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# Audit fees and earnings management: differences based on the type of audit

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## ABSTRACT

In spite of the extensive research about the impact of audit fees on audit quality, there is no research examining if the association between voluntary audits and audit pricing affects audit quality. Therefore, the aim of this paper is to empirically examine whether the effect of audit fees on audit quality, measured by the level of earnings management, is affected by the type of audit (voluntary vs mandatory), as well as whether the effect of audit fees on audit quality is different depending on the type of audit. Using a sample of Spanish SMEs composed of both voluntarily and mandatorily audited companies, we find that voluntary audits have higher quality when audit fees are lower, but the differences in audit quality between voluntary and mandatory audits reverse as audit fees increase, and mandatory audits are more effective at deterring earnings management when audit fees are high. Additional analyses show that voluntary audits do not directly affect earnings management; instead, voluntary audits are associated with abnormal fees, which in turn negatively affect earnings management. The results also show that audit fees are only negatively associated with earnings management when accruals are income-increasing, which is related to auditor conservatism.

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## 1. Introduction

There is extensive research about the impact of audit fees on audit<sup>1</sup> quality, showing mixed evidence that supports two opposing theories: i) the economic bonding theory, in which higher audit fees impair auditor independence and thus audit quality is reduced (Antle et al., 2006; Ashtana & Boone, 2012; Basioudis et al., 2008; Chi et al., 2011); and ii) the theory that assumes a direct correlation between quality and price, in which higher fees are charged in exchange for greater competency and more effort on the part of the auditor (Gul et al., 2003; Habib et al., 2013; Larcker & Richardson, 2004; Schelleman & Knechel, 2012).

On the other hand, previous literature has examined the association between voluntary audits<sup>2</sup> and audit quality. Some authors find that voluntary audits have

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positive effects, such as the enhancement of accounting quality (Dedman & Kausar, 2012; Minnis, 2011), higher credit ratings (Lennox & Pittman, 2011), better financing conditions (Allee & Yohn, 2009) and a lower cost of debt (Kim et al., 2011; Minnis, 2011). Nevertheless, to the best of our knowledge, there is no research examining whether the association between voluntary audits and audit pricing affects audit quality. This study addresses this lack of research. In particular, we consider whether the association between audit fees and audit quality is different for voluntary and mandatory audits.

Based on the existence of audit market segmentation (Clatworthy et al., 2009; Gandía & Huguet, 2018; Peel & Roberts, 2003), we hypothesise that auditors follow different strategies and thus offer different levels of audit quality; as a result, we expect to find differences in their effectiveness at deterring earnings management activities. In this regard, companies that choose to be voluntarily audited may have a true commitment to accounting quality, and thus their level of earnings management would be lower as compared to mandatory audits because some of the mandatorily audited companies may be passively compliant with the audit requirement and choose 'low-cost' auditors who perform low-quality audits and are more permissive with earnings management activities. Therefore, in this segment of the audit market, companies that are more prone to high quality accounting will choose more reputable auditors, and thus they will pay higher audit fees. On the other hand, in the group of voluntary audits, whether audit fees are related to higher level audit services or to an economic bond between auditors and clients is an open question.

Therefore, the aim of this paper is to empirically examine whether the impact of audit fees on audit quality, measured by the level of earnings management, is affected by the type of audit (voluntary vs mandatory). To do so, we use a sample of Spanish SMEs that is composed of both voluntarily and mandatorily audited companies, and we posit a linear regression model in which we analyse the effect of the test variables (voluntary vs mandatory audits; audit fees; and the interaction term of both variables) and a series of control variables (auditor type, company size, growth, profitability, liquidity, leverage, and age) on audit quality, proxied by a measure of earnings management (the level of discretionary accruals).

The results show that both voluntary audits and audit fees are negatively associated with the level of earnings management, while the interaction term has a positive association. Since earnings management is an inverse measure of audit quality, the results seem to show that voluntary audits and audit fees are positively associated with audit quality. Nevertheless, we note the magnitude of the coefficients: among low-fee observations, voluntary audits have lower discretionary accruals; however, as audit fees rise, the differences in earnings management between voluntary and mandatory audits decrease. Starting from audit fees of approximately €6,600, the level of earnings management is higher for voluntary audits than for mandatory ones. Therefore, the results suggest that voluntary audits have higher quality when audit fees are low; as audit fees increase, the differences in audit quality reverse, and thus mandatory audits deter more earnings management (i.e. have higher audit quality) when audit fees are high.

We perform additional analyses considering abnormal fees, i.e. the difference between the actual audit fees paid by the client and the estimated audit fees based on

the company and auditor characteristics. The results show that the effect of voluntary audits becomes statistically insignificant, while the effect of abnormal audit fees on the level of earnings management is significantly negative. These results suggest that higher fees (and higher abnormal audit fees) are associated with greater effort by the auditors and a premium paid by clients to ‘good auditors’, who restrain earnings management to a greater extent, and thus there is a positive association between audit fees and audit quality. Furthermore, since previous literature shows that voluntary audits are associated with an audit fee premium over mandatory audits (Gandía & Huguet, 2018), these results suggest that the effect of voluntary audits on audit quality (observed in the preliminary analyses) is captured through the abnormal audit fees paid by the companies that voluntarily purchase audits. Globally, the results support the idea that audits, being credence goods, signal quality via price, and thus audit fees are positively associated with audit quality.

In order to avoid the potential endogeneity problems common to all the audit-based studies, we have used fixed-effects regressions, which have previously been used in the literature to partially mitigate these problems. However, we must admit that this approach does not completely rule out endogeneity problems as long as the causal relation between auditor characteristics and audit quality can be bidirectional.

The main contribution of this work to the prior literature is that this is the first study that examines the effect of the interaction between the nature of the audit (voluntary or mandatory) and audit fees on earnings management and audit quality. Accordingly, the study complements and extends previous research on the association between audit fees and audit quality. Furthermore, the paper also contributes to the limited literature about the role of audits on SMEs and their economic consequences, and particularly voluntary audits. The results are of relevance for accounting and auditing practitioners, since they show that audit quality is not homogeneous and the association between the price of audits and their quality is different depending on the setting in which audits are performed and the type of audit.

The paper is organised as follows: Section 2 is devoted to the theoretical framework, in which we review the previous literature and develop our research hypotheses; Section 3 focuses on the empirical study, where we explain the empirical design and describe the sample used to test the research hypotheses; Section 4 presents the results of the main analysis and the additional tests; and in Section 5 we offer our conclusions and summarise the main limitations of the study.

## **2. Theoretical framework**

### **2.1. Voluntary audits, audit quality and earnings management**

Previous literature has examined the association between voluntary audits and accounting quality and it shows that voluntary audits have positive effects on accounting information. In this regard, Minnis (2011) examines the effects of voluntary audits on a sample of private companies in the US and finds evidence that financial information has higher quality and is a better predictor of future cash flows when a company is audited. In addition, Dedman and Kausar (2012), through the analysis of a sample of SMEs in the UK, find evidence that financial

information from audited companies is more conservative than information from unaudited companies.

Although the empirical evidence shows that voluntary audits enhance accounting quality as compared to unaudited information, the question of whether audit quality is homogeneous between voluntary and mandatory audits remains open. Lennox and Pittman (2011) highlight the signalling effect of voluntary audits over mandatory audits, since companies that choose to be voluntarily audited send a signal about their commitment to accounting quality, a signal that is not present when companies are required to be audited, and they find evidence that voluntarily audited companies benefit from upgrades in their credit ratings. Similarly, Kim et al. (2011) find that companies with voluntary audits have a lower cost of debt than mandatorily audited companies. In the Spanish setting, Huguet and Gandía (2016) examine a sample of Spanish SMEs and find evidence that both mandatory and voluntary audits help to reduce earnings management,<sup>3</sup> although the effect is less intense when audits are voluntary, which could be due to the lower visibility and litigation risk faced by the auditors of SMEs.

The previous literature provides us with two competing theories that attempt to explain differences in audit quality, and thus in the level of earnings management of audited companies, when comparing voluntary and mandatory audits. First, one might expect voluntarily audited companies to have a higher commitment to accounting quality, while some of the mandatorily audited companies may only be passively compliant, and thus the effect of voluntary audits on deterring earnings management should be more pronounced. As a competing view, as presented by Huguet and Gandía (2016), the lower visibility and litigation risk of the voluntary setting may mean that auditors can act in a more permissive way than when performing mandatory audits, and thus the level of earnings management should be higher among voluntary audits. Since we consider that theoretical support for the first view (higher commitment to quality among voluntary audits and the existence of passive compliance among mandatory audits) is sounder, we formulate the first hypothesis as:

H1: The level of earnings management is significantly lower for voluntarily audited SMEs than for mandatorily audited SMEs.

Nevertheless, in spite of the evidence obtained by the previous literature, we should note that these studies did not take into account the audit pricing of voluntary and mandatory audits, which can affect the association between voluntary audits and the audit outcomes. In this regard, we note that Gandía and Huguet (2018) find evidence of a premium linked to voluntary audits, which may affect the association between voluntary audits and audit quality. We explore this association in Section 2.3.

## **2.2. Audit fees and audit quality: economic bonding vs auditor effort**

Previous literature has examined the association between audit fees and audit quality, measured through proxies for accounting quality such as discretionary accruals (Almarayeh et al., 2020; Antle et al., 2006; Ashtana & Boone, 2012; Gul et al., 2003)

or the presence of qualified audit reports (Basioudis et al., 2008; Blay & Geiger, 2013). With regard to the use of accounting quality measures as a proxy for audit quality, although prior literature documents a generally positive association between audit fees and accounting quality (Dhaliwal et al., 2008; Hoitash et al., 2007), which is attributed to the auditor's effort and experience, other studies show a negative association (Antle et al., 2006; Gul et al., 2003). These results suggest the existence of an economic bond between clients and auditors that may generate bias on the part of auditors, as well as reduce their independence, thereby negatively affecting audit quality (Kinney & Libby, 2002).

More recent studies have examined more in depth the association between audit fees and accruals, introducing the analysis of abnormal audit fees, calculated as the difference between the actual audit fees and an estimation of them based on the characteristics of the company and the audit (Ashtana & Boone, 2012; Choi et al., 2010). Choi et al. (2010) examine whether the association between audit fees and audit quality is asymmetrical, in the sense that the association is conditioned by the sign of the abnormal fees. In this regard, following Kinney and Libby (2002), the authors state that abnormal fees can be more closely linked to bribery attempts, so their analysis can help to better know whether the audit fees received by the auditors are associated with better audit services or linked to an economic bond between auditor and client. The authors find evidence that discretionary accruals are positively associated with positive abnormal fees, while the association with negative abnormal fees is not significant.

Ashtana and Boone (2012) examine the association between abnormal audit fees and audit quality, measured through discretionary accruals. In line with the economic bonding theory, the authors find evidence that audit quality is reduced when positive abnormal fees are higher. Furthermore, they find evidence that audit quality decreases when negative abnormal fees are higher, which can be linked to client bargaining power. Moreover, Chi et al. (2011) find evidence that high audit fees are associated with higher levels of real earnings management. On the other hand, Schelleman and Knechel (2012) examine whether the causal association between audit fees and accruals may be inverse, i.e. if accruals determine audit fees. In this regard, the authors examine how auditors adjust their fees, by charging a premium or making a greater effort (more billing hours), in response to increases in earnings management by companies. The authors find evidence that short-term accruals are associated with a significant increase in audit fees and in effort, but not in the profit margin of auditors.

Considering the SME environment, where auditors face low visibility and low litigation risk, the economic bonding theory seems plausible. Nevertheless, we should note that, given that some SMEs are voluntarily audited, they can demonstrate a genuine commitment to accounting quality. Furthermore, as documented by Gandía and Huguét (2018), the existence of an audit fee premium linked to voluntary audits may suggest higher quality, in line with the credence goods theory. Therefore, we formulate the second hypothesis as:

- H2. There is a significantly negative association between audit fees and earnings management among SMEs.

### **2.3. Differences in the effect of audit fees on audit quality between voluntary and mandatory audits**

As we have stated in Sections 2.1 and 2.2, the association between voluntary audits and audit quality, as well as the association between audit fees and audit quality, should not be observed without considering the interaction between voluntary audits and audit fees. Nevertheless, to date there has been no research about the combined effect of these audit characteristics on earnings management and audit quality. As shown by Gandía and Huguet (2018), voluntary audits are subject to an audit fee premium, which they attribute to the signalling effect of price for quality among credence goods. In a more recent paper (Gandía & Huguet, 2020), they find that higher audit fees among voluntary audits are associated with a lower cost of debt, suggesting that lenders perceive the financial statements of voluntarily audited companies as more reliable when audit fees are high.

Whether this perception by lenders is real, and thus higher audit fees should make a difference in audit quality in the voluntary setting, is an open question. Compared to mandatory audits, for which the signal for audit quality comes from the audit fees and the auditor type (i.e. large vs small auditors), voluntary audits are signalling the company's commitment to accounting quality by voluntarily requesting an audit, and thus the role of audit fees may be slightly different from the case of mandatory audits. Furthermore, the previous literature shows the existence of market segmentation in the provision of audit services (Clatworthy et al., 2009; Gandía & Huguet, 2018; Peel & Roberts, 2003). Based on this audit market segmentation, we could expect that auditors follow different strategies, offering different levels of audit quality that would depend on the nature of the audit (voluntary vs mandatory) and the audit fees paid by the auditee (low prices vs high prices). In this regard, companies in the mandatory audit setting that are more prone to high accounting quality will choose more respected auditors, as opposed to the passively compliant companies, which will choose 'low-cost' auditors that will perform low-quality audits and thus will be more permissive with earnings management activities. In the case of voluntary audits, higher audit fees may not necessarily be linked to higher audit prices and could show economic bonding between auditors and clients. Therefore, we formulate our third hypothesis as:

H3. The association between audit fees and earnings management is different for voluntarily and mandatorily audited SMEs.

## **3. Empirical study**

### **3.1. Research design**

We test the hypotheses with the following regression model:

$$EM_{it} = \alpha + \beta_1 VOL_{it} + \beta_2 LNFEES_{it} + \beta_3 INTER_{it} + \gamma CONTROL + \varepsilon_{it} \quad (1)$$

The dependent variable in the model is the level of earnings management (*EM*). This variable is not directly observable and thus we use a proxy based on the level of



discretionary accruals (*DA*). The discretionary accruals models make the assumption that part of the accruals is not explained by innate factors arising from the activities of companies and thus these ‘discretionary’ accruals are a measure of the level of earnings management.

We estimate the discretionary accruals using the Jones Model (1991). We can see in Model (a) that Jones (1991) divides the total accruals<sup>4</sup> into a non-discretionary component (*NDA*), calculated as a function of the growth in the sales ( $\Delta Rev$ ) and the level of Property, Plant & Equipment (*PPE*), and a discretionary component (*DA*), which is a measure of the level of earnings management. As shown in Model (b),<sup>5</sup>  $\Delta Rev$  and *PPE* control for the normal component of short-term and long-term accruals, respectively. Discretionary accruals (*DA*) are calculated as the difference between total accruals and normal or non-discretionary accruals (*DA*), as shown in Model (c), and the absolute value of the discretionary accruals is considered the main measure of earnings management (d). Nevertheless, some studies (Almarayeh et al., 2020; Cabal-García et al., 2019; De Fuentes & Porcuna, 2019; Dedman & Kausar, 2012; Francis & Wang, 2008) use the signed discretionary accruals rather their absolute value. In this regard, we note the concept of auditor conservatism (Choi et al., 2010; Kim et al., 2003), in which auditors have preference for those accounting choices that decrease earnings over those choices that increase profits, and thus they may be more effective against income-increasing discretionary accruals. Therefore, we also regress the model separately for positive and negative accruals. In an additional analysis, we use alternative measures of earnings management.

$$\frac{TA_{j,t}}{TAss_{j,t-1}} = \kappa_1 \frac{1}{TAss_{j,t-1}} + \kappa_2 \frac{\Delta Rev_{j,t}}{TAss_{j,t-1}} + \kappa_3 \frac{PPE_{j,t}}{TAss_{j,t-1}} + \epsilon_{j,t} \quad (a)$$

$$NDA_{j,t} = \kappa_1 \frac{1}{TAss_{j,t-1}} + \kappa_2 \frac{\Delta Rev_{j,t}}{TAss_{j,t-1}} + \kappa_3 \frac{PPE_{j,t}}{TAss_{j,t-1}} \quad (b)$$

$$DA_{j,t} = \frac{TA_{j,t}}{TAss_{j,t-1}} - NDA_{j,t} \quad (c)$$

$$EM_{j,t} = \left| \frac{TA_{j,t}}{TAss_{j,t-1}} - NDA_{j,t} \right| = |DA| \quad (d)$$

Model (1) includes *VOL*, which equals 1 when a company is below *SAT*<sup>6</sup> and thus *a priori* voluntarily audited, and 0 for mandatorily audited companies, and tests Hypothesis 1, i.e. whether the level of earnings management is different between voluntarily and mandatorily audited companies. Model (1) also includes the natural logarithm of the audit fees paid by the auditee (*LNFEES*), which is used to test Hypothesis 2, i.e. if the level of earnings management depends on the audit fees charged. Finally, with the aim of testing Hypothesis 3, we have included an interaction term between *VOL* and *LNFEES* (*INTER*). The variable shows whether the effect of *LNFEES* on *EM* is different depending on whether audits are voluntary or



mandatory. Given that VOL is a dummy variable, the effect of audit fees on mandatory audits is observed from  $\beta_2$ , while the effect of audit fees on voluntary audits is captured by the sum of  $\beta_2 + \beta_3$ .

The model includes a set of control variables used in previous literature. This literature shows that auditor size may affect the level of earnings management (Balsam et al., 2003; Cabal-García et al., 2019; Cano, 2007), so we include two additional audit-based variables: LARGE, which equals 1 when companies are audited by large auditors (either Middle-Tier or Big 4 audit firms) and 0 otherwise, and BIG, which equals 1 for companies audited by a Big 4 auditor and 0 otherwise. LARGE captures the differences between large auditors (Big 4 and Middle-Tier firms) and small auditors, while BIG captures the differences between Big 4 and Middle-Tier auditors. Therefore, the effect of Middle-Tier firms is observed from the coefficient of LARGE, while the sum of the coefficients of LARGE and BIG shows the effect of the Big 4 auditors. In line with prior literature (Gandía & Hugué, 2018; Sundgren & Svanström, 2013) we have considered BDO and Grant Thornton as Middle-Tier firms.

Company size (LNASS) is measured with the natural logarithm of total assets (Hugué & Gandía, 2016; Kim et al., 2003; Van Tendeloo & Vanstraelen, 2008). We also control for company profitability, measured by Return on Business Assets (ROBA<sup>7</sup>). Additionally, we include a dummy (N\_EARN) that equals 1 if the company reports negative earnings and 0 otherwise (Francis et al., 1999; Paiva et al., 2019). With regard to the financial soundness of the company, we include two control variables: leverage (LEV), measured as the ratio of total liabilities to total assets (Becker et al., 1998; Reynolds & Francis, 2000), and the liquidity ratio (LIQ), measured as the ratio of current assets to current liabilities (Caramanis & Lennox, 2008). We also control for company growth (GROWTH), measured as the growth in sales (Chen et al., 2008). Finally, we also include the age of the company (AGE). The model includes year dummies to control for unobserved time-specific effects common to all companies (Hugué & Gandía, 2016).

We note that the association between audit fees and earnings management may only be apparent, and thus we should observe the effect of *abnormal fees*, calculated as the difference between the audit fees and the *normal fees* the company should pay according to its characteristics. Therefore, we reformulate Model (1) by replacing LNFEES with AB\_LNFEES, so Model (2) is formulated as:

$$EM_{it} = \alpha + \beta_1 VOL_{it} + \beta_2 AB_{LNFEESit} + \beta_3 INTER_{ABit} + \gamma CONTROL + \varepsilon_{it} \quad (2)$$

Since AB\_LNFEES are calculated as the difference between audit fees and ‘normal’ or ‘expected’ audit fees, we first estimate the expected audit fees. Prior literature (Gandía & Hugué, 2018; Sundgren & Svanström, 2013; Zaman Groff et al., 2017) shows that audit fees depend on company and auditor characteristics, which can be classified into five groups: i) auditor characteristics, ii) company size, iii) company complexity, iv) company risk and v) other characteristics. Previous literature has shown that large auditors show an audit fee premium (Clatworthy et al., 2009; Sundgren & Svanström, 2013), so we include LARGE and BIG as explained before. With regard to company size, it is expected that larger companies require more audit

effort and thus audit fees will be higher (Hay et al., 2006). We proxy company size using the natural log of total assets (LNASS), the natural log of net turnover (LNSAL) and the natural log of the number of employees (LNEMP).

Regarding company complexity, previous literature shows that more complex companies require additional audit procedures, increasing audit fees (Hay et al., 2006). We proxy company complexity using the ratio of inventory and receivables over total assets (INVREC), a dummy indicating if the company has carried out acquisitions (ACQ), the proportion of intangibles (INT\_ASS), the presence of unusual items in the income statement (UNUS), a dummy indicating if the company uses simplified GAAP (SIMP\_GAAP), the number of subsidiary companies (NUM\_SUBS) and a dummy equal to 1 if the company is part of a group (GROUP).

With regard to company risk, it is expected that audit fees are higher when the risk is higher because auditors charge a premium and because they need to devote more effort to the audit in order to reduce their risk (Niemi, 2002). Company risk is proxied by leverage (LEV), changes in leverage (CH\_LEV), company growth (GROWTH), profitability (ROBA), the presence of negative earnings (NEG\_EARN and NEG\_ROBA), liquidity ratios (CURRENT and QUICK), solvency ratio (SOLV), and changes in the solvency ratio (CH\_SOLV). Finally, we also control for other audit characteristics that may affect audit fees: the presence of modified audit reports (MOD), a dummy indicating if the year-end date for the financial statements is 31 December (YEAR\_END), if the company is located in one of the main cities (Madrid or Barcelona), and the age of the company (AGE). AB\_LNFEES is calculated as the difference between LNFEES and the fitted values of the regression model (Gandía & Huguet, 2018, 2020; Zaman Groff et al., 2017):

$$\begin{aligned}
 LNFEES_{it} = & \alpha + \beta_1 LARGE_{it} + \beta_2 BIG_{it} + \beta_3 LNASS_{it} + \beta_4 LNSAL_{it} + \beta_5 LNEMP_{it} \\
 & + \beta_6 INVREC_{it} + \beta_7 ACQ_{it} + \beta_8 INT_{ASS}it + \beta_9 UNUS_{it} + \beta_{10} SIMP_{GAAP}it \\
 & + \beta_{11} NUM_{SUBS}it + \beta_{12} GROUP_{it} + \beta_{13} LEV_{it} + \beta_{14} CH_{LEV}it \\
 & + \beta_{15} GROWTH_{it} + \beta_{16} ROBA_{it} + \beta_{17} NEG_{EARN}it + \beta_{18} NEG_{ROBA}it \\
 & + \beta_{19} CURRENT_{it} + \beta_{20} QUICK_{it} + \beta_{21} SOLV_{it} + \beta_{22} CH_{SOLV}it + \beta_{23} MOD_{it} \\
 & + \beta_{24} YEAR_{END}it + \beta_{25} C_{CITY}it + \beta_{26} AGE_{it} + \gamma DUMMY_{IND} \\
 & + \gamma DUMMY_{YEARS} + \varepsilon_{it}
 \end{aligned}
 \tag{3}$$

On the other hand, previous literature shows that the use of audit-based variables is often affected by endogeneity problems (Huguet & Gandía, 2014; Kim et al., 2011). Prior literature has tackled these problems by using a fixed-effects (FE) regression estimation (Gandía & Huguet, 2020; Kim et al., 2011; Zaman Groff et al., 2017). Some authors (Francis, 2011; Lennox et al., 2012; Wintoki et al., 2012) suggest the use of a fixed-effects (FE) regression estimation, which can alleviate the potential self-selection bias and omitted variables problem as long as the unobserved source of endogeneity is time-invariant. Therefore, we estimate Equations (1) and (2) using a firm FE regression procedure.

### 3.2. Sample and descriptive statistics

The sample has been selected from SABI,<sup>8</sup> a database that contains financial information of Spanish companies. The sample period runs from 2009 to 2018. We initially selected the data of audited private companies that have been below the maximum thresholds established by Directive 2013/34/EU to consider a company as small, excluding companies with unlimited liability and companies from the financial and insurance industries. Following this Directive, small companies are defined as those which do not exceed at least two of the following thresholds at the end of the year: net turnover under €12,000,000, total assets under €6,000,000 and less than 50 employees. The same Directive states that small companies are not required to be audited, although most EU countries apply lower Statutory Audit Thresholds (SAT), as in the Spanish case, where private companies are not required to be audited if they fall below two of the following criteria for two consecutive years: €5,700,000 of net turnover, €2,850,000 of total assets and 50 employees. Therefore, the use of the maximum thresholds allows us to select companies below SAT (voluntarily audited) and above SAT (mandatorily audited), avoiding an excessive variation in company size within the sample.

Although companies below SAT are not required to be audited by size criteria, we should note that they can be required to be audited under certain conditions. Nevertheless, as explained by Gandía and Huguet (2020), the assumption that these companies are voluntarily audited is rather plausible since these additional criteria are more common for larger companies. We eliminate observations that have no information to calculate accruals and also observations with strange values (negative values for assets, debt or financing expenses). In order to alleviate the influence of outliers, continuous variables are truncated at percentiles 1–99.

Table 1 shows the sample distribution. We can see in Panel A that the final sample has 30,548 observations from 6,997 companies, 3,025 of them from companies below SAT (*a priori* voluntarily audited) and 27,523 observations for mandatory audits. We note that the percentage of companies below SAT in this sample (9.9%) is lower than the estimations of the Instituto de Contabilidad y Auditoría de Cuentas<sup>9</sup> (29% in 2018). This lower proportion is explained by the fact that smaller companies report more simplified financial statements that impede the calculation of accruals. On the other hand, considering these percentages, the assumption that companies below SAT represent voluntary audits does not overstate the actual number of voluntary audits. Panel B reports the sample distribution by auditor size (Big 4, Middle-Tier and small auditors). We highlight the low proportion of companies audited by large auditors; nevertheless, the proportion of companies audited by these auditors is higher for voluntary audits than among mandatory audits.

Table 2 shows the descriptive statistics of the continuous variables. On average, voluntarily audited companies have lower discretionary accruals, pay lower audit fees, are smaller and less profitable but have more growth, more financial soundness and are older.

## 4. Results

### 4.1. Main results

This section presents the results of the main analysis. First, we compute a correlation matrix to examine potential multicollinearity problems. The results are reported in

**Table 1.** Sample distribution.

<b>Panel A: Sample distribution by audit status</b>					
Year	Voluntary audits		Mandatory audits		Total
2009	223	5.87%	3,575	94.13%	3,798
2010	345	9.41%	3,321	90.59%	3,666
2011	415	10.50%	3,536	89.50%	3,951
2012	397	10.39%	3,425	89.61%	3,822
2013	406	11.91%	3,003	88.09%	3,409
2014	353	12.72%	2,422	87.28%	2,775
2015	262	10.26%	2,292	89.74%	2,554
2016	290	9.30%	2,829	90.70%	3,119
2017	221	8.94%	2,252	91.06%	2,473
2018	113	11.52%	868	88.48%	981
Total	3,025	9.90%	27,523	90.10%	30,548

  

<b>Panel B: Sample distribution by auditor choice</b>					
Year	Small	M-Tier	Big	Total	
2009	3,436	157	205	3,798	
2010	3,295	162	209	3,666	
2011	3,578	122	251	3,951	
2012	3,440	124	258	3,822	
2013	3,048	111	250	3,409	
2014	2,513	84	178	2,775	
2015	2,311	69	174	2,554	
2016	2,805	85	229	3,119	
2017	2,256	61	156	2,473	
2018	890	26	65	981	
			1		
Total	27,572	2,976	,975	30,548	
Voluntary Audits	2,556	158	311	3,025	
	(84.50%)	(5.22%)	(10.28%)	(100%)	
Mandatory Audits	25,016	843	1,664	27,523	
	(90.89%)	(3.06%)	(6.05%)	(100%)	
	27,572	1,001	1,975	30,548	
Total	(90.26%)	(9.74%)	(6.47%)	(100%)	

**Table 3.** The highest correlation is 0.875 between LNFEES and AB\_LNFEES. Nevertheless, the variables are used as alternative measures so there are no problems with this association. The next highest correlation is that between ROA and N\_EARN (0.544), which is in line with previous studies (Huguet & Gandía, 2016). Other notable correlations are that of LNASS with LNFEES (0.229) or DA with ROBA (0.135) and N\_EARN (−0.133). However, these correlations are below 0.80, so we do not expect collinearity problems (Firth, 1997; Huguet & Gandía, 2014).

We then run Model (1) using absolute and signed discretionary accruals as our measure of earnings management. Table 4 shows the results of these regressions.

Regarding Hypothesis 1, we can see that VOL is significantly negative when using |DA|, suggesting that voluntarily audited companies have lower discretionary accruals, i.e. they manage earnings to a lesser extent than mandatorily audited companies. There could be two reasons for this: the first one, linking the commitment to voluntary audits with accounting quality, is that companies that choose to be voluntarily audited are particularly interested in providing high quality financial information, and both this commitment by the managers and the work of the auditors lead to lower earnings management than in the case of mandatory audits, in which some

**Table 2.** Descriptive statistics.

Panel A: Distributional properties (30,548 observations)							
	Mean	Std. Dev.	1%	25%	50%	75%	99%
+/- DA	-0.0011	0.1024	-0.2695	-0.0584	-0.0021	0.0545	0.2817
DA	0.0763	0.0683	0.0010	0.0259	0.0565	0.1062	0.3112
LNFEES	1.9966	0.3667	1.1762	1.7579	1.9741	2.2194	2.9837
AB_LNFEES	-0.0029	0.3155	-0.7108	-0.2181	-0.0099	0.2126	0.7369
LNASS	8.8437	0.5864	7.5679	8.4547	8.8042	9.1770	10.6113
ROBA	0.0646	0.0838	-0.1897	0.0264	0.0557	0.0975	0.3351
N_EARN	0.1591	0.3658	0.0000	0.0000	0.0000	0.0000	1.0000
LEV	0.2775	0.1859	0.0058	0.1218	0.2558	0.4073	0.7499
LIQ	1.8506	1.4302	0.3994	1.1068	1.4324	2.0757	7.9167
GROWTH	0.0128	0.2030	-0.4807	-0.0930	0.0096	0.1072	0.6580
AGE	24.0796	11.0563	5.0000	16.0000	23.0000	30.0000	58.0000

**Panel B:** Mean and standard deviation of variables by audit status

Variable	Voluntary Audit (3,025 observations)		Mandatory Audit (27,523 observations)		Test for mean differences	
	Mean	Std. Dev.	Mean	Std. Dev.	Diff	t
+/- DA	-0.0078	0.1011	-0.0004	0.1025	-0.0074	-3.79***
DA	0.0750	0.0682	0.0765	0.0683	-0.0015	-1.14***
LNFEES	1.8459	0.3739	2.0131	0.3620	-0.1673	-24.04***
AB_LNFEES	-0.0241	0.3223	-0.0004	0.3146	-0.0237	-3.72***
LNASS	8.4887	0.7782	8.8827	0.5475	-0.3939	-35.80***
ROBA	0.0414	0.0930	0.0672	0.0823	-0.0258	-16.14***
N_EARN	0.2572	0.4372	0.1483	0.3555	0.1088	15.59***
LEV	0.2663	0.1905	0.2788	0.1853	-0.0125	-3.51***
LIQ	2.1049	1.9545	1.8226	1.3575	0.2823	10.32***
GROWTH	0.0246	0.2284	0.0115	0.2000	0.0131	3.38***
AGE	24.6079	11.3148	24.0215	11.0262	0.5865	2.77***

\*\*\*, \*\* and \* denote coefficients' statistical significance at the 1%, 5% and 10% confidence level, respectively.

companies may be passively compliant with the audit requirement and choose more permissive auditors. An alternative explanation is that, given that voluntary audits apply to smaller companies, they may have simpler business environments with less of a need for accounting estimations, so the amount of total accruals and, by extension, discretionary accruals, will be lower. When splitting the sample into negative and positive accruals, we can see that the variable is not significant for -DA, while remaining statistically significant for +DA. These results reinforce the idea that auditors are more prone to deter income-increasing accruals, given auditor conservatism.

With regard to Hypothesis 2, we can see that LNFEES is significantly negative when using |DA|, which suggests that higher audit fees are related to stricter scrutiny of accounting by auditors, rather than an economic bond between auditors and clients. Also, as we have observed for VOL, when splitting the sample into negative and positive accruals we can see that LNFEES is only significant for +DA, which is in line with the auditor conservatism idea explained in the theoretical framework.

Finally, regarding Hypothesis 3, we can see that INTER is significantly positive when using |DA|; this positive coefficient is also observed for +DA. Considering the combined effect of VOL, LNFEES and INTER, we can observe that the effect of VOL and LNFEES prevails over the positive effect of INTER, but it means that, starting from a certain fee level, voluntary audits manage earnings to a greater extent than mandatory audits. Specifically, we can estimate that the level of earnings

**Table 3.** Correlation matrix.

	+/-DA	DA	LNFEES	AB_LNFEES	LNASS	ROBA	N_EARN	LEV	LIQ	GROWTH	AGE
+/-DA	1.000										
DA	<b>0.024</b>	1.000									
LNFEES	<b>-0.018</b>	-0.001	1.000								
AB_LNFEES	<b>-0.013</b>	<b>-0.017</b>	<b>0.875</b>	1.000							
LNASS	<b>0.071</b>	<b>-0.024</b>	<b>0.229</b>	<b>-0.020</b>	1.000						
ROBA	<b>0.135</b>	<b>0.029</b>	<b>-0.019</b>	<b>-0.015</b>	<b>0.052</b>	1.000					
N_EARN	<b>-0.133</b>	<b>0.048</b>	<b>0.037</b>	<b>-0.003</b>	<b>-0.097</b>	<b>-0.544</b>	1.000				
LEV	<b>0.069</b>	<b>0.067</b>	<b>-0.024</b>	<b>-0.023</b>	<b>0.096</b>	<b>-0.207</b>	<b>0.131</b>	1.000			
LIQ	<b>0.050</b>	<b>-0.016</b>	<b>0.025</b>	<b>0.001</b>	<b>0.154</b>	<b>0.025</b>	<b>-0.050</b>	<b>-0.343</b>	1.000		
GROWTH	<b>0.017</b>	<b>0.011</b>	<b>-0.007</b>	<b>-0.058</b>	<b>0.144</b>	<b>0.243</b>	<b>-0.210</b>	<b>-0.006</b>	<b>-0.068</b>	1.000	
AGE	<b>-0.018</b>	<b>-0.077</b>	<b>0.090</b>	<b>0.009</b>	<b>0.074</b>	<b>-0.119</b>	<b>0.040</b>	<b>-0.109</b>	<b>0.120</b>	<b>0.003</b>	1.000

Coefficients in bold denote statistical significance at the 5% level.

**Table 4.** Fixed-effects regression results.

	DA		-DA		+DA	
	Coef.	t	Coef.	t	Coef.	t
VOL	-0.0176	-1.73*	-0.0120	-0.69	-0.0480	-2.47**
LNFEES	-0.0063	-1.83*	0.0026	0.51	-0.0115	-2.02**
INTER	0.0093	1.75*	0.0078	0.85	0.0259	2.50**
LARGE	-0.0042	-0.84	0.0128	1.83*	0.0045	0.53
BIG	0.0054	0.88	-0.0120	-1.36	-0.0035	-0.33
LNASS	0.0038	1.67*	0.0117	3.40***	0.0179	4.88***
ROBA	0.0245	3.07*	0.0676	5.70***	0.1545	11.45***
N_EARN	0.0106	6.58***	-0.0127	-5.55***	0.0041	1.44
LEV	0.0291	5.44***	0.0905	11.27***	0.1426	16.20***
LIQ	0.0001	0.22	0.0053	4.71***	0.0054	5.48***
GROWTH	0.0040	1.69*	-0.0107	-2.99***	-0.0102	-2.63***
AGE	-0.0014	-4.34***	0.0020	4.38***	-0.0015	-2.82***
Intercept	0.0780	3.89***	-0.2711	-8.84***	-0.0883	-2.80***
N	30,548		15,558		14,985	
F	70.9		14.77		22.66	
R-Within	0.60%		2.99%		4.72%	

Table reports the FE regression results of the following model:  $EM_{it} = \alpha + \beta_1 VOL_{it} + \beta_2 LNFEES_{it} + \beta_3 INTER_{it} + \gamma CONTROL + \varepsilon_{it}$

EM is proxied by the absolute value of discretionary accruals (|DA|) and the signed accruals (+/- DA).

\*\*\*, \*\* and \* denote the coefficient's statistical significance at the 1%, 5% and 10% confidence level, respectively.

Coefficients of year dummies are not included for parsimony.

management, measured with |DA| (+DA), is approximately the same for voluntary and mandatory audits when LNFEES equals 1.8962 (1.8772), which corresponds to audit fees that amount to €6,660 (€6,535). Below this level of fees, voluntary audits have lower discretionary accruals; as audit fees increase from this level, the situation reverses, and mandatory audits have lower discretionary accruals than voluntary audits.

If we consider these results as a whole, we can observe the following: with regard to mandatory audits, companies that pay higher audit fees have lower levels of discretionary accruals, either because they have a stronger commitment to accounting quality or because auditors control earnings management more strictly, derived from a greater effort, or for both reasons; on the other hand, mandatorily audited companies that pay lower audit fees have higher discretionary accruals because they are passively compliant with the audit requirement and thus choose 'low-cost' auditors that are more permissive with earnings management activities when there are income-increasing accruals. For income-decreasing accruals, however, there are no differences based on the audit fees paid by the auditees.

**Table 5.** Voluntary vs Mandatory setting.

	DA		+DA		-DA	
	Coef.	t	Coef.	t	Coef.	t
<b>Panel A: Voluntary audits</b>						
LNFEES	0.0033	0.25	0.0118	0.60	0.0217	0.90
LARGE	-0.0203	-1.35	0.0746	2.91***	-0.0133	-0.55
BIG	0.0327	1.41	-0.1125	-2.82***	-0.0012	-0.04
LNASS	0.0051	0.48	-0.0196	-1.23	0.0133	0.66
ROBA	0.0006	0.02	0.0409	1.10	0.0829	1.48
N_EARN	0.0084	1.62	-0.0082	-1.13	0.0097	0.96
LEV	0.0463	2.26**	0.0289	0.91	0.1448	3.82***
LIQ	0.0021	1.38	-0.0002	-0.05	0.0020	0.79
GROWTH	-0.0021	-0.28	-0.0012	-0.11	-0.0094	-0.60
AGE	-0.0012	-0.90	0.0000	0.00	-0.0051	-2.00**
Intercept	0.0384	0.40	0.0560	0.39	-0.0100	-0.05
N	3,025		1,604		1,421	
F	1.64		1.24		1.66	
R-Within	1.75%		3.38%		5.45%	
<b>Panel B: Mandatory audits</b>						
	DA		+DA		-DA	
	Coef.	t	Coef.	t	Coef.	t
LNFEES	-0.0070	-1.90*	0.0051	0.92	-0.0118	-1.95*
LARGE	-0.0027	-0.48	0.0084	1.10	0.0013	0.14
BIG	0.0027	0.40	-0.0053	-0.56	-0.0005	-0.05
LNASS	0.0051	2.10**	0.0134	3.68***	0.0209	5.38***
ROBA	0.0291	3.38***	0.0676	5.26***	0.1610	11.12***
N_EARN	0.0107	6.14***	-0.0144	-5.80***	0.0027	0.90
LEV	0.0279	4.87***	0.0968	11.31***	0.1453	15.32***
LIQ	-0.0004	-0.47	0.0059	4.78***	0.0061	5.54***
GROWTH	0.0034	1.34	-0.0123	-3.17***	-0.0129	-3.14***
AGE	-0.0014	-4.17***	0.0020	4.08***	-0.0016	-2.93***
Intercept	0.0693	3.26***	-0.2938	-9.00***	-0.1134	-3.40***
N	27,523		13,954		13,564	
F	7.10		16.25		23.22	
R-Within	0.60%		3.32%		4.81%	

Table reports the FE regression results of the following model:  $EM_{it} = \alpha + \beta_1 LNFEES_{it} + \gamma CONTROL + \varepsilon_{it}$   
EM is proxied by the absolute value of discretionary accruals (|DA|) and the signed accruals (+/- DA).

Panel A shows the results for the sub-sample of voluntary audits.

Panel B shows the results for the sub-sample of mandatory audits.

\*\*\*, \*\* and \* denote the coefficient's statistical significance at the 1%, 5% and 10% confidence level, respectively.

Coefficients of year dummies are not included for parsimony.

In the case of voluntary audits, we can observe that they have lower levels of earnings management as compared to mandatory audits, which can be attributed to different reasons, such as the lower importance of accruals in the accounting of smaller companies, or the commitment by these companies to accounting quality, which explains why they are willing to pay for a voluntary audit. Nevertheless, since the level of earnings management increases as audit fees increase, it suggests that there may exist an economic bond between the auditor and the auditee, becoming more permissive for income-increasing accruals. As in the case of mandatory audits, there are no differences based on the audit fees paid for income-decreasing accruals.

#### 4.2. Voluntary vs mandatory audits

In the previous section we have observed that the interaction term is significantly positive, offsetting the negative effect of LNFEES on the level of earnings



**Table 6.** Regression results with abnormal fees.

	DA		-DA		+DA	
	Coef.	t	Coef.	t	Coef.	t
VOL	-0.0015	-0.53	0.0019	0.47	-0.0043	-0.93
AB_LNFEES	-0.0119	-2.88***	0.0105	1.69*	-0.0144	-2.15**
INTER_AB	0.0178	2.30**	-0.0064	-0.55	0.0313	2.41**
LARGE	-0.0076	-1.29	0.0164	1.91*	-0.0010	-0.10
BIG	0.0042	0.60	-0.0068	-0.65	-0.0053	-0.45
LNASS	0.0042	1.66*	0.0116	2.98***	0.0178	4.40***
ROBA	0.0257	2.91***	0.0686	5.22***	0.1502	9.97***
N_EARN	0.0092	5.14***	-0.0137	-5.30***	0.0007	0.24
LEV	0.0259	4.29***	0.1067	11.61***	0.1438	14.46***
LIQ	0.0001	0.09	0.0065	4.91***	0.0062	5.58***
GROWTH	0.0063	2.47**	-0.0164	-4.14***	-0.0110	-2.63***
AGE	-0.0007	-1.88*	0.0011	1.99**	-0.0015	-2.55**
Intercept	0.0454	2.04**	-0.2477	-7.16***	-0.1099	-3.15***
N	26,328		13,259		13,064	
F	5,09		14.17		19.94	
R-Within	0.48%		3.34%		4.67%	

Table reports the FE regression results of the following model:  $EM_{it} = \alpha + \beta_1 VOL_{it} + \beta_2 AB_{LNFEES_{it}} + \beta_3 INTER_{AB_{it}} + \gamma CONTROL + \varepsilon_{it}$

EM is proxied by the absolute value of discretionary accruals (|DA|) and the signed accruals (+/- DA).

\*\*\* \*\* and \* denote the coefficient's statistical significance at the 1%, 5% and 10% confidence level, respectively. Coefficients of year dummies are not included for parsimony.

management. In order to observe in more detail if the effect of LNFEES is different for voluntary and mandatory audits, we run Model (1) separately for the subsamples of companies below (VOL = 1) and above SAT (VOL = 0), excluding the variables VOL and INTER. The results are reported in Table 5.

Panel A shows the results for the subsample of voluntary audits. We can see that LNFEES is not significant in any of the regressions, which suggests that the audit fees paid by the companies do not affect the level of earnings management among voluntary audits. However, we note that the results for companies below SAT may be affected by the sample size, since many of the control variables that are significant in Table 4 (total sample) and in Panel B of Table 5 (mandatory audits) are not significant in Panel B (voluntary audits). Therefore, our finding that audit fees do not have a significant effect on the level of earnings management for voluntary audits may be driven by the sample being too small (Huguet & Gandía, 2014), so it should be interpreted with caution. In the case of mandatory audits, we observe that LNFEES remains significantly negative when using |DA| and -DA, so these results support those obtained in the previous section and Hypothesis 2.

### 4.3. Abnormal audit fees

As we stated in Section 3.1, we note that the effect of LNFEES on the level of earnings management may only be apparent, and thus we should examine the effect of abnormal fees. Therefore, we run Model (2), in which we replace LNFEES and INTER by AB\_LNFEES and INTER\_AB, respectively. Table 6 shows the results for these regressions.

We can see that VOL is not significant in any regression, while AB\_LNFEES is significantly negative and INTER\_AB is significantly positive. Given that VOL was

**Table 7.** Alternative measures.**Panel A:** Modified Jones Model

	DA		-DA		+DA	
	Coef.	t	Coef.	t	Coef.	t
VOL	-0.0203	-1.75*	-0.0028	-0.16	-0.0500	-2.48**
LNFEES	-0.0055	-1.68*	-0.0009	-0.17	-0.0101	-1.79*
INTER	0.0110	1.82*	0.0011	0.13	0.0267	2.50**
LARGE_A	-0.0050	-0.99	0.0137	1.93**	0.0025	0.30
BIG	0.0050	0.81	-0.0076	-0.85	0.0001	0.01
LNASS	0.0038	1.69*	0.0124	3.58***	0.0212	5.76***
ROBA	0.0212	2.64***	0.0789	6.55***	0.1493	11.09***
N_EARN	0.0125	7.68***	-0.0122	-5.33***	0.0057	1.97**
LEV	0.0326	6.05***	0.0833	10.32***	0.1454	16.44***
LIQ	-0.0003	-0.48	0.0061	5.51***	0.0060	6.00***
GROWTH	0.0050	2.13**	0.0106	2.90***	0.0130	3.43***
AGE	-0.0013	-4.06***	0.0014	2.95***	-0.0019	-3.59***
Intercept	0.0739	3.67***	-0.2541	-8.18***	-0.1114	-3.54***
N	30,505		15,532		14,968	
F	8.44		16.63		25.11	
R-Within	0.71%		3.37%		5.18%	

**Panel B:** Short-term Jones Model

	DA		-DA		+DA	
	Coef.	t	Coef.	t	Coef.	t
VOL	-0.0193	-1.70*	0.0055	0.33	-0.0471	-2.42**
LNFEES	-0.0045	-1.30	-0.0077	-1.48	-0.0134	-2.39**
INTER	0.0103	1.74*	-0.0026	-0.30	0.0245	2.38**
LARGE_A	-0.0037	-0.75	0.0132	1.85*	0.0039	0.47
BIG	0.0060	0.99	-0.0207	-2.28**	-0.0042	-0.42
LNASS	0.0046	2.05**	0.0118	3.44***	0.0147	4.09***
ROBA	0.0287	3.63***	0.0722	6.01***	0.1386	10.51***
N_EARN	0.0102	6.43***	-0.0105	-4.66***	0.0025	0.88
LEV	0.0371	7.01***	0.0767	9.59***	0.1389	15.94***
LIQ	0.0007	1.13	0.0054	4.82***	0.0056	5.76***
GROWTH	0.0033	1.42	-0.0128	-3.65***	-0.0114	-2.97***
AGE	-0.0014	-4.58***	0.0026	5.70***	-0.0011	-2.18**
Intercept	0.0637	3.22***	-0.2590	-8.42***	-0.0615	-1.97**
N	30,529		15,219		15,310	
F	8.93		14.21		20.88	
R-Within	0.75%		3.01%		4.23%	

Panel A reports the FE regression of Model (1) using the Modified Jones Model as the proxy for EM.

Panel B reports the FE regression of Model (1) using the Short-term Jones Model as the proxy for EM.

\*\*\* \*\* and \* denote the coefficient's statistical significance at the 1%, 5% and 10% confidence level, respectively. Coefficients of year dummies are not included for parsimony.

significant when using Model (1), the lack of significance of VOL in this regression may mean that an association exists between voluntary audits and abnormal audit fees. In this regard, Gandía and Huguet (2018) show that voluntary audits are billed at a higher price than mandatory audits, which they attribute to the signalling value of price among credence goods such as audit services. In this line, the effect observed for VOL in Section 4.1 may be contained in AB\_LNFEES: voluntarily audited companies with a true commitment to accounting quality are willing to pay a premium for audit services, and as a consequence of the audit work and their commitment (both reflected by the abnormal audit fees paid by the auditees) they report lower levels of earnings management. Therefore, the results from this additional analysis support those shown in Section 4.1.

**Table 8.** Alternative measures – Abnormal fees.

	DA		-DA		+DA	
	Coef.	t	Coef.	t	Coef.	t
VOL	-0.0009	-0.33	-0.0006	-0.16	-0.0042	-0.89
AB_LNFEEES	-0.0124	-2.98***	0.0105	1.70*	-0.0170	-2.53**
INTER_AB	0.0186	2.38**	-0.0136	-1.20	0.0332	2.46**
LARGE_A	-0.0090	-1.51	0.0128	1.45	-0.0015	-0.15
BIG	0.0048	0.68	0.0026	0.24	-0.0016	-0.14
LNASS	0.0042	1.66*	0.0119	3.03***	0.0219	5.38***
ROBA	0.0219	2.46**	0.0794	5.93***	0.1460	9.73***
N_EARN	0.0112	6.18***	-0.0134	-5.20***	0.0030	0.94
LEV	0.0309	5.10***	0.0969	10.47***	0.1479	14.84***
LIQ	-0.0004	-0.49	0.0065	5.10***	0.0070	6.20***
GROWTH	0.0084	3.26***	0.0057	1.40	0.0138	3.38***
AGE	-0.0006	-1.60	0.0008	1.51	-0.0016	-2.69***
Intercept	0.0423	1.89*	-0.2427	-6.94***	-0.1463	-4.21***
N	26,308		13,215		13,088	
F	6.54		14.31		22.89	
R-Within	0.62%		3.40%		5.28%	

  

	DA		-DA		+DA	
	Coef.	t	Coef.	t	Coef.	t
VOL	-0.0006	-0.21	-0.0012	-0.28	-0.0060	-1.21
AB_LNFEEES	-0.0076	-1.87*	0.0055	0.86	-0.0184	-2.59**
INTER_AB	0.0156	2.04**	-0.0071	-0.60	0.0461	3.22***
LARGE_A	-0.0038	-0.64	0.0117	1.28	0.0026	0.25
BIG	0.0037	0.53	0.0023	0.21	-0.0026	-0.22
LNASS	0.0057	2.29**	0.0073	1.78*	0.0194	4.51***
ROBA	0.0313	3.60***	0.0703	5.07***	0.1370	8.59***
N_EARN	0.0093	5.23***	-0.0127	-4.78***	0.0005	0.15
LEV	0.0383	6.43***	0.0973	10.15***	0.1517	14.32***
LIQ	0.0006	0.85	0.0073	5.54***	0.0074	6.22***
GROWTH	0.0047	1.87*	-0.0539	-12.83***	-0.0546	-12.56***
AGE	-0.0006	-1.66*	0.0011	1.91*	-0.0016	-2.48**
Intercept	0.0232	1.05	-0.1956	-5.39***	-0.1246	-3.38***
N	26,316		13,213		13,098	
F	6.41		21.14		26.01	
R-Within	0.61%		4.94%		5.95%	

Panel A reports the FE regression of Model (2) using the Modified Jones Model as the proxy for EM.

Panel B reports the FE regression of Model (2) using the Short-term Jones Model as the proxy for EM.

\*\*\*, \*\* and \* denote the coefficient's statistical significance at the 1%, 5% and 10% confidence level, respectively. Coefficients of year dummies are not included for parsimony.

#### 4.4. Alternative measures of earnings management

In order to test if the results are sensitive to the measure of earnings management we used, we also estimate discretionary accruals using two variations of the original Jones Model: i) the modified Jones Model (De Fuentes & Porcuna, 2019; Dechow et al., 1995; Paiva et al., 2019) and ii) the short-term Jones Model (Beneish, 1998; Teoh et al., 1998). The results for Model (1) and Model (2) are reported in Tables 7 and 8, respectively, and are qualitatively similar to those reported in the main analysis.

### 5. Conclusions

In spite of the extensive research about the impact of audit fees and voluntary audits on audit quality, there is no research examining whether there is a combined effect of

voluntary audits and audit pricing that affects audit quality. This study examines whether the effect of audits on audit quality, measured through the level of earnings management, is affected by the type of audit and the audit fees, as well as whether the impact of audit fees on earnings management and audit quality is different based on the nature of the audit.

Using a sample of Spanish SMEs composed of both voluntarily and mandatorily audited companies, we examine if voluntary audits have a lower level of earnings management, as an inverse proxy for audit quality, as compared to mandatory audits, as well as whether there is an association between audit fees and earnings management, and if this effect is different between voluntary and mandatory audits. Although the preliminary results show that both voluntary audits and audit fees are negatively associated with earnings management and hence positively associated with audit quality, we note that the interaction term has a positive association with earnings management. Therefore, the results suggest that voluntary audits have higher quality than mandatory audits when audit fees are lower; as audit fees rise, differences in audit quality reverse and thus mandatory audits deter more earnings management (i.e. have higher audit quality) when audit fees are high. The results also show that the effectiveness of auditors against earnings management activities is different depending on the sign of the discretionary accruals, being more permissive for decreasing-income accruals, which can be explained by auditor conservatism.

Additional analyses considering abnormal fees show that the significance of voluntary audits disappears, while the effect of abnormal audit fees on the level of earnings management is significantly negative. Considering previous literature that shows an audit fee premium for voluntary audits, the results suggest that higher fees are associated with audit quality: auditors that receive higher abnormal audit fees restrain earnings management to a greater extent, and thus there is a positive association between audit fees and audit quality. The results observed for the differentiation between positive and negative accruals remain significant. Furthermore, an additional analysis using alternative measures of discretionary accruals reports qualitatively similar results.

Considering the results as a whole, they suggest that mandatorily audited companies that pay higher audit fees have a stronger commitment to accounting quality, as opposed to the passively compliant companies that choose 'low-cost' auditors that are more permissive with earnings management. In the case of voluntary audits, although the preliminary analysis suggests that higher audit fees are associated with higher discretionary accruals, the results from the additional analysis using abnormal audit fees suggest that the audit fee premium is linked to voluntary audits that are committed to accounting quality. Globally, the results support the theory that audits, as credence goods, use price to signal quality. On the other hand, the results also support auditor conservatism, in the sense that auditors are more prone to deter income-increasing earnings management than income-decreasing earnings management, both in the mandatory and the voluntary setting.

The paper does have some limitations. First, estimations can be affected by endogeneity problems. We have tried to mitigate them using FE regressions, but we cannot rule out completely that the association between the cost of debt and the audit-based variables is not unidirectional. A second limitation is related to the voluntary audit.

With regard to its definition, we have considered that companies below SAT are exempt from the audit requirement, but they can be mandatorily audited for other reasons; however, as explained in Section 3.2, we do not expect this limitation to be significant. On the other hand, the results for voluntarily audited companies may be affected by the sample size because the sample is so small that many of the control variables that are significant for mandatory audits become insignificant for voluntary audits, so conclusions about voluntary audits must be interpreted with caution.

The paper presents several opportunities for future research. First, given that previous literature shows an audit fee premium among large auditors, an analysis of the impact that the association between audit fees and auditor type (Big 4, Middle-Tier auditors and small auditors) has on audit quality would be interesting in order to ascertain whether auditors adjust their services (both quality and price) depending on the characteristics of the client. Furthermore, the results with respect to the interaction between voluntary audits and audit fees should encourage the examination of the interaction of other audit characteristics that may affect audit quality, such as auditor office size or the composition of the audit team. Finally, considering the responsibility of managers in the preparation of financial information, future research should examine the managerial implications derived from audit and consultancy fees.

## Notes

1. When using the term ‘audit’, we refer to a financial audit, i.e. the independent examination of financial information in order to express an opinion as to whether the financial statements have been prepared in accordance with generally accepted accounting principles.
2. Mandatory audit requirements differ across countries. In the European Union, listed companies and companies belonging to certain industries are required to be audited worldwide. With regard to private companies, it is generally established that small companies are not required to be audited, although thresholds for a company to be considered as ‘small’ may vary across EU members. This is better explained in Section 3.2.
3. Following García Osma et al. (2005), earnings management is defined as any practice intentionally carried out by managers with the aim of reporting accounting numbers that are different from those that should be reported. Since the role of auditors is to guarantee the reliability of accounting information, earnings management has been considered an inverse measure of audit quality (Francis, 2011).
4. Total accruals are calculated as:  $TA = (\Delta CA - \Delta \text{cash}) - (\Delta CL - \Delta \text{debt}) - \text{Dep}$ , where TA are total accruals,  $\Delta CA$  is the change in the current assets,  $\Delta \text{Cash}$  is the change in cash,  $\Delta CL$  is the change in current liabilities,  $\Delta \text{Debt}$  is the change in short-term financial debt, and Dep represents the expenses in depreciation and amortization.
5. We need at least six observations by each industry-year combination to estimate NDA.
6. Statutory Audit Thresholds. Section 3.2 has more information about the use of these limits.
7. Unreported analyses using Return on Assets (ROA) and Return on Equity (ROE) show qualitatively similar results.
8. Sistema de Análisis de Balances ibéricos (Iberian Balance-sheet Analysis System).
9. Accounting and Auditing Institute.

## Disclosure statement

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## Appendix 1. Description of variables (Models [1] and [2])

Variable name	Description
<i>Models (1) and (2)</i>	
<i>Dependent variable</i>	
EM	Earnings management measure
DA	Absolute discretionary accruals
+/- DA	Signed discretionary accruals
<i>Test variables</i>	
VOL	Dummy = 1 if company is voluntarily audited, 0 otherwise
LNFEES	Natural logarithm of audit fees
INTER	Interaction term between VOL and LNFEES
AB_LNFEES	Abnormal audit fees, calculated according to Model (3)
INTER_AB	Interaction term between VOL and AB_LNFEES
<i>Control variables</i>	
LARGE	Dummy = 1 if company is audited by a Big 4 or a Middle-Tier auditor, 0 otherwise
BIG	Dummy = 1 if company is audited by a Big 4 auditor, 0 otherwise
LNASS	Natural logarithm of total assets
ROBA	Return on Business Assets
N_EARN	Dummy = 1 if earnings are negative, 0 otherwise
LEV	Leverage ratio
LIQ	Liquidity ratio
GROWTH	Growth, measured as the growth in sales
AGE	Age of the company

## Appendix 2. Description of variables (Model [3])

Variable name	Description
<i>Dependent variable</i>	
LNFEES	Natural logarithm of audit fees
<i>Test variables</i>	
LARGE	Dummy = 1 if company is audited by a Big 4 or a Middle-Tier auditor, 0 otherwise
BIG	Dummy = 1 if company is audited by a Big 4 auditor, 0 otherwise
LNASS	Natural logarithm of total assets
LNSAL	Natural logarithm of net turnover
LNEMP	Natural logarithm of number of employees
INVREC	Ratio of inventory and receivables to total assets
ACQ	Dummy = 1 if company has carried out acquisitions
INT_ASS	Proportion of intangible assets
UNUS	Dummy = 1 if company reports unusual items in the income statement
SIMP_GAAP	Dummy = 1 if company uses simplified GAAP
NUM_SUBS	Number of subsidiaries
GROUP	Dummy = 1 for companies belonging to a group
LEV	Leverage ratio
CH_LEV	Changes in leverage between t and t-1
GROWTH	Company growth (growth in sales)
ROBA	Return on Business Assets
NEG_EARN	Dummy = 1 if earnings are negative, 0 otherwise
NEG_ROBA	Interaction term between ROBA and NEG_EARN
CURRENT	Ratio of current assets to current liabilities
QUICK	Ratio of current assets excluding inventories to current liabilities
SOLV	Ratio of share capital to total assets
CH_SOLV	Changes in solvency between t and t-1
MOD	Dummy = 1 if modified audit report, 0 otherwise
YEAR_END	Dummy = 1 if year-end on 31 December
C_CITY	Dummy = 1 if company is located in Madrid or Barcelona
AGE	Age of the company