry and an indicator variable is included in the model estimation.

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(audit partner) is defined as one, and zero otherwise.

**Table 3.1: Variables used in the model and their measurement**

Variable	Variable	Measure <sup>39</sup>
<b>Dependent variable</b>		
<i>GD_AP</i>	Gender-diverse engagement partners	Dummy variable equal to 1 if at least one audit partner is a female.
<b>Endogenous variables</b>		
<i>FEM_PRO</i>	Proportion of female directors	The proportion of female directors to total directors.
<i>SHANNON</i>	Shannon index	$= -\sum_{i=1}^n P_i \ln(P_i)$ where $P_i$ is the percentage of board members in each category (two: male/female) and $n$ is the total number of categories used.
<i>BLAU</i>	Blau index	$= 1 - \sum_{i=1}^n P_i^2$ where $P_i$ is the percentage of board members in each category (two: male/female) and $n$ is the total number of categories used.
<i>FEM_NUM</i>	Number of female directors	Total number of female directors.
<i>FEMINS_DIR</i>	Proportion of female inside directors	Percentage of female inside directors to total number of board directors.
<i>FEMIND_DIR</i>	Proportion of female independent directors	Percentage of female independent directors to total number of board directors.
<i>FEMAC_DIR</i>	Proportion of female audit committee members	Percentage of female audit committee members to total number of audit committee members.
<b>Moderating variable</b>		
<i>QUOTA</i>	Quota	Binary variable equal to 1 after the adoption of the quota law reform in 2011 and 0 otherwise.
<b>Corporate governance variables:</b>		
<i>BOA_SIZE</i>	Board size	Total number of directors.
<i>BOA_IND</i>	Board independence	Ratio of independent non-executive directors to the total number of directors.
<i>BOA_MEET</i>	Board meetings	Natural logarithm of the number of annual board meetings.
<i>AC_SIZE</i>	Audit committee size	Total number of audit committee members
<i>AC_IND</i>	Audit committee independence	Ratio of non-executive independent audit committee members to total number of audit committee members.
<i>AC_MEET</i>	Audit committee meetings	Natural logarithm of the number of audit committee meeting.
<i>DUAL</i>	CEO duality	Dummy variable coded "1" if the CEO serves as Board Chair, "0" otherwise.
<i>FEM_CEO</i>	Female CEO	Dummy variable coded "1" if the CEO is a female and "0" otherwise.
<i>FEM_CHAIR</i>	Female Chair	Dummy variable coded "1" if the Chairperson is a female and "0" otherwise.
<i>CEO_TEN</i>	CEO tenure	Number of years within the company before appointment as a CEO.
<b>Other control variables</b>		
<i>LEV</i>	Leverage	Ratio of financial debt to total assets.
<i>ROA</i>	Return on assets	Ratio of operating income to total assets.
<i>R&amp;D</i>	Research and development	Ratio of investment in research and development to total sales.
<i>FOR_ASSET</i>	Foreign assets	Ratio of foreign assets to total assets.
<i>CROSS</i>	Cross	Dummy variable coded "1" if the firm is listed in U.S., "0" otherwise.
<i>CRISIS</i>	Crisis	Dummy variable equal to 1 for the years 2008 or 2009 and 0 otherwise
<i>F_SIZE</i>	Firm size	Natural logarithm of firm's total assets.
<i>TWOBIG</i>	Two big four	Dummy variable coded "1" if both auditors are Big, "0" otherwise.
<i>SPEC_AF</i>	Audit firm specialization	Dummy variable equal to "1" if one of the audit firms is an industry specialist and "0" otherwise.
<i>TENURE_AF</i>	Audit firm tenure	Natural logarithm of the number of years of the audit firm and client firm relationship. We use mean tenure of both audit firms.

<sup>39</sup> Variables from Thomson Datastream are winsorized at the 0.01 and 0.99 levels.

**Chapter 3:** Looking beyond homophily: Board gender diversity and the choice of gender-diverse audit partners

<i>SPEC_AP</i>	Audit partner industry specialization	Dummy variable equal to 1 if one of the audit engagement partners is an industry specialist and 0 otherwise.
<i>CAREER_AP</i>	Audit partner career	Natural logarithm of the number of years since the auditor's registration date. We used mean career of both audit engagement partners.
<i>TENURE_AP</i>	Audit partner tenure	Natural logarithm of the number of years of the audit engagement partner and client firm relationship. We use mean tenure of both audit partners.
<i>PUBSPEC_AP</i>	Audit partner public specialization	Dummy variable equal to 1 if the audit partner is a public client specialist and 0 otherwise.
<i>PORTFOLIO_AP</i>	Audit partner portfolio	Dummy variable coded 1 if the portfolio of audited assets is greater than the median for at least one of the joint audit partner and 0 otherwise.
<i>INDISTRY</i>	Industry	A binary variable coded 1 if the company belongs to the sector in question, 0 otherwise.

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## **4 Empirical results**

### *4.1 Descriptive statistics*

Descriptive results on the variables used in our analyses are presented in Table 3.2. In our sample, mean audit engagements with gender-diverse engagement partners (*GD\_AP*) are 20.82%, which is comparable to Nekhili, Javed, and Chtioui (2018). Concerning our measures of board gender diversity (*FEM\_DIR*) in French listed firms, based on our sample, we find the mean (median) proportion of female directors (*FEM\_PRO*) is 18.50% (16.67%). The mean values of the Shannon and Blau indices are 0.386 and 0.253, respectively. We also find that the mean (median) number of female members (*FEM\_NUM*) on French corporate boards is two (2). To test H2a and H2b, we distinguish female directors in accordance with their positions on the board of directors. We find the mean proportion of female inside directors (*FEMINS\_DIR*) is 8.02%, the mean proportion of female independent directors (*FEMIND\_DIR*) is 10.51% and the mean proportion of female directors appointed to the audit committee (*FEMAC\_DIR*) is 19.22%. These results are comparable with those in a recent French sample-based study by Nekhili et al. (2020). Concerning governance variables in our sample, French corporate boards have on average 12 directors (*BOA\_SIZE*), 47.77% of these directors are independent (*BOA\_IND*) and on average boards of directors meet 7 times per year (*BOA\_MEET*). On average, audit committees in our sample have 3.78 members (*AC\_SIZE*), of whom 68.70% are independent (*AC\_IND*). The mean number of audit committee meetings is 4.64 per year (*AC\_MEET*). The mean sample firm-year observations with CEO/Chairperson duality (*DUAL*) is 57.08%. Only 1.87% of firms have a female CEO (*FEM\_CEO*) and only 4.79% have a female chairperson (*FEM\_CHAIR*). Based on sample firm-years, we also find that the mean value of chief



executive officers' tenure (*CEO\_TEN*) is 7.92 years. On average financial leverage (*LEV*) across sample firms is 24.26%. The mean accounting performance measured by return on assets (*ROA*) is 4.37% across sample firms. Research and development expenditure (*R&D*) reported by sample firms is (mean) 2.61% of total assets. French firms have invested (mean) 20.38% of their total assets in foreign countries (*FOR\_ASSET*), and on average, 25.58% of sample firms are listed in U.S. capital markets (*CROSS*). The average size of firms (*F\_SIZE*) in our sample is €19.59 billion. For auditor variables, we find 46.86% of firm-year observations are audited by two Big 4 (*TWOBIG*) accounting firms and on average 67.34% of firms engage an industry specialist audit firm (*SPEC\_AF*). We also find that the mean value of audit firm tenure (*TENURE\_AF*) is 12.12 years.<sup>40</sup> For audit partner variables, we find mean firm-years audited by industry specialist partners is 7.91% (*SPEC\_AP*). As for experience of audit partners (*CAREER\_AP*), on average audit partners have authorized to sign audit reports for 17.78 years. Audit partner tenure (*TENURE\_AP*) shows partner-client relationship in terms of number of years, average (mean) tenure is 3.24 years in our sample. 73.01% of firm-years are audited by public specialist partners (*PUBSPEC\_AP*). 64.47% of partners have a portfolio (*PORTFOLIO\_AP*) of audited assets greater than the median.

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<sup>40</sup> Traditionally, there is no restriction on the length of the relationship between an audit firm and its client. The same audit firm can be re-appointed for further tenure but the partner-client relationship cannot be greater than 6 years.

**Table 3.2: Descriptive statistics for entire sample**

Variable	Mean	Standard Deviation	Minimum	Maximum	25th percentile	50th percentile	75th percentile
<i>GD_AP (%)</i>	20.82	40.61	0	1	0	0	0
<i>FEM_PRO (%)</i>	18.50	15.52	0	66.67	5.88	16.67	30
<i>SHANNON</i>	0.386	0.248	0	0.723	0.224	0.451	0.611
<i>BLAU</i>	0.254	0.178	0	0.627	0.111	0.278	0.420
<i>FEM_NUM</i>	2.23	1.99	0	8	1	2	4
<i>FEMINS_DIR (%)</i>	8.02	9.83	0	50	0	6.25	13.33
<i>FEMIND_DIR (%)</i>	10.51	13.46	0	66.67	0	5.56	18.75
<i>FEMAC_DIR (%)</i>	19.22	23.22	0	1	0	0	33.33
<i>BOA_SIZE (number of directors)</i>	12.03	3.52	3	26	10	12	14
<i>BOA_IND (%)</i>	47.77	21.63	0	1	35.71	46.15	61.54
<i>BOA_MEET (number of meetings)</i>	7.08	3.32	0	30	5	7	9
<i>AC_SIZE (number of audit committee members)</i>	3.78	1.09	3	10	3	4	4
<i>AC_IND (%)</i>	68.70	26.61	0	1	50	66.67	1
<i>AC_MEET (number of meetings)</i>	4.64	2.15	1	19	3	4	6
<i>DUAL (%)</i>	57.08	49.51	0	1	0	1	1
<i>FEM_CEO (%)</i>	1.87	13.57	0	1	0	0	0
<i>FEM_CHAIR (%)</i>	4.79	21.37	0	1	0	0	0
<i>CEO_TEN (number of years)</i>	7.92	7.36	0	51	3	6	10
<i>LEV (%)</i>	24.26	14.47	0.10	66.55	14.01	22.77	32.92
<i>ROA (%)</i>	4.37	4.62	-13.99	18.67	2.13	4.09	6.52
<i>R&amp;D (%)</i>	2.61	5.24	0	34.63	0	0.05	3.31
<i>FOR_ASSET (%)</i>	20.38	29.85	0	97.31	0	0	39.02
<i>CROSS (%)</i>	25.58	43.65	0	1	0	0	1
<i>F_SIZE (Total assets in billions of euros)</i>	19.586	33.759	10.1	27.89	2.278	6.293	23.851
<i>TWOBIG (%)</i>	46.87	49.92	0	1	0	0	1
<i>SPEC_AF (%)</i>	67.34	46.91	0	1	0	1	1
<i>TENURE_AF (number of years)</i>	12.12	6.68	0	38.5	7	11.5	16.5
<i>SPEC_AP (%)</i>	7.91	27.00	0	1	0	0	0
<i>CAREER_AP (number of years)</i>	17.78	6.31	0	37.5	13	18	22
<i>TENURE_AP (number of years)</i>	3.24	1.30	0	6.5	2	3	4
<i>PUBSPEC_AP (%)</i>	73.01	44.41	0	1	0	1	1
<i>PORTFOLIO_AP (%)</i>	64.47	47.87	0	1	0	1	1

This table provides descriptive statistics for gender-diverse engagement partners, multiple variables capturing board gender diversity and position of female directors on the board, and all other variables for our sample of French companies included in the SBF 120 index. The sample includes unbalanced panel data for 97 French firms from 2002 to 2017. All variables are as defined in Table 3.1.

In Table 3.3, we examine yearly variation in audit engagements with gender-diverse partners and multiple variables capturing variation in the attributes of female directorship in French listed firms. The propensity of client firms to engage gender-diverse partners varies considerably over the sample period. Audit engagements with gender-diverse partners (*GD\_AP*) range from 11.39% at the beginning of the sample period in 2002 to 30.47% at the end of the sample period in 2017. With regard to the percentage of female directors (*FEM\_PRO*), our sample firms have 18.50% female board members overall. There was no legal obligation to appoint female board members at the beginning of our sample, and French firms appointed only 6.26% female directors in 2002. This proportion rose to 40.76% in 2017 in compliance with the gender quota law requirement (i.e., to have at least 40% female board members on French boards). Concerning the position of female board members, it appears that the proportion of female inside directors (*FEMINS\_DIR*) only grew from 5.61% in 2002 to 12.20% in 2017. The proportion of female independent members (*FEMIND\_DIR*) grew significantly, from merely 0.65% in 2002 to 28.73% in 2017 and the proportion of female audit committee members (*FEMAC\_DIR*) grew substantially from 2.94% in 2002 to 41.10% in 2017. It is noteworthy that the propensity to appoint *FEMIND\_DIR* and *FEMAC\_DIR* substantially increased compared to *FEMINS\_DIR* over the years. These findings suggest that French firms have tended to appoint more female board members on monitoring positions, particularly after the implementation of the gender quota law. Furthermore, the propensity of French firms to appoint female directors on audit committees started to grow even before the introduction of the gender quota legislation. We carry out a Mann–Kendall test to check the changing pattern of these variables statistically. The results of the non-parametric test for trend analysis for all variables in Table 3.3 lead to the rejection of the null hypothesis of no trend over time

and suggest a statistically significant upward trend during the sample period.<sup>41</sup>

#### *4.2 Selection problem and propensity score matching*

As noted earlier, external auditor appointments are two-party contractual arrangements determined by audit clients and auditor factors. The client-partner assignment process can be affected by observable audit client or external auditor factors. In Table 3.4, we divide our sample into firm-years with a higher proportion of female directors and firm-years with a lower proportion of female directors, using the median value (16.67%) of the proportion of female directors. We use the mean difference test to examine any structural differences between the two subsamples. Table 3.4 reports substantial differences between subsamples and suggests that our study may suffer from selection bias. If the client characteristics that affect the decision to appoint a higher proportion of female directors concurrently affect the selection of gender-diverse partners, in such a scenario a direct comparison of all firms would be inappropriate. We therefore implement the PSM technique to counter concerns of selection bias arising from observable client firm characteristics, as highlighted above (Rosenbaum & Rubin, 1983). We use a dummy variable which takes value 1 to denote firm years with higher proportion of female directors (treatment group) and 0 to denote a lower proportion of female directors (control group).

We generate propensity scores by estimating a logit model that predicts whether firms have a proportion of female directors greater than median, given a vector of audit clients and auditor characteristics. Second, we match firms having a higher proportion

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<sup>41</sup> Untabulated pairwise correlation analysis shows that our dependent variable (*GD\_AP*) is positively correlated with all the measures of board gender diversity except the proportion of female inside directors (*FEMINS\_DIR*), which is negative and statistically non-significant, thus indicating that gender plays a positive role in auditor-client alignment decisions. In addition, CEO duality (*DUAL*), female CEO (*FEM\_CEO*), and audit firm industry specialization correlate negatively with *GD\_AP*. The VIF of all independent variables is less than the critical threshold of 3.

of female directors with firms having a lower proportion of female directors with similar characteristics. By applying the condition of 1% caliper distance and matching without replacement, we obtain a total sample of 682 matched observations. After matching, results reported in Table 3.4 show that the PSM procedure removes imbalances of observed covariates and that no significant differences remain between the two subsamples. However, *GD\_AP* remains significantly different for the two subsamples, suggesting that the choice of gender-diverse audit partners is inherently linked to the board gender diversity.

**Table 3.3: Descriptive statistics by year for the proportion of gender-diverse engagement partners, the proportion of female directors, and variables representing women’s positions on boards**

Year	GD_AP (%)	FEM_PRO	FEMINS_DIR	FEMIND_DIR	FEMAC_DIR
2002	11.39	6.26	5.61	0.65	2.94
2003	8.75	6.72	5.98	0.74	3.65
2004	10.84	7.26	6.58	0.67	4.61
2005	11.63	7.91	7.03	0.88	5.86
2006	15.73	8.33	7.33	0.99	6.60
2007	15.38	7.93	5.17	2.76	8.76
2008	18.68	7.87	4.66	3.21	9.72
2009	24.17	9.07	5.22	3.85	11.47
2010	18.48	13.17	6.61	6.56	16.10
2011	22.83	18.35	8.51	9.84	18.96
2012	23.65	21.50	8.77	12.73	23.46
2013	28.72	26.48	10.36	16.31	28.37
2014	27.37	31.22	10.38	20.86	32.66
2015	30.53	34.72	10.67	24.07	34.21
2016	29.47	40.46	12.05	28.58	40.79
2017	30.47	40.76	12.20	28.73	41.10
Total	20.82	18.50	8.02	10.51	19.22
Analysis of variance for mean difference test : F-value ( <i>p</i> -value)	3.11 (0.000)*	169.67 (0.000)*	6.27 (0.000)*	125.40 (0.000)*	42.39 (0.000)*
Mann–Kendall test: Z-value ( <i>p</i> - value):	7.00 (0.000)*	29.12 (0.000)*	8.17 (0.000)*	29.17 (0.000)*	22.24 (0.000)*

This table provides yearly variation in gender-diverse engagement partners, the proportion of female directors and in the three variables capturing the position of female directors on the board. \* denotes significant results at the 0.01 level.

**Table 3.4: Mean difference test between firm-years with high and low proportion of female directors for entire and matched samples**

Variable	Entire Sample			Matched Sample		
	Firm-years with high proportion of female directors	Firm-years with low proportion of female directors	t-test/Chi <sup>2</sup> <sup>a</sup>	Treatment	Control	t-test/Chi <sup>2</sup> <sup>a</sup>
<i>GD_AP</i>	26.78	15.17	5.07***	24.34	15.84	2.78***
<i>BOA_SIZE</i> (number of directors) <sup>b</sup>	12.33	12.44	0.57	12.32	12.38	0.22
<i>BOA_IND</i> (%)	51.72	46.29	4.71***	47.74	48.86	0.73
<i>BOA_MEET</i> (number of meetings) <sup>b</sup>	7.36	6.62	4.49***	7.01	6.88	0.57
<i>AC_SIZE</i> (number of audit committee members)	3.88	3.72	2.51**	3.69	3.79	1.15
<i>AC_IND</i> (%)	71.32	65.59	3.84***	68.20	68.27	0.03
<i>AC_MEET</i> (number of meetings) <sup>b</sup>	4.93	4.40	4.32***	4.58	4.71	0.77
<i>DUAL</i> (%)	58.00	54.32	1.31	55.42	58.06	0.69
<i>FEM_CEO</i> (%)	2.85	0.65	2.95***	0.29	0.88	1.00
<i>FEM_CHAIR</i> (%)	6.18	3.59	2.12**	4.40	4.40	0.00
<i>CEO_TEN</i> (number of years) <sup>b</sup>	8.74	7.02	4.24***	8.48	7.51	1.57
<i>LEV</i> (%)	23.79	24.54	0.96	23.83	24.64	0.77
<i>ROA</i> (%)	4.23	4.66	1.70*	4.76	4.37	1.14
<i>R&amp;D</i> (%)	2.69	2.61	0.25	2.74	2.59	0.38
<i>FOR_ASSET</i> (%)	16.62	26.69	5.89***	23.91	23.77	0.06
<i>CROSS</i> (%)	25.51	27.73	0.88	26.98	25.81	0.35
<i>F_SIZE</i> (in billions of euros) <sup>b</sup>	21.890	18.540	1.71*	20.311	18.981	0.51
<i>TWOBIG</i> (%)	45.17	52.53	2.60***	47.80	46.33	0.38
<i>SPEC_AF</i> (%)	66.72	68.51	0.68	64.81	65.39	0.16
<i>TENURE_AF</i> (number of years) <sup>b</sup>	2.56	2.37	6.03***	2.46	2.48	0.44
<i>SPEC_AP</i> (%)	7.45	10.44	1.85*	7.92	8.50	0.28
<i>CAREER_AP</i> (number of years) <sup>b</sup>	2.91	2.88	1.45	2.87	2.87	0.07
<i>TENURE_AP</i> (number of years) <sup>b</sup>	3.41	3.21	2.79***	3.29	3.33	0.37
<i>PUBSPEC_AP</i> (%)	80.98	70.80	4.23***	73.31	73.61	0.09
<i>PORTFOLIO_AP</i> (%)	70.05	64.27	2.17**	63.63	63.93	0.08
<i>Number of observations</i>	622	622		341	341	

This table provides results of the mean difference test to highlight structural differences between firm-years with proportion of female directors higher than the median level and firm-years with proportion of female directors lower than the median level and other variables from 2002 to 2017. Propensity Score Matching (PSM) procedure is used to mitigate these structural differences between the two sub-samples (Rosenbaum & Rubin, 1983). The PSM procedure yields a total sample of 682 matched observations: 341 firm-years with high proportion of female directors (treatment group) and 341 firm-years with low proportion of female directors (comparison group). All variables are as defined in Table 3.1. \*\*\*, \*\*, \* denote significant results at 0.01, 0.05 and 0.10 levels, respectively. <sup>a</sup> t-values are reported for continuous variables and Chi-square values for dummy variables. <sup>b</sup> t-tests are based on natural logarithm-transformed values.

### *4.3 The effect of board gender diversity on client-partner gender alignment*

Table 3.5 reports estimation results of the quality of system GMM estimation. The validity of system GMM estimates is tested by autocorrelations of endogenous (our proxies for board gender diversity) and dependent variables (gender-diverse partners). The Arellano and Bond (1991) tests rule out the null hypothesis of no first-order serial correlation, but not the null hypothesis of no second-order serial correlation. These results support our rationale for choosing the system GMM model, since this approach performs better only with first-order serial correlation (Roodman, 2009a). Proliferation of instruments is an important issue to be considered when estimating the system GMM method. Each explanatory variable in the system GMM model provides a number of instruments associated with lagged values and differences. Instruments may become weak as the number of explanatory variables increases (Roodman, 2009b). We carried out two additional tests to check identification of our system GMM model. First, the Sargan test leads to the rejection of the null hypothesis of over-identified model. Second, the Hansen test does not lead to the rejection of the null hypothesis of validity of (exogenous) instruments.

To test the link between board gender diversity and the choice of gender-diverse engagement partners, we use the PSM sample on the model given in Equation (3.1). In accordance with H1a, we expect gender-diverse boards to select gender-diverse engagement partners. Table 3.5 reports the results of system GMM regression estimations with gender-diverse engagement partners (*GD\_AP*) as the dependent variable and the results of one of our four measures for board gender diversity are reported in each column, respectively. Irrespective of the way we measure board gender diversity, the estimated coefficients are positive and highly significant for each variable capturing board gender diversity in Table 3.5. In accordance with H1a, these results



suggest a positive relationship between gender-diverse boards and the incidence of gender-diverse engagement partners. Hence, these estimates provide strong and consistent empirical support for the suggestion that board gender diversity is a critical determinant of the audit engagement partners' gender. These findings are broadly consistent with the homophily argument of Ibarra (1992) in suggesting that gender-diverse boards prefer to appoint gender-diverse engagement partners. Our results also complement empirical evidence based on U.S. firms, which suggest that the gender mix of the client's board of directors positively affect the choice of gender audit engagement partners (Lee et al., 2019).

The coefficients of board attributes are in line with our expectations: all three board attributes (*BOA\_SIZE*, *BOA\_IND*, and *BOA\_MEET*) are positively and statistically significant (although board size is negative but not significant when we consider the number of female directors). The negative impact of audit committee size (*AC\_SIZE*) and audit committee independence (*AC\_IND*) on the selection of gender-diverse engagement partners may be explained by the substitutability between audit quality and alternative monitoring mechanisms. As expected, male-dominated hierarchy captured by CEO/chairperson duality (*DUAL*) is negatively associated with the selection of gender-diverse engagement partners (Nekhili, Chakroun, & Chtioui, 2018). In contrast to Lee et al. (2019), the estimated coefficient of female CEO (*FEM\_CEO*) is statistically insignificant. However, the presence of a female chairperson (*FEM\_CHAIR*) is positively associated with the selection of gender-diverse engagement partners. These results highlight the direct role of French corporate boards in the auditor selection process. CEO tenure (*TENURE*) is positively associated with the choice of gender-diverse engagement partners. Regarding estimated coefficients on financial features of audit clients, we find audit clients of gender-diverse engagement

partners are profitable (*ROA*), cross-listed (*CROSS*) in a strong legal regime (i.e., U.S.) and possess more assets in foreign countries (*FOR\_ASSET*). Audit clients' *R&D* intensity is likely to reduce the probability of selecting gender-diverse engagement partners, and no significant effect is observed for debt ratio (*LEV*). The client size (*F\_SIZE*) coefficient is positive and significant only when considering the number of female directors (*FEM\_NUM*) as variable of interest. The 2008 financial crisis (*CRISIS*) also enhanced the likelihood of appointing gender-diverse partners.

Concerning auditor attributes, positive coefficients of *TENURE\_AF* and *TENURE\_AP* suggest that clients retain incumbent audit firms and audit partners for longer when audited by gender-diverse engagement partners. Our proxies of audit firm size, measured by clients' propensity to appoint two Big 4 firms (*TWOBIG*), and audit partner size (*PORTFOLIO\_AP*), captured by a portfolio of audited assets, are negatively associated with the choice of *GD\_AP*. Finally, the choice of industry specialist audit firms (*SPEC\_AF*) and industry specialist (*SPE\_AP*) and experienced audit partners (*CAREER\_AP*) reduces the possibility of assigning gender-diverse engagement partners in the French joint audit setting.

**Table 3.5: Regressions of gender-diverse engagement partners on the proportion of female directors, the Shannon diversity index, the Blau diversity index, and the number of female directors**

Variable	Expected Sign <sup>a</sup>	FEM_PRO		SHANNON		BLAU		FEM_NUM	
		Coef.	t-test	Coef.	t-test	Coef.	t-test	Coef.	t-test
<i>Lag GD_AP</i>	?	0.842***	122.73	0.853***	120.26	0.848***	126.29	0.844***	119.88
<i>FEM_PRO</i>	+	0.339***	12.77						
<i>SHANNON</i>	+			0.186***	11.41				
<i>BLAU</i>	+					0.282***	11.98		
<i>FEM_NUM</i>	+							0.028***	13.10
<i>BOA_SIZE</i>	+	0.045***	5.02	0.027**	2.37	0.037***	3.57	-0.014	-1.28
<i>BOA_IND</i>	+	0.065***	4.92	0.060***	4.36	0.068***	5.15	0.078***	5.71
<i>BOA_MEET</i>	+	0.023***	4.04	0.018***	3.24	0.017***	2.85	0.022***	3.94
<i>AC_SIZE</i>	+	-0.003	-1.26	-0.004*	-1.82	-0.005**	-2.12	-0.001	-0.53
<i>AC_IND</i>	+	-0.043***	-4.80	-0.036***	-3.87	-0.041***	-4.60	-0.053***	-6.16
<i>AC_MEET</i>	+	0.006	1.10	-0.001	-0.18	0.001	0.02	0.007	0.87
<i>DUAL</i>	-	-0.014***	-2.72	-0.016***	-3.01	-0.017***	-3.28	-0.014***	-3.08
<i>FEM_CEO</i>	+	0.048	1.08	0.061	1.29	0.058	1.22	0.029	0.72
<i>FEM_CHAIR</i>	+	0.044***	2.70	0.034*	1.87	0.037**	2.10	0.036***	2.69
<i>CEO_TEN</i>	+	0.009***	4.24	0.012***	5.02	0.012***	5.08	0.014***	5.66
<i>LEV</i>	+	-0.004	-0.23	0.003	0.17	0.001	0.05	0.012	0.60
<i>ROA</i>	+	0.375***	5.91	0.300***	4.14	0.328***	4.69	0.369***	6.05
<i>R&amp;D</i>	+	-0.243***	-4.75	-0.227***	-4.74	-0.229***	-4.71	-0.251***	-5.33
<i>FOR_ASSET</i>	+	0.017**	2.05	0.020**	2.40	0.022***	2.66	0.018**	2.17
<i>CROSS</i>	+	0.022***	3.17	0.028***	4.39	0.028***	4.55	0.023***	4.07
<i>CRISIS</i>	+	0.077***	18.19	0.064***	14.42	0.068***	14.11	0.079***	19.06
<i>F_SIZE</i>	+	0.003	1.61	0.004	1.65	0.004	1.54	0.005**	2.28
<i>TWOBIG</i>	-	-0.008**	-2.20	-0.012***	-3.06	-0.009**	-2.33	-0.008*	-1.72
<i>SPEC_AF</i>	-	-0.018***	-3.19	-0.022***	-4.34	-0.021***	-4.16	-0.021***	-3.29
<i>TENURE_AF</i>	+	0.030***	5.67	0.031***	5.60	0.032***	6.04	0.028***	5.39
<i>SPEC_AP</i>	-	-0.027***	-3.13	-0.027***	-3.58	-0.028***	-3.68	-0.029***	-3.26
<i>CAREER_AP</i>	-	-0.081***	-12.64	-0.077***	-10.27	-0.082***	-12.00	-0.082***	-10.98
<i>TENURE_AP</i>	+	0.004***	3.14	0.004***	3.03	0.004***	2.88	0.003**	2.24
<i>PUBSPEC_AP</i>	+	0.027***	4.02	0.030	4.99	0.031***	4.94	0.033***	5.75
<i>PORTFOLIO_AP</i>	-	-0.022***	-2.95	-0.018**	-2.38	-0.020***	-2.86	-0.022***	-3.57
Intercept	?	-0.107***	-3.18	-0.083**	-2.11	-0.085**	-2.27	0.003	0.06

**Chapter 3:** Looking beyond homophily: Board gender diversity and the choice of gender-diverse audit partners

Industry	?	Yes	Yes	Yes	Yes
Number of observations		641	641	641	641
Fisher (Prob > F, <i>p</i> -value):		6830.25 ( <i>p</i> = 0.000)	7530.21 ( <i>p</i> = 0.000)	15140.01 ( <i>p</i> = 0.000)	7530.21 ( <i>p</i> = 0.000)
Arellano–Bond test AR(1) ( <i>z</i> , <i>p</i> -value):		-4.44 ( <i>p</i> = 0.000)	-4.45 ( <i>p</i> = 0.000)	-4.44 ( <i>p</i> = 0.000)	-4.44 ( <i>p</i> = 0.000)
Arellano–Bond test AR(2) ( <i>z</i> , <i>p</i> -value):		-0.12 ( <i>p</i> = 0.904)	-0.18 ( <i>p</i> = 0.855)	-0.24 ( <i>p</i> = 0.810)	-0.26 ( <i>p</i> = 0.792)
Sargan test (Chi-square, <i>p</i> -value):		730.20 ( <i>p</i> = 0.000)	727.78 ( <i>p</i> = 0.000)	728.56 ( <i>p</i> = 0.000)	728.81 ( <i>p</i> = 0.000)
Hansen test (Chi-square, <i>p</i> -value):		66.40 ( <i>p</i> = 0.210)	64.69 ( <i>p</i> = 0.255)	65.35 ( <i>p</i> = 0.237)	64.22 ( <i>p</i> = 0.268)

This table provides results of the system GMM regressions of the gender-diverse engagement partners on all the four measures of board gender diversity using propensity score matched sample. Arellano-Bond tests examines if the data process is auto-regressive. The Sargan test examines if our system GMM model is over-identified. The Hansen test of exogeneity of the instruments subset tests the null hypothesis of exogenous instruments. All variables are as defined in Table 3.1. \*\*\*, \*\*, \* denote significant results

#### 4.4 *The effect of the gender quota law on client-partner gender alignment*

We also examine the moderating effect of the implementation of the Cope-Zimmermann law on the link between the proportion of female directors (*FEM\_PRO*) and the choice of gender-diverse engagement partners (*GD\_AP*). In accordance with H1b, we expect the predominant presence of female directors to strengthen the association between *FEM\_PRO* and *GD\_AP*. To capture the effect of the gender quota law on the selection of gender-diverse partners, we use a dummy variable to represent the gender quota law (*QUOTA*) and define it as 1 to indicate implementation of the new law in 2011 and 0 otherwise. We estimate the model given in Equation (3.1) by including this additional variable. The results for Model 1 in Table 3.6 show that enactment of the Cope-Zimmermann law is positively associated with *GD\_AP* ( $\beta_3 = 0.073$ ,  $t = 8.86$ ). Further, we specifically focus on the 2011 to 2017 post-quota period. In doing so, we use interaction between  $FEM\_PRO \times QUOTA$  and estimate the following equation.

$$\begin{aligned}
 GD\_AP = & \beta_0 + \beta_1 Lag\ GD\_AP + \beta_2 FEM\_PRO + \beta_3 QUOTA \\
 & + \beta_4 (FEM\_PRO \times QUOTA) + \beta_5 CONTROL + \beta_6 INDUSTRY \\
 & + \mathcal{E}
 \end{aligned} \tag{3.2}$$

where  $\mathcal{E}_{it}$  is the error term, *CONTROL* is a vector of control variables that may differ across client firms, audit firms and audit partners (*BOA\_SIZE*, *BOA\_IND*, *BOA\_MEET*, *AC\_SIZE*, *AC\_IND*, *AC\_MEET*, *DUALITY*, *FEM\_CEO*, *FEM\_CHAIR*, *TENURE*, *LEV*, *ROA*, *R&D*, *FOR\_ASSET*, *CROSS*, *CRISIS*, *F\_SIZE*, *TWO\_BIG*, *SPEC\_AF*, *TENURE\_AF*, *SPEC\_AP*, *CAREER\_AP*, *TENURE\_AP*, *PUBSPEC\_AP*, *PORTFOLIO\_AP*). All these variables are defined in Table 3.1.

**Table 3.6: Regressions of gender-diverse engagement partners on the proportion of female directors and the quota law**

Variable	Expected Sign <sup>a</sup>	Model1: QUOTA		Model2: FEM_PRO × QUOTA	
		Coef.	t-test	Coef.	t-test
<i>Lag GD_AP</i>	?	0.841***	148.18	0.837***	115.76
<i>FEM_PRO</i>	+	0.141***	5.63	-0.599***	-9.80
<i>QUOTA</i>	+	0.073***	8.86	-0.193***	-9.36
<i>FEM_PRO × QUOTA</i>	+			0.959***	10.80
<i>BOA_SIZE</i>	+	0.036***	4.32	0.023	1.63
<i>BOA_IND</i>	+	0.051***	4.54	0.061***	2.62
<i>BOA_MEET</i>	+	0.027***	4.24	0.026***	3.00
<i>AC_SIZE</i>	+	-0.004*	-1.64	-0.009**	-2.37
<i>AC_IND</i>	+	-0.049***	-4.99	-0.072***	-3.89
<i>AC_MEET</i>	+	-0.006	-1.04	-0.014**	-2.01
<i>DUAL</i>	-	-0.024***	-4.78	-0.014*	-1.65
<i>FEM_CEO</i>	+	0.032	0.84	-0.051*	-1.70
<i>FEM_CHAIR</i>	+	0.057***	3.33	0.062***	4.11
<i>CEO_TEN</i>	+	0.011***	4.31	0.011***	3.87
<i>LEV</i>	+	-0.002	-0.02	0.022	0.80
<i>ROA</i>	+	0.367***	6.55	0.418***	3.53
<i>R&amp;D</i>	+	-0.277***	-6.84	-0.283***	-4.57
<i>FOR_ASSET</i>	+	0.017**	2.06	-0.021**	-2.07
<i>CROSS</i>	+	0.030***	4.69	0.019**	2.13
<i>CRISIS</i>	+	0.093***	20.30	0.060***	10.10
<i>F_SIZE</i>	+	0.006**	2.28	0.011***	3.48
<i>TWOBIG</i>	-	-0.007	-1.48	0.006	0.75
<i>SPEC_AF</i>	-	-0.016***	-2.81	-0.024***	-3.55
<i>TENURE_AF</i>	+	0.024***	5.34	0.024***	2.78
<i>SPEC_AP</i>	-	-0.030***	-3.28	-0.044***	-3.56
<i>CAREER_AP</i>	-	-0.079***	-11.39	-0.076***	-7.01
<i>TENURE_AP</i>	+	0.002*	1.73	0.002	1.62
<i>PUBSPEC_AP</i>	+	0.027***	4.47	0.039***	5.24
<i>PORTFOLIO_AP</i>	-	-0.016**	-2.13	-0.027***	-2.85
Intercept	?	-0.074**	-2.24	0.019	0.36
Industry	?		Yes		Yes
Number of observations			641		641
Fisher (Prob > F, , <i>p</i> -value)		54965.31	( <i>p</i> = 0.000)	8645.35	( <i>p</i> = 0.000)
Arellano–Bond test AR(1) ( <i>z</i> , <i>p</i> -value):		-4.46	( <i>p</i> = 0.000)	-4.52	( <i>p</i> = 0.000)
Arellano–Bond test AR(2) ( <i>z</i> , <i>p</i> -value):		-0.07	( <i>p</i> = 0.944)	-0.66	( <i>p</i> = 0.507)
Sargan test (Chi-square, <i>p</i> -value):		716.25	( <i>p</i> = 0.000)	272.66	( <i>p</i> = 0.000)
Hansen test (Chi-square, <i>p</i> -value):		66.81	( <i>p</i> = 0.176)	55.87	( <i>p</i> = 0.480)
Joint test: <i>FEM_PRO</i> + ( <i>FEM_PRO</i> × <i>QUOTA</i> )				0.360***	8.20

This table provides results of the system GMM regressions of gender-diverse audit partners on the proportion of female directors and the quota law using propensity score matched sample. Arellano-Bond tests examines if the data process is auto-regressive. The Sargan test examines if our system GMM model is over-identified. The Hansen test of exogeneity of the instruments subset tests the null hypothesis of exogenous instruments. All variables are as defined in Table 3.1. \*\*\*, \*\*, \* denote significant results at 0.01, 0.05 and 0.10 levels, respectively.

To examine the marginal effect of *FEM\_PRO* on *GD\_AP* in the post-quota period, we conducted a joint test of coefficients on *FEM\_PRO* and *FEM\_PRO* × *QUOTA* using difference-in-differences analysis. The results reported in Model 2 of Table 3.6 show that the joint coefficient of *FEM\_PRO* and *FEM\_PRO* × *QUOTA* is positive and statistically significant ( $\beta_2 + \beta_4 = 0.360$ ,  $t = 8.20$ ). These results support H1b and suggest that the relationship between *GD\_AP* and the proportion of female directors (*FEM\_PRO*) becomes stronger as result of the enactment of the gender quota law.

#### *4.5 Position of female members on the board and client-partner gender alignment*

So far, we have found that gender-diverse boards positively influence the choice of gender of engagement partners and this association became even stronger as the proportion of female directors increased in the post-quota period. Going further, H2a postulates that the choice of female directors differs according to the role they are expected to play on the board. Prior research suggests the incentives of executive and non-executive members of the boards differ significantly, and that the market for directors penalizes those directors who are involved in corporate failures, particularly, independent/non-management directors and audit committee members (Srinivasan, 2005). Thus, we partition firm-years with female directors into three groups: (1) the proportion of female inside directors (*FEMINS\_DIR*), (2) the proportion of female independent directors (*FEMIND\_DIR*), and (3) the proportion of female audit committee members (*FEMAC\_DIR*). We use the above variables representing women's positions on corporate boards as test variables in Equation (3.1) and estimate the model separately for each variable. To test H2a, we examine the coefficient sign of the test

variable (i.e., female position on corporate boards). H2b states that the association between the position of female directors and the selection of gender-diverse engagement partners will be more pronounced in the period following the enactment of the gender quota law. We use the model given in Equation (3.2) to test H2b by conducting a joint test of coefficients on our test variable and the interaction variable, and using difference-in-differences analysis (same procedure as we used to test H1b).

#### *4.5.1 The effect of female inside directors on client-partner gender alignment*

Before the regression analysis, we started our investigation by comparing firm-years with higher proportion of *FEMINS\_DIR* and firm-years with lower proportion of *FEMINS\_DIR* based on the median value (6.25%) in Table 3.7. In particular, while we observe several differences between the characteristics of the two subsamples, we observe no statistical difference between a high and low proportion of inside female directors (*FEMINS\_DIR*) and the appointment of *GD\_AP*. This result stands in sharp contrast to those reported in Table 3.4, which suggest that corporate boards with a higher proportion of female directors are more likely to appoint gender-diverse engagement partners. Nonetheless, we implemented the PSM technique to mitigate structural differences between the two sub-samples using similar criteria to those discussed in section 4.2. The matching procedure eliminated all the observable differences as reported in Table 3.7.

Table 3.8 reports the results of system GMM regression using the matched sample in Table 3.7. Model 1 shows that the coefficient on female inside directors (*FEMINS\_DIR*) is negative and significant ( $\beta_2 = -0.382$ ,  $t = -8.15$ ). This finding suggests that female inside directors (*FEMINS\_DIR*) reduce the likelihood of appointing gender-diverse engagement partners (*GD\_AP*). These findings contradict prior research by Lee et al. (2019) suggesting that there is a positive link between the



gender of corporate board members and the gender of audit engagement partners. Model 2 in Table 3.8 estimates Equation (3.1) with an additional variable *QUOTA* and shows that the enactment of the gender quota law is positively associated with the appointment of gender-diverse engagement partners ( $\beta_3 = 0.137$ ,  $t = 10.70$ ). The coefficient of *FEMINS\_DIR* is negative and significant. Multivariate estimation of Equation (3.2) is reported in Model 3 to test H2b. Difference-in-differences analysis shows that the joint coefficient of *FEMINS\_DIR* and *FEMINS\_DIR*  $\times$  *QUOTA* is negative and highly significant ( $\beta_2 + \beta_4 = -1.181$ ,  $t = -7.44$ ). This finding suggests that the probability of appointing gender-diverse engagement partners further declined as the proportion of female inside directors increased in the post-gender quota period. Homophily is not the dominant argument driving the choice of audit partners by female inside directors. Female inside directors may be more prone to be aligned with the interests of board leaders and the top management team, including their preference for the audit partner.

**Table 3.7: Mean difference test between firm-years with high and low proportion of female inside directors for entire and matched samples**

Variable	Entire Sample			Matched Sample		
	Firm-years with high proportion of female inside directors	Firm-years with low proportion of female inside directors	t-test/Chi <sup>2</sup> <sup>a</sup>	Treatment	Control	t-test/Chi <sup>2</sup> <sup>a</sup>
<i>GD_AP</i> (%)	22.18	18.81	1.51	21.17	19.95	0.43
<i>BOA_SIZE</i> (number of directors) <sup>b</sup>	12.37	12.43	0.29	12.23	12.58	1.40
<i>BOA_IND</i> (%)	45.65	51.01	4.63***	49.33	48.22	0.76
<i>BOA_MEET</i> (number of meetings) <sup>b</sup>	7.01	6.89	0.71	6.91	6.89	0.08
<i>AC_SIZE</i> (number of audit committee members)	3.86	3.73	2.02**	3.77	3.80	0.47
<i>AC_IND</i> (%)	65.59	69.19	2.37**	68.48	67.25	0.64
<i>AC_MEET</i> (number of meetings) <sup>b</sup>	4.61	4.56	0.46	4.65	4.59	0.38
<i>DUAL</i> (%)	54.98	56.99	0.73	56.45	56.69	0.07
<i>FEM_CEO</i> (%)	2.93	0.58	3.29***	1.22	0.97	0.33
<i>FEM_CHAIR</i> (%)	8.81	1.31	6.37***	2.43	2.19	0.23
<i>CEO_TEN</i> (number of years) <sup>b</sup>	8.24	7.47	1.94*	8.12	7.64	1.40
<i>LEV</i> (%)	24.13	24.29	0.22	24.75	24.26	0.51
<i>ROA</i> (%)	4.34	4.53	0.77	4.42	4.24	0.58
<i>R&amp;D</i> (%)	1.86	3.30	5.09***	2.29	2.54	0.77
<i>FOR_ASSET</i> (%)	19.55	25.05	3.22***	22.68	21.58	0.51
<i>CROSS</i> (%)	27.89	26.24	0.67	27.74	28.47	0.23
<i>F_SIZE</i> (in billions of euros) <sup>b</sup>	24.851	16.168	4.57***	20.688	20.280	0.18
<i>TWOBIG</i> (%)	48.29	48.54	0.09	50.36	52.55	0.63
<i>SPEC_AF</i> (%)	73.74	62.53	4.34***	70.32	72.99	0.85
<i>TENURE_AF</i> (number of years) <sup>b</sup>	2.45	2.45	0.13	2.42	2.46	0.74
<i>SPEC_AP</i> (%)	7.50	10.49	1.87*	9.73	10.46	0.35
<i>CAREER_AP</i> (number of years) <sup>b</sup>	2.87	2.90	1.33	2.88	2.89	0.39
<i>TENURE_AP</i> (number of years) <sup>b</sup>	3.30	3.18	1.79*	3.22	3.23	0.17
<i>PUBSPEC_AP</i> (%)	78.79	73.18	2.36**	76.40	77.62	0.41
<i>PORTFOLIO_AP</i> (%)	71.45	62.83	3.31***	69.10	71.29	0.69
<i>Number of observations</i>	597	647		411	411	

This table provides results of the mean difference test to highlight structural differences between firm-years with proportion of female inside directors higher than the median level and firm-years with proportion of female inside directors lower than the median level and other variables from 2002 to 2017. PSM procedure is used to mitigate these structural differences between the two sub-samples (Rosenbaum & Rubin, 1983). The PSM procedure yields a total sample of 822 matched observations: 411 firm-years with high proportion of female inside directors (treatment group) and 411 firm-years with low proportion of female inside directors (comparison group). All variables are as defined in Table 3.1. \*\*\*, \*\*, \* denote significant results at 0.01, 0.05 and 0.10 levels, respectively. <sup>a</sup> t-values are reported for continuous variables and Chi-square values for dummy variables. <sup>b</sup> t-tests are based on natural logarithm-transformed values.

**Table 3.8: Regressions of gender-diverse engagement partners on the proportion of female inside directors and the quota law**

Variable	Expected Sign <sup>a</sup>	Model 1		Model 2		Model 3	
		Coef.	t-test	Coef.	t-test	Coef.	t-test
<i>Lag GD_AP</i>	?	0.860***	163.71	0.852***	114.79	0.837***	70.54
<i>FEMINS_DIR</i>	-	-0.382***	-8.15	-0.502***	-7.24	0.697***	5.78
<i>QUOTA</i>	+			0.137***	10.70	0.383***	12.22
<i>FEMINS_DIR</i> × <i>QUOTA</i>	-					-1.879***	-8.89
<i>BOA_SIZE</i>	+	0.006	0.60	-0.004	-0.28	-0.003	-0.23
<i>BOA_IND</i>	+	0.138***	9.41	0.087***	5.57	-0.001	-0.05
<i>BOA_MEET</i>	+	0.045***	7.67	0.047***	6.04	0.041***	4.40
<i>AC_SIZE</i>	+	0.001	0.22	-0.007*	-1.95	-0.014***	-3.86
<i>AC_IND</i>	+	-0.058***	-3.99	-0.083***	-5.84	-0.094***	-5.84
<i>AC_MEET</i>	+	0.001	0.09	-0.031***	-4.87	-0.022*	-1.67
<i>DUAL</i>	-	-0.026***	-4.54	-0.046***	-6.24	-0.062***	-5.92
<i>FEM_CEO</i>	+	-0.003	-0.14	0.006	0.33	0.066	1.29
<i>FEM_CHAIR</i>	+	0.051***	3.98	0.060***	4.60	0.111***	4.48
<i>CEO_TEN</i>	+	0.026***	9.60	0.025***	7.82	0.010*	1.97
<i>LEV</i>	+	-0.018	-0.98	-0.037	-1.48	-0.024	-0.93
<i>ROA</i>	+	0.243***	3.18	0.183**	2.34	0.377***	3.36
<i>R&amp;D</i>	+	-0.254***	-3.64	-0.430***	-6.47	-0.386***	-5.06
<i>FOR_ASSET</i>	+	-0.030***	-3.77	-0.007	-0.82	0.025*	1.88
<i>CROSS</i>	+	0.018***	2.80	0.031***	3.06	0.028**	2.04
<i>CRISIS</i>	+	0.033***	10.03	0.087***	15.07	0.144***	19.50
<i>F_SIZE</i>	+	0.011***	3.81	0.019***	6.18	0.015***	5.14
<i>TWOBIG</i>	-	-0.016***	-3.29	-0.004	-0.46	0.012	1.31
<i>SPEC_AF</i>	-	-0.044***	-5.75	-0.038***	-3.73	-0.032**	-2.41
<i>TENURE_AF</i>	+	0.035***	7.10	0.009	1.30	0.009	1.07
<i>SPEC_AP</i>	-	-0.018*	-1.86	-0.023**	-2.01	-0.013	-0.72
<i>CAREER_AP</i>	-	-0.052***	-6.18	-0.049***	-4.66	-0.060***	-4.83
<i>TENURE_AP</i>	+	-0.004***	-2.68	-0.010***	-5.77	-0.018***	-6.64
<i>PUBSPEC_AP</i>	+	0.035***	5.04	0.027***	3.49	0.008	0.79
<i>PORTFOLIO_AP</i>	-	-0.025***	-3.29	-0.027**	-2.45	-0.013	-1.03
Intercept	?	-0.167***	-3.58	-0.102*	-1.67	-0.025	-0.36
Industry	?		Yes		Yes		Yes
Number of observations			786		786		786
Fisher (Prob > F, <i>p</i> -value):		11565.62 ( <i>p</i> = 0.000)		18959.76 ( <i>p</i> = 0.000)		12626.77 ( <i>p</i> = 0.000)	
Arellano–Bond test AR(1) ( <i>z</i> , <i>p</i> -value):		-5.02 ( <i>p</i> = 0.000)		-5.20 ( <i>p</i> = 0.000)		-5.14 ( <i>p</i> = 0.000)	
Arellano–Bond test AR(2) ( <i>z</i> , <i>p</i> -value):		0.01 ( <i>p</i> = 0.992)		0.68 ( <i>p</i> = 0.499)		0.41 ( <i>p</i> = 0.679)	
Sargan test (Chi-square, <i>p</i> -value):		727.67 ( <i>p</i> = 0.000)		718.25 ( <i>p</i> = 0.000)		665.14 ( <i>p</i> = 0.000)	
Hansen test (Chi-square, <i>p</i> -value):		61.82 ( <i>p</i> = 0.308)		67.13 ( <i>p</i> = 0.147)		69.25 ( <i>p</i> = 0.194)	
Joint test: <i>FEMINS_DIR</i> + ( <i>FEMINS_DIR</i> × <i>QUOTA</i> )						-1.181***	-7.44

This table provides results of the system GMM regressions of gender-diverse audit partners on the proportion of female inside directors and the quota law using propensity score matched sample. Arellano–Bond tests examines if the data process is auto-regressive. The Sargan test examines if our system GMM model is over-identified. The Hansen test of exogeneity of the instruments subset tests the null hypothesis of exogenous instruments. All variables are as defined in Table 3.1. \*\*\*, \*\*, \* denote significant results at 0.01, 0.05 and 0.10 levels, respectively.

#### 4.5.2 *The effect of female independent directors on client-partner gender alignment*

In Table 3.9 and Table 3.10, we test the effect of the proportion of female independent directors (*FEMIND\_DIR*) on the choice of gender-diverse audit partners (*GD\_AP*). We start by comparing firm-years with higher proportion of *FEMIND\_DIR* and firm-years with lower proportion of *FEMIND\_DIR* based on the median value (5.56%). Unlike the findings reported in Table 3.7 concerning female inside directors (*FEMINS\_DIR*), we find that firms with a higher proportion of *FEMIND\_DIR* on corporate boards positively affect the likelihood of appointing *GD\_AP* (Table 3.9). In addition, we observe several differences between the characteristics of the two subsamples, and therefore we implement PSM techniques using criteria described in section 4.2. The results of the matched sample in Table 3.9 show that all the observable differences disappear after matching is applied. However, *GD\_AP* remains significantly different for the two sub-samples, suggesting that the choice of gender-diverse audit partners is inherently linked to the presence of female independent directors. We re-estimate the model given in Equation (3.1) by considering *FEMIND\_DIR* as our test variable.

Model 1 of Table 3.10 reports the results of system GMM regression and shows that the coefficient of *FEMIND\_DIR* is positive and significant ( $\beta_2 = 0.289$ ,  $t = 9.20$ ), suggesting that female independent directors positively influence the appointment of *GD\_AP*. The effect of the gender quota law on the selection of *GD\_AP* is examined by introducing the additional variable *QUOTA* in Equation (3.1). Model 2 in Table 3.10 shows that the coefficients of both *QUOTA* and *FEMIND\_DIR* are positive and statistically significant. To test H2b, we examine the marginal effect of the enactment of the gender quota law on the association between *FEMIND\_DIR* and *GD\_AP* by adding the interaction term between *FEMIND\_DIR* and *QUOTA* to Equation (3.2).

**Table 3.9: Mean difference test between firm-years with high and low proportion of female independent directors for entire and matched samples**

Variables	Entire Sample			Matched Sample		
	Firm-years with high proportion of female independent directors	Firm-years with low proportion of female independent directors	t-test/Chi <sup>2</sup> <sup>a</sup>	Treatment	Control	t-test/Chi <sup>2</sup> <sup>a</sup>
<i>GD_AP</i>	26.79	13.56	5.99***	23.10	15.49	2.58***
<i>BOA_SIZE</i> (number of directors) <sup>b</sup>	12.65	12.13	2.81***	12.40	12.46	0.25
<i>BOA_IND</i> (%)	53.07	43.56	8.37***	48.13	48.24	0.07
<i>BOA_MEET</i> (number of meetings) <sup>b</sup>	7.24	6.63	3.83***	6.78	6.82	0.18
<i>AC_SIZE</i> (number of audit committee members)	3.88	3.70	2.95***	3.81	3.78	0.39
<i>AC_IND</i> (%)	72.44	62.19	6.87***	66.63	67.79	0.61
<i>AC_MEET</i> (number of meetings) <sup>b</sup>	4.84	4.31	4.42***	4.54	4.75	1.23
<i>DUAL</i> (%)	59.82	51.99	2.85***	53.80	55.49	0.45
<i>FEM_CEO</i> (%)	1.19	2.23	1.45	1.97	1.69	0.28
<i>FEM_CHAIR</i> (%)	4.32	5.42	0.93	4.79	4.22	0.36
<i>CEO_TEN</i> (number of years) <sup>b</sup>	8.43	7.20	3.10***	8.18	7.48	1.22
<i>LEV</i> (%)	24.38	24.05	0.43	24.38	24.73	0.35
<i>ROA</i> (%)	4.38	4.49	0.46	4.50	4.64	0.41
<i>R&amp;D</i> (%)	2.78	2.46	1.10	2.75	2.43	0.87
<i>FOR_ASSET</i> (%)	16.99	28.31	6.73***	23.61	24.15	0.23
<i>CROSS</i> (%)	25.30	28.87	1.45	27.32	28.17	0.25
<i>F_SIZE</i> (in billions of euros) <sup>b</sup>	19.106	21.508	1.26	20.763	21.045	0.93
<i>TWOBIG</i> (%)	48.96	47.85	0.40	44.79	44.78	0.00
<i>SPEC_AF</i> (%)	65.33	70.49	1.99**	67.04	68.17	0.32
<i>TENURE_AF</i> (number of years) <sup>b</sup>	2.60	2.29	10.02***	2.43	2.47	0.95
<i>SPEC_AP</i> (%)	7.74	10.53	1.75*	8.73	10.70	0.89
<i>CAREER_AP</i> (number of years) <sup>b</sup>	2.91	2.86	2.56***	2.89	2.88	0.57
<i>TENURE_AP</i> (number of years) <sup>b</sup>	3.42	3.04	5.29***	3.252	3.18	0.74
<i>PUBSPEC_AP</i> (%)	79.61	71.77	3.31***	74.37	74.65	0.09
<i>PORTFOLIO_AP</i> (%)	69.19	64.43	1.82*	63.94	64.79	0.23
<i>Number of observations</i>	667	577		346	346	

This table provides results of the mean difference test to highlight structural differences between firm-years with proportion of female independent directors higher than the median level and firm-years with proportion of female independent directors lower than the median level and other variables from 2002 to 2017. PSM procedure is used to mitigate these structural differences between the two sub-samples (Rosenbaum & Rubin, 1983). The PSM procedure yields a total sample of 692 matched observations: 346 firm-years with high proportion of female independent directors (treatment group) and 346 firm-years with low proportion of female independent directors (comparison group). All variables are as defined in Table 3.1. \*\*\*, \*\*, \* denote significant results at 0.01, 0.05 and 0.10 levels, respectively. <sup>a</sup> t-values are reported for continuous variables and Chi-square values for dummy variables. <sup>b</sup> t-tests are based on natural logarithm-transformed values.

**Table 3.10: Regressions of gender-diverse engagement partners on the proportion of female independent directors and the quota law**

Variables	Expected Sign <sup>a</sup>	Model 1		Model 2		Model 3	
		Coef.	t-test	Coef.	t-test	Coef.	t-test
<i>Lag GD_AP</i>	+	0.851***	96.62	0.844***	117.56	0.846***	106.12
<i>FEMIND_DIR</i>	+	0.289***	9.20	0.087**	2.26	-0.494***	-8.81
<i>QUOTA</i>	+			0.078***	8.66	-0.158***	-6.00
<i>FEMIND_DIR</i> × <i>QUOTA</i>	+					1.228***	10.03
<i>BOA_SIZE</i>	+	0.036***	2.75	0.035***	2.56	-0.009	-0.58
<i>BOA_IND</i>	+	0.041*	1.82	0.071***	2.99	0.018	0.88
<i>BOA_MEET</i>	+	0.033***	5.88	0.030***	4.21	0.027***	3.91
<i>AC_SIZE</i>	+	-0.004*	-2.14	-0.009***	-2.75	0.006**	2.12
<i>AC_IND</i>	+	-0.023	-1.56	-0.033**	-2.14	-0.022	-1.32
<i>AC_MEET</i>	+	0.015***	2.60	0.006	0.81	0.034***	4.02
<i>DUAL</i>	-	-0.013**	-2.29	-0.018***	-2.42	-0.010	-1.42
<i>FEM_CEO</i>	+	-0.001	-0.02	-0.041*	-1.84	0.062***	2.57
<i>FEM_CHAIR</i>	+	0.032**	2.23	0.022*	1.75	0.070***	3.78
<i>CEO_TEN</i>	+	0.011***	3.41	0.010***	2.95	0.017***	4.30
<i>LEV</i>	+	-0.023	-0.97	-0.030	-1.07	-0.021	-0.71
<i>ROA</i>	+	0.268***	3.20	0.287***	3.85	0.280***	2.81
<i>R&amp;D</i>	+	-0.108	-1.56	-0.178**	-2.26	-0.073	-0.90
<i>FOR_ASSET</i>	+	0.025**	2.01	0.009	0.67	0.013	0.99
<i>CROSS</i>	+	0.019**	2.22	0.019**	2.45	0.00944	0.99
<i>CRISIS</i>	+	0.048***	11.06	0.066***	9.74	0.047***	7.11
<i>F_SIZE</i>	+	0.010***	3.28	0.009***	2.80	0.010**	2.46
<i>TWOBIG</i>	-	-0.020***	-3.26	-0.010	-1.37	-0.006	-0.68
<i>SPEC_AF</i>	-	-0.011	-1.11	-0.014	-1.45	-0.027**	-2.25
<i>TENURE_AF</i>	+	-0.003	-0.60	-0.011**	-2.51	-0.006	-0.75
<i>SPEC_AP</i>	-	-0.052***	-5.20	-0.059***	-5.87	-0.044***	-3.11
<i>CAREER_AP</i>	-	-0.093***	-8.25	-0.086***	-6.53	-0.084***	-6.38
<i>TENURE_AP</i>	+	0.006***	6.05	0.006***	6.31	0.003*	1.94
<i>PUBSPEC_AP</i>	+	0.034***	6.13	0.026***	3.53	0.025***	3.16
<i>PORTFOLIO_AP</i>	-	-0.032***	-3.76	-0.021**	-2.01	-0.018**	-2.19
Intercept	?	-0.068	-1.22	-0.016	-0.25	0.015	0.22
Industry	?	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations		646	646	646	646	646	646
Fisher (Prob > F, <i>p</i> -value):		9337.78 ( <i>p</i> = 0.000)	2678.86 ( <i>p</i> = 0.000)	2553.61 ( <i>p</i> = 0.000)			
Arellano–Bond test AR(1) ( <i>z</i> , <i>p</i> -value):		-3.96 ( <i>p</i> = 0.000)	-3.99 ( <i>p</i> = 0.000)	-4.03 ( <i>p</i> = 0.000)			
Arellano–Bond test AR(2) ( <i>z</i> , <i>p</i> -value):		0.04 ( <i>p</i> = 0.971)	1.07 ( <i>p</i> = 0.185)	-0.63 ( <i>p</i> = 0.195)			
Sargan test (Chi-square, <i>p</i> -value):		717.64 ( <i>p</i> = 0.000)	709.53 ( <i>p</i> = 0.000)	687.99 ( <i>p</i> = 0.000)			
Hansen test (Chi-square, <i>p</i> -value):		60.37 ( <i>p</i> = 0.355)	62.38 ( <i>p</i> = 0.260)	60.08 ( <i>p</i> = 0.297)			
Joint test: <i>FEMIND_DIR</i> + ( <i>FEMIND_DIR</i> × <i>QUOTA</i> )				0.734***		8.72	

This table provides results of the system GMM regressions of gender-diverse audit partners on the proportion of female independent directors and the quota law using propensity score matched sample. Arellano-Bond tests examines if the data process is auto-regressive. The Sargan test examines if our system GMM model is over-identified. The Hansen test of exogeneity of the instruments subset tests the null hypothesis of exogenous instruments. All variables are as defined in Table 3.1. \*\*\*, \*\*, \* denote significant results at 0.01, 0.05 and 0.10 levels, respectively.

The results of the difference-in-differences analysis show the joint coefficient of *QUOTA* and  $FEMIND\_DIR \times QUOTA$  is positive and statistically significant ( $\beta_2 + \beta_4 = 0.734$ ,  $t = 8.72$ ). Empirical results reported in Model 3 of Table 3.10 suggest that the positive association between *FEMIND\_DIR* and the choice of *GD\_AP* becomes even stronger in the post-quota period.

#### 4.5.3 *The effect of female audit committee members on client-partner gender alignment*

Finally, we test the link between the proportion of female audit committee members (*FEMAC\_DIR*) and the choice of gender-diverse engagement partners (*GD\_AP*). We first use the median value of *FEMAC\_DIR* to divide our sample into firm-years with a higher proportion of *FEMAC\_DIR* and firm-years with a lower proportion of *FEMAC\_DIR*. We then use the mean difference test to examine any structural differences between the two subsamples. Along with the several differences between the two subsamples, Table 3.11 shows that a high proportion of female audit committee members (*FEMAC\_DIR*) increases the likelihood of appointing gender-diverse engagement partners. We implement PSM techniques using the criteria described in section 4.2 to mitigate the impact of observable differences between the characteristics of the two subsamples. The implementation of the matching procedure reduces all observable differences except for the appointment of gender-diverse engagement partners, which remains significantly different from one sub-sample to the other, suggesting that the appointment of gender-diverse engagement partners is inherently associated with the proportion of female audit committee members. We use this matched sample to estimate the model given in Equation (3.1) using *FEMAC\_DIR* as our test variable. Model 1 of Table 3.12 shows that the coefficient of *FEMAC\_DIR* is positively and highly significant ( $\beta_2 = 0.468$ ,  $t = 9.96$ ), indicating that the proportion of female audit committee members positively influences the appointment of gender-

diverse engagement partners (*GD\_AP*). The results of Model 2 in Table 3.12 show that the coefficients of both *QUOTA* and *FEMAC\_DIR* are positive and statistically significant. In Model 3, an interaction term between *FEMAC\_DIR* and *QUOTA* is introduced in Equation (3.2) to measure the marginal effect of the enactment of the gender quota law on the relationship between the proportion of audit committee members (*FEMAC\_DIR*) and the appointment of gender-diverse engagement partners (*GD\_AP*). Results of the difference-in-differences analysis show that the joint coefficient of *QUOTA* and  $FEMAC\_DIR \times QUOTA$  is positive and statistically significant ( $\beta_2 + \beta_4 = 0.504$ ,  $t = 6.14$ ). Empirical results reported in Model 3 demonstrate that the positive link between *FEMAC\_DIR* and *GD\_AP* is more pronounced in the post-quota period. The empirical results on the effect of female audit committee membership mirror the results of the effect of female independent directors.

To summarize, findings reported in Table 3.7–Table 3.12 provide considerable evidence that female directors differ with respect to the selection of gender-diverse engagement partners according to their position on corporate boards. In particular, our estimations suggest that female board members involved in the monitoring function of corporate boards are more likely to appoint gender-diverse engagement partners. Conversely, we report that female inside directors reduce the likelihood of appointing gender-diverse audit partners. Contrary to the gender similarity (homophily) argument alone, our results suggest that female board members—who are more concerned with financial reporting quality—choose female lead engagement partners because of their higher quality audits, as reported by prior studies (Hardies et al., 2016; Ittonen & Peni, 2012; Ittonen et al., 2013; Kung et al., 2019; Lee et al., 2019; Lennox & Wu, 2018; Nekhili, Javed, & Chtioui, 2018).



**Table 3.11: Mean difference test between firm-years with high and low proportion of female audit committee members for entire and matched samples**

Variables	Entire Sample			Matched Sample		
	Firm-years with high proportion of female audit committee members	Firm-years with low proportion of female audit committee members	t-test/Chi <sup>2</sup> <sup>a</sup>	Treatment	Control	t-test/Chi <sup>2</sup> <sup>a</sup>
<i>GD_AP</i>	28.64	13.10	7.06***	27.42	15.59	3.96***
<i>BOA_SIZE</i> (number of directors) <sup>b</sup>	12.90	11.95	5.06***	12.35	12.41	0.24
<i>BOA_IND</i> (%)	50.83	46.39	3.82***	47.82	49.36	1.00
<i>BOA_MEET</i> (number of meetings) <sup>b</sup>	7.23	6.67	3.57***	6.96	7.01	0.21
<i>AC_SIZE</i> (number of audit committee members)	4.13	3.49	10.98***	3.64	3.73	1.32
<i>AC_IND</i> (%)	69.69	65.63	2.69***	67.69	67.69	0.00
<i>AC_MEET</i> (number of meetings) <sup>b</sup>	4.86	4.34	4.35***	4.50	4.59	0.60
<i>DUAL</i> (%)	58.26	54.00	1.54	55.64	54.84	0.22
<i>FEM_CEO</i> (%)	2.13	1.31	1.14	1.88	1.34	0.58
<i>FEM_CHAIR</i> (%)	4.58	5.10	0.43	5.11	4.84	0.17
<i>CEO_TEN</i> (number of years) <sup>b</sup>	8.42	7.32	2.76***	8.32	7.62	1.29
<i>LEV</i> (%)	25.22	23.31	2.51**	23.86	24.44	0.58
<i>ROA</i> (%)	4.11	4.73	2.55***	4.43	4.42	0.07
<i>R&amp;D</i> (%)	2.42	2.81	1.38	2.46	2.38	0.21
<i>FOR_ASSET</i> (%)	16.19	27.96	7.00***	20.96	23.10	0.93
<i>CROSS</i> (%)	29.29	25.04	1.73*	28.49	27.96	0.16
<i>F_SIZE</i> (in billions of euros) <sup>b</sup>	24.331	16.672	4.02***	17.642	19.931	1.01
<i>TWOBIG</i> (%)	47.14	49.49	0.85	46.24	44.62	0.44
<i>SPEC_AF</i> (%)	66.61	68.85	0.86	66.13	68.55	0.70
<i>TENURE_AF</i> (number of years) <sup>b</sup>	2.58	2.34	7.92***	2.45	2.47	0.40
<i>SPEC_AP</i> (%)	9.33	8.88	0.28	9.41	9.14	0.13
<i>CAREER_AP</i> (number of years) <sup>b</sup>	2.92	2.86	2.90***	2.89	2.86	0.84
<i>TENURE_AP</i> (number of years) <sup>b</sup>	3.39	3.10	4.06***	3.19	3.21	0.17
<i>PUBSPEC_AP</i> (%)	80.52	71.62	3.76***	76.34	75.54	0.26
<i>PORTFOLIO_AP</i> (%)	75.12	59.53	6.03***	65.59	66.39	0.23
<i>Number of observations</i>	606	638		364	364	

This table provides results of the mean difference test to highlight structural differences between firm-years with proportion of female audit committee members higher than the median level and firm-years with proportion of female audit committee members lower than the median level and other variables from 2002 to 2017. PSM procedure is used to mitigate these structural differences between the two sub-samples (Rosenbaum & Rubin, 1983). The PSM procedure yields a total sample of 728 matched observations: 364 firm-year observations with high proportion of female audit committee members (treatment group) and 364 firm-years with low proportion of female audit committee members (comparison group). All variables are as defined in Table 3.1. \*\*\*, \*\*, \* denote significant results at 0.01, 0.05 and 0.10 levels, respectively. <sup>a</sup>t-values are reported for continuous variables and Chi-square values for dummy variables. <sup>b</sup>t-tests are based on natural logarithm-transformed values.

**Table 3.12: Regressions of gender-diverse engagement partners on the proportion of female audit committee members**

Variables	Expected Sign <sup>a</sup>	Model 1		Model 2		Model 3	
		Coef.	t-test	Coef.	t-test	Coef.	t-test
<i>Lag GD_AP</i>	?	0.833***	71.95	0.808***	63.02	0.855***	66.11
<i>FEMAC_DIR</i>	+	0.468***	9.96	0.418***	9.90	0.172***	7.27
<i>QUOTA</i>	+			0.136***	7.17	-0.095***	-4.20
<i>FEMAC_DIR</i> × <i>QUOTA</i>	+					0.331***	4.36
<i>BOA_SIZE</i>	+	-0.024	-1.51	-0.011	-0.76	0.001	0.06
<i>BOA_IND</i>	+	0.063**	2.06	0.021	0.67	0.092***	3.68
<i>BOA_MEET</i>	+	0.037***	3.31	0.033**	2.53	0.030***	3.65
<i>AC_SIZE</i>	+	0.014***	3.05	0.011**	2.09	0.009**	2.48
<i>AC_IND</i>	+	-0.083***	-4.62	-0.080***	-3.92	-0.063***	-4.39
<i>AC_MEET</i>	+	-0.004	-0.38	-0.018	-1.53	-0.001	-0.06
<i>DUAL</i>	-	-0.017*	-1.81	-0.029**	-2.46	-0.003	-0.30
<i>FEM_CEO</i>	+	-0.021	-0.76	-0.005	-0.18	-0.016	-0.94
<i>FEM_CHAIR</i>	+	0.031*	1.84	0.027	1.45	-0.005	-0.33
<i>CEO_TEN</i>	+	0.007	1.42	0.005	0.77	-0.002	-0.50
<i>LEV</i>	+	-0.089***	-2.88	-0.055	-1.57	-0.052	-1.75
<i>ROA</i>	+	0.260***	2.57	0.275**	2.51	0.066	0.67
<i>R&amp;D</i>	+	-0.391***	-6.11	-0.514***	-4.95	-0.377***	-4.79
<i>FOR_ASSET</i>	+	0.035*	1.81	0.057**	2.53	0.017	1.48
<i>CROSS</i>	+	-0.009	-0.80	0.013	1.16	-0.015*	-1.79
<i>CRISIS</i>	+	0.063***	12.06	0.110***	15.59	0.048***	10.65
<i>F_SIZE</i>	+	0.006	1.44	0.011**	2.34	0.005	1.22
<i>TWOBIG</i>	-	-0.013*	-1.75	-0.008	-0.81	-0.018**	-2.48
<i>SPEC_AF</i>	-	-0.034***	-2.87	-0.035**	-2.48	-0.035***	-3.10
<i>TENURE_AF</i>	+	0.058***	5.12	0.039***	3.29	0.043***	5.21
<i>SPEC_AP</i>	-	-0.022	-1.32	-0.016	-0.82	-0.008	-0.56
<i>CAREER_AP</i>	-	-0.051***	-3.94	-0.061***	-4.20	-0.047***	-4.01
<i>TENURE_AP</i>	+	-0.003	-1.11	-0.002	-0.60	-0.001	-0.12
<i>PUBSPEC_AP</i>	+	0.029***	4.11	0.028***	2.88	0.029***	4.23
<i>PORTFOLIO_AP</i>	-	-0.004	-0.29	-0.003	-0.28	-0.011	-1.06
Intercept	?	-0.137*	-1.67	-0.164	-1.63	-0.090*	-1.97
Industry	?		Yes		Yes		Yes
Number of observations			684		684		684
Fisher (Prob > F, <i>p</i> -value):		7645.09 ( <i>p</i> = 0.000)		8609.61 ( <i>p</i> = 0.000)		8593.00 ( <i>p</i> = 0.000)	
Arellano–Bond test AR(1) ( <i>z</i> , <i>p</i> -value):		-4.51 ( <i>p</i> = 0.000)		-4.44 ( <i>p</i> = 0.000)		-4.51 ( <i>p</i> = 0.000)	
Arellano–Bond test AR(2) ( <i>z</i> , <i>p</i> -value):		-0.51 ( <i>p</i> = 0.571)		-0.48 ( <i>p</i> = 0.507)		-0.78 ( <i>p</i> = 0.433)	
Sargan test (Chi-square, <i>p</i> -value):		695.04 ( <i>p</i> = 0.000)		690.66 ( <i>p</i> = 0.000)		709.55 ( <i>p</i> = 0.000)	
Hansen test (Chi-square, <i>p</i> -value):		54.40 ( <i>p</i> = 0.535)		57.63 ( <i>p</i> = 0.378)		56.30 ( <i>p</i> = 0.426)	
Joint test: <i>FEMAC_DIR</i> + ( <i>FEMAC_DIR</i> × <i>QUOTA</i> )						0.504***	6.14

This table provides results of the system GMM regressions of gender-diverse audit partners on the proportion of female audit committee members and the quota law using propensity score matched sample. Arellano-Bond tests examines if the data process is auto-regressive. The Sargan test examines if our system GMM model is over-identified. The Hansen test of exogeneity of the instruments subset tests the null hypothesis of exogenous instruments. All variables are as defined in Table 3.1. \*\*\*, \*\*, \* denote significant results at 0.01, 0.05 and 0.10 levels, respectively.

Moreover, our results provide clear evidence indicating that the link between each variable representing women's presence on corporate boards and the selection of gender-diverse audit partners is more pronounced in the period following the introduction of the gender quota law.

## **5 Summary and conclusion**

An important characteristic of audited financial reports is that they are intended to be used by heterogeneous groups of stakeholders with divergent interests. The reasons why audit clients select a specific external auditor are complex, because audit quality is a multidimensional construct and the demand for audit quality is also multifaceted. Client preference for engaging external auditors may differ between outside stakeholders and firm directors, partly because of differences in the perception of factors affecting audit quality and client satisfaction. Outside stakeholders have a limited ability to ascertain the quality of audit services. They see that statutory audits are carried out by independent audit firms and rely on the characteristics of the audit firm to form their perception of audit quality. However, some dimensions of the audit process remain largely unobservable to them. Client directors—who closely interact with audit engagement partners—perceive audit as a process carried out by people rather than a mere output generated by a monolithic entity called the audit firm. One particular limitation of prior studies on auditor selection at audit firm level is that they tend to ignore personal interaction between the primary parties involved in the auditor selection process. In this regard, there could be several reasons why the board of directors may prefer to select one audit partner rather than another.

The present study examines whether gender-diverse board of directors select gender-diverse engagement partners in the French joint audit setting. In addition to the well-known financial attributes of audit clients, we include a wide range of client

governance, audit firm and partner attributes in our study. We also use appropriate econometrical procedures to alleviate concerns about endogeneity issues arising from multiple sources. Based on our different measures of board gender diversity, we provide consistent empirical evidence that the gender of corporate board members and the gender of audit engagement partners are significant determinants of client-partner gender alignment. Our empirical findings show that gender-diverse boards tend to select gender-diverse engagement partners. Further, we conjecture that the choice of engagement partners is likely to be affected by the disparity of incentives between those board members who are more involved in the board's monitoring function and those who are not (i.e., inside directors). The empirical findings support our conjecture by showing that the demand for gender-diverse engagement partners is mainly driven by female independent directors and female audit committee members. On the other hand, female inside directors are negatively associated with gender-diverse engagement partners. Female inside directors may be more prone to be closely aligned with the interests of board leaders and the top management team, including their preference for the audit partner. Moreover, as our sample period includes the enactment of the gender quota law in 2011, the analysis of our descriptive statistics reveals that the virtue of the gender quota legislation is not limited to the propensity of French firms to appoint female directors to monitoring positions but has substantially increased the demand for gender-diverse engagement partners. We use difference-in-differences methodology to examine the moderating effects of the gender quota legislation on the link between gender-diverse boards and the choice of gender-diverse engagement partners. Our multivariate analyses document that the influence of the proportion of female board members and the position of female board members on the selection of gender-diverse engagement partners is more pronounced in the post-gender quota period.

This study responds to the call for evidence on how the client's gender profile affects the partner-client assignment process (Lennox & Wu, 2018). While there is little evidence on how the personal attributes of people involved in external auditor selection affect client-partner alignments (mainly in the U.S. setting), our findings nevertheless complement prior research suggesting that similarity of audit client and audit partner attributes positively affect audit partner selection/assignment decisions (Berglund & Eshleman, 2019; Lee et al., 2019). Specifically, the present study based on the French mandatory joint audit setting complements Lee et al. (2019) by providing evidence that corporate board gender positively affects audit partner gender. We extend the prior literature and go beyond the homophily argument by distinguishing female directors according to their position on the corporate board. Based on comprehensive analyses of the effect of board gender diversity on partner-client gender alignment, findings reported in this study provide compelling evidence that female directors appointed to monitoring positions on the board, compared to female inside directors, tend to select higher quality "auditor pairs" (i.e., gender-diverse engagement partners). These findings are more pronounced following the enactment of the 2011 gender quota law.

The evidence presented in this study adds to our understanding of how factors affecting selection/appointment of male and female audit partners and may inform various stakeholders interested in external auditor assignments. As this study focuses on the largest French firms listed on SBF 120 index, its findings may not be valid for small and mid-sized French firms. An inherent limitation of the present research is that our data does not permit us to disentangle the choice of same-gender audit partners, due to lack of firm-year observations with two female audit partners. Future research may overcome this limitation by expanding the analysis to the entire population of French listed firms. While our study suggests that female directors who are in a better position

to influence the board's monitoring function are likely to select gender-diverse engagement partners, these results also invite future research to examine whether and how external stakeholders (e.g., shareholders, creditors, etc.) react to the appointment of male and female audit partners.

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## **General conclusion**

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This dissertation is motivated by the “people factor” perspective of audit process and auditor selection. We explore the role of audit partner gender in French mandatory joint audit environment, where two engagement partners are assigned by distinct audit firms to jointly administer the audit of a client. We aim to examine whether gender-diverse audit partners provide higher audit quality compared with same gender audit partners. We seek to contribute to the auditing literature that focuses on audit quality and client-partner alignment decisions at engagement partner level. Specifically, we ask three main research questions. We started our investigation in the first chapter by asking whether the combination of a female and a male audit engagement partners influences the audit fee compared to a pair of male engagement partners. The second chapter examines whether gender-diverse engagement partners constrain more discretionary accounting practices as compared to all-male engagement partners. The third chapter examines if gender profile of audit clients affect audit partner selection/assignment decisions.

The first chapter begins exploring French joint audit setting by examining audit fee as an input-based measure of audit quality. This chapter strives to investigate whether the combination of a female and a male audit engagement partner in the joint auditor pair composition influences the audit fees in comparison with a pair of male engagement partners. In doing so, we use a sample derived from all the listed companies in the CAC All-Shares index over the period 2002 to 2010. We used audited financial statements to manually collect the names of audit partners from signed audit reports. We manually collected the names of audit engagement partners and audit fee data from firms’ annual reports. We also add audit partner attributes such as

experience, industry expertise, portfolio of audited assets and public specialization in our model to mitigate the concerns that our variable of interest does not capture other individual partner specific variables and we use PSM procedure to tackle selection problem. We report that only 18.31 percent of firm-years have male-female lead audit partners. Our multivariate analyses show that gender of audit partners is a key determinant of audit fees and having a woman as a joint audit engagement partner results in an audit fee premium. Further, we demonstrate that male-female joint audit partners command significantly higher audit fees in a more complex environment (i.e., post-IFRS adoption period). It appears that gender-diverse audit partners outperform two-male audit partners in terms of audit fee premium only when they are appointed by equally competitive audit firms (Big/Big or Big/non-Big). Collectively, we find that gender composition of auditor pair is only relevant to audit fees when joint audit firms have the ability split the audit task equally. Thus, our empirical findings highlight the importance of audit firm size while examining audit fees.

The second chapter of this dissertation concentrates on the issue of earnings management, which is influenced by the external auditing and is a common output-based measure of audit quality. This chapter aims to unveil whether higher audit fees (input to audit process) charged by gender-diverse audit partners translate into lower discretionary accruals (output of audit process). We use a sample derived from the listed companies on the SBF 120 index over the period 2002 to 2017 inclusive. We also add audit committee characteristics in our regression because corporate boards delegate their financial oversight responsibilities to a subcommittee of the board (i.e., audit committee). In this chapter, we observe that on average 20.13% of firm years have gender-diverse engagement partners. Our descriptive analysis show a positive and statistically significant trend for male-female audit partners as the proportion of such

audit engagements increased from 11.12% to 28.32% during the sample period. We find that gender-diverse engagement partners are associated with smaller discretionary accruals. This negative association is more pronounced in the post-IFRS adoption period, which has been conducive to aggressive earnings management in France. More importantly, we find that gender-diverse audit partners constrain earnings management irrespective of composition of joint audit firms. Overall, the empirical evidence of chapter 2 is consistent with our argument that gender-diverse engagement partners possess diverse knowledge, skill and abilities, which in turn promote effective monitoring and collaborative behavior in detecting and curtailing excessive earnings management. We confirmed the robustness of these results by using a PSM procedure, alternative estimation methods and engagement partner switch analyses.

Finally, the third chapter of this dissertation aims to reveal factors affecting the demand of gender-diverse audit partners. In the context of recent gender quota legislation aimed at promoting gender diversity in top corporate positions of French boards, we are interested to investigate whether gender profile of audit clients affect the likelihood of selecting/assigning gender-diverse audit partners. To answer our research questions, we use a sample derived from listed companies on the SBF 120 index over the period 2002 to 2017 and control for a wide range of financial and governance attributes of audit clients, and audit firm and partner attributes in our model. Broadly consistent with gender similarity (homophily) argument of Ibarra (1992), our initial results shows that gender-diverse boards prefer to appoint gender-diverse engagement partners. These findings remain consistent across four measures of board gender diversity. We go beyond the homophily argument by distinguishing female directors according to their position on the corporate board. We find that female board members who are involved in the board's monitoring function are more likely to appoint gender-

diverse engagement partners, whereas female inside directors reduce the likelihood of appointing gender-diver audit partners. Female inside directors seems to be more prone to aligned with the interests of board leaders and the top management team, including their preference for the audit partner. Our empirical results imply that while examining the client-partner assignment process, female directors should not be treated as a homogeneous group. Using difference-in-differences methodology, we also find that the aforementioned associations are more pronounced in the period following the introduction of gender quota law.

Collectively, the empirical findings of the current dissertation—based on both input- and out-based measures of audit quality—provide considerable evidence that gender-diverse engagement partners provide higher quality audits. As DeFond and Zhang (2014) elaborate that audit quality is a component of financial statement quality, therefore, our findings could be interpreted to mean that male-female joint audit partners improve financial statement quality of their clients. From audit demand perspective, comprehensive analyses of client-partner gender alignments provide compelling evidence that female independent directors and female audit committee members—who are involved in the monitoring function of corporate boards—tend to select higher quality “auditor pairs” (i.e., gender-diverse engagement partners). In summary, empirical evidence of this dissertation strongly suggest that female directors appointed on monitoring positions of the board—who are more concerned with financial reporting quality—choose gender-diverse audit partners because of their ability to produce higher-quality audits and are even willing to pay audit fee premium to improve the credibility of their financial reporting.



### *Contributions*

The current dissertation is the first attempt to empirically explore the issue of audit partner gender in a highly regulated and well established French joint audit environment. Specifically, this dissertation contributes to auditing literature that focuses on gender-differentiated audit quality by using input- and output-based measures of audit quality (namely, audit fees and discretionary accruals). The issue of audit partner gender has already been empirically examined by a handful of academic research in various jurisdictions around the world. Majority of these studies are conducted in countries where only one auditor is involved in the audit process (Hossain, Chapple, & Monroe, 2018; Hardies, Breesch, & Branson, 2015; Hardies, Breesch, & Branson, 2016; Lee, Nagy, & Zimmerman, 2019) or two partners are involved that are assigned by same audit firm (Gul, Wu, & Yang, 2013; Ittonen & Peni, 2012; Ittonen, Vähämaa, & Vähämaa, 2013; Kung, Chang, & Zhou, 2019).<sup>42</sup> These studies also differ with respect to the choice of sample, while some studies use data on publicly listed firms, other studies examined the issue by using a sample of private firms. Regulatory oversight is not the same for public listed firms and private firms. That is why, prior studies differ with respect to audit outcomes, some studies suggest that female audit partners are more likely to enhance audit quality (Hardies et al., 2016; Ittonen et al., 2013; Karjalainen et al., 2018; Lee et al., 2019), whereas others suggest that female audit partners are leads to lower-quality audits (Hossain et al., 2018; Yang,

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<sup>42</sup> The only exception is Danish audit setting, where joint audit by two audit firms was mandatory until 2004. Ittonen and Peni (2012) examined the issue of audit fees by using a sample of 715 firm-years from three Nordic countries. In their sample 92 firms-years have female auditors and 7.7% of their sample firm years (55 firm-year observations) are based on joint audits. However, they do not report the number of observations that have a female audit partner and is based on Danish audit setting. Further, Ittonen et al. (2013) examined the issue of earnings management by using a sample of total 770 firm years from Finland and Sweden. In their sample 91 firm years have female lead audit partners. Although they note that some firms are audited by two audit partners from same audit firm but they do not report the number of such cases. These studies thus have least relevance with highly regulated French audit setting.

Liu, and Mai 2018) or the absence of any link between gender of audit partner and measures of audit quality (Gul et al., 2013; Hossain et al., 2018; Lee et al., 2019). The results of these studies also vary because in some jurisdictions signing auditors are not audit partners, namely China (Lennox & Wu, 2018). To the best of our knowledge, so far no other study empirically examined the effect of audit partner gender on audit quality in French mandatory joint audit context, where engagement partners are assigned by two distinct audit firms.

This dissertation also contributes to the literature on external auditor selection that focus on the role of personal attributes of clients and audit partners in client-partner alignment decisions. To the best of our knowledge, there are just two papers that draw on the theoretical homophily argument to examine client-partner alignments in the U.S. setting (Berglund & Eshleman, 2019; Lee et al., 2019). Empirical findings of this dissertation nevertheless complement the findings of prior studies by providing evidence from French audit setting. We also extend the current literature by going beyond the homophily argument and showing that the complexity of auditor pair choices created by French regulatory environment plays out consistent with the disparity of incentives between those board members who are more involved in the board's monitoring function and those who are not (i.e., inside directors). Specifically, we document that female board members involved in the monitoring function of corporate boards are more likely to appoint gender-diverse engagement partners. Finally, the current dissertation also shed light on moderating effects of gender quota legislation by showing that the virtue of the gender quota legislation is not limited to the propensity of French firms to appoint female directors to monitoring positions but has substantially increased the demand for gender-diverse engagement partners.

*Implications and recommendations*

This dissertation provides insights on the effect of audit partner gender on audit quality from a unique audit regulatory environment that has remained relatively unexplored so far. We also examined the factors affecting the demand for male-female engagement partners. The findings of the current dissertation inform corporate stakeholders and raise important implications for audit practice. Our findings inform corporate stakeholders by showing that audits of gender-diverse audit partners are of superior quality than same gender audit partners. We recommend that gender of the lead audit engagement partner should be central for both audit firms as well as audit clients in providing value in response to the needs and requirements of stakeholders and society.

The current dissertation goes beyond the tokenism argument and masculine bias in the partnership structure of public accounting firms. We shed light on the individual characteristics of female and male engagement partners in the second chapter. We highlights that female audit partners exhibit less observable skills and expertise compared to male engagement partners (namely, industry specialization, experience, and portfolio of audited assets). These findings suggest that the career progression is more difficult for women in the audit profession. However, despite the lack of observable skills, female engagement partners strive to prove that their selection/assignment within a male-female joint auditor pair is not a token appointment by influencing audit process and audit outcomes as shown in the current dissertation. Additionally, we also note that appointment of women on audit teams serves audit firms to “tame” difficult clients and they play a role of “trouble-shooter” in situations causing auditor-client frictions (Bitbol-Saba & Dambrin 2019; Lupu 2012). With regard to audit engagements, the samples driven from the listed companies in the CAC

All-Shares index between 2002 to 2010 and the SBF 120 index between 2002 and 2017 have a comparable proportion audit engagements with least one female lead audit partner (18.31% and 20.1%, respectively). Particularly from 2010 onward, we observe a sharp increase in the proportion of such audit engagements. Overall, we report a statistically upward trend for audit engagements with male-female audit partners. This dissertation unveils that the appointment of female directors on monitoring positions seems to be working as a demand mechanism for audit engagement with female lead audit partners during the corresponding period.

Taken as a whole, the empirical evidence of this dissertation raises questions on promotion practices and the determinants of career success in audit firms. Prior literature has also highlighted that women face implicit and explicit barriers to reach partnership position in France (Dambrin & Lambert, 2012; Dambrin & Lambert 2008; Lupu, 2012). Therefore, we recommend that partnership structures of audit firms should be more gender-balanced as it may help audit firms earn more market share and enhance the quality of their clients' financial reports. Another implication for audit practice is that whether there is enough supply of female engagement partners to meet the incremental demand in the post gender quota legislation. If the fraction of female partners does not increase in the coming years, heavy work load on existing female partners could distract them from giving adequate attention and may consequently affect audit quality.

### *Limitations and avenues for future research*

We acknowledge some important caveats to empirical analyses of the current dissertation that are worth emphasizing, which in turn opens up avenues for future research. In the absence of separate data on audit hours and billing rate, we are unable to fully rule out the alternative explanations for higher audit fees. For example,

incremental audit fees possibly be driven by premium audit pricing (higher audit rates) or because of greater audit effort (greater hours). Second, although our finding of output of the audit process complement input to the audit process, we acknowledge that our output-based measure (i.e., discretionary accruals) is subject to measurement errors and sensitive to the choice of discretionary accrual models. An obvious direction for research is to use an alternative accruals model or other proxies of earnings management (Dechow 2010; DeFond & Zhang, 2014). Third, we acknowledge that client and auditors jointly produce financial reports. As the level of earnings management also depends monitoring of corporate board members, we used audit committee characteristics in our main analyses of earnings management. To ensure that our results are free from endogeneity problem, we confirm the robustness of our results for observable and unobservable factors by using a matching procedure, system GMM estimations, difference-in-differences technique and audit partner switch analyses. We still do not completely rule out the possibility that these findings are totally free from endogeneity issues. Fourth, we emphasize that our empirical analyses on audit quality is based on general theoretical background that broadly rely on the literature of psychological and behavioral economics. Consequently, our audit quality analyses may be regarded as exploratory in nature and there could be alternative explanations for our findings. Fifth, we note two inherent limitations of this study, our data does not permit us to disentangle the choice of same gender audit partners due to lack of observations with two female engagement partners. An obvious extension of the present dissertation is that future research overcomes this limitation by expanding the analysis to the entire population of French listed firm. A challenging opportunity for future studies is to design a more careful approach to overcome the other inherent limitation of this study and successfully disentangling the effect of mere presence of female audit partner in

*General conclusion*

male-female auditor pair from gender-diversity effect. In this regard, caution needs to be exercised while interpretation our findings. Sixth, another interesting avenue would be to consider whether the appointment of a female lead audit partner in joint audit setting affects perception based measure of audit quality (namely, cost of capital, cost of debt, and capital market reaction). Finally, future research may explore whether audit firms with a predominant representation of female partners have benefited from the gender quota legislation in terms of additional audit engagements or better market share position.

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**Titre :** Le genre des commissaires aux comptes et la qualité de l'audit externe dans un contexte de co-commissariat

**Mots clés :** Genre du commissaire aux comptes; Honoraires d'audit; Manipulation des résultats; qualité de l'audit; Co-commissariat; diversité du genre au conseil d'administration; loi sur le quota des femmes dans le conseil d'administration.

**Résumé :** Dans le contexte de l'intérêt croissant des régulateurs, des législateurs et de la recherche universitaire pour l'identité des commissaires aux comptes, cette thèse explore l'environnement français de co-commissariat qui impose aux sociétés préparant des états financiers consolidés de nommer conjointement deux cabinets d'audit. Le collège des commissaires aux comptes peut inclure des auditeurs externes du même genre ou de genre différent.

Nous examinons les facteurs liés à la demande et à l'offre des services d'audit externe apportés par des commissaires aux comptes de genre différent. Du point de vue de l'offre nous soutenons qu'un audit mené par un collège mixte de commissaires aux comptes est plus susceptible de promouvoir un suivi efficace et un comportement collaboratif en ce qui concerne le processus d'audit et peut influencer positivement la qualité de l'audit. Nous utilisons des données sur les sociétés françaises cotées en bourse soumis au principe de co-commissariat et appliquons des

procédures économétriques appropriées pour atténuer les problèmes d'endogénéité. Nos résultats empiriques montrent qu'un collège mixte de commissaires aux comptes bénéficie en moyenne d'une prime de 11% sur les honoraires d'audit et l'audit conduit par ce type de collège réduit davantage les incitations à la manipulation des résultats comptables.

Du point de vue de la demande d'audit, nous examinons comment la diversité du genre des conseils d'administration des entreprises clientes affecte la composition du collège de commissaires aux comptes quant à sa mixité homme/femme. Nous montrons que les femmes administrateurs, occupant des postes clés de contrôle au sein du conseil d'administration (entant qu'indépendantes ou membres du comité d'audit) ont plus tendance à sélectionner un collège mixte de commissaires aux comptes et que ce phénomène est encore plus accentué après la promulgation de la loi sur les quotas en faveur des femmes dans les conseils d'administration.

**Title :** Auditor gender and audit quality in a joint audit setting

**Keywords:** Audit partner gender; audit fees; discretionary accruals; joint audit; board gender diversity; gender quota law.

**Abstract:** In the context of rapidly increasing interest of regulators, legislators and academic research in the identity of audit engagement partners, this dissertation explores French mandatory joint audit environment that requires firms preparing consolidated financial statements to appoint two audit firms. The composition of joint audit partners may include same gender audit partners or gender-diverse audit partners.

This dissertation aims to examine whether gender-diverse audit partners provide higher audit quality compared with same gender audit partners. We argue that gender-diverse audit partners are more likely to promote effective monitoring and collaborative behavior with regard to audit process and may positively influence audit quality. We investigate the issue of audit quality by examining input- and output-based measures, namely, audit fees and discretionary accruals. We use data on French listed firms and apply appropriate econometrical procedures to alleviate

concerns about endogeneity issues. Our empirical findings show that the gender-diverse audit engagement partners charge 11% audit fee premium and their clients show lower levels of absolute and signed discretionary accruals. Collectively, this dissertation provides considerable evidence that gender-diverse audit partners produce higher-quality audits.

In the aftermath of gender quota legislation, the current dissertation also examines whether gender profile of audit clients affect the selection/assignment of gender-diverse audit partners. Contrary to the gender similarity (homophily) argument, based on comprehensive analyses of effect of female board members on client-partner gender alignments, this dissertation provide compelling evidence that female directors appointed to monitoring positions on the board, compared to female inside directors, tend to select higher quality "auditor pairs" (i.e., gender-diverse audit partners).