



Audit opinion and earnings management: Evidence from Greece



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ABSTRACT

This study examines the relationship between audit opinions and earnings management, as measured by discretionary accruals, for listed firms on the Athens Stock Exchange (ASE). We divide the qualified audit opinions into two categories: qualified for the going-concern uncertainty and qualified for other reasons. The results indicate that audit opinions are not related to earnings management. Client financial characteristics, such as profitability and size are determinants of the going-concern audit opinion decision. The decision of auditors to issue qualified opinions for other reasons is explained by the type of audit opinion issued in the previous year.

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1. Introduction

In recent years, Greece has experienced the effects of three major financial events that are worth investigating in the context of financial and auditor reporting. These events are the implementation of International Financial Reporting Standards (IFRS) on publicly listed firms beginning on January 1, 2005, the global financial crisis that began in the US in 2007 and officially ended in 2009 and, most importantly, the Greek debt crisis.

The first signs of the European sovereign debt crisis became visible in Greece in 2009. Pre-existing conditions, such as the engagement of the government in substantial foreign borrowing and domestic overspending, the successive downgrading of government debt, the failure to implement consistent economic and structural reforms and the deterioration of macro-economic indicators, undermined the ability of the country to prevent the shocks associated with the crisis. While Greece has received consecutive packages of rescue loans from the trilateral mechanism of financial support – the European Union (EU), the International Monetary Fund (IMF) and the European Central Bank (ECB) – these rescue loans have been conditional on the implementation of austerity measures and the restructuring of the Greek national debt.

Inevitably, financial crises have a direct effect on the business world. For example, liquidity and credit problems are intensified, and the threat of bankruptcy is even more pronounced. In turn, these threats have an impact on a number of parties related to affected firms. The economic and social costs of corporate failures are substantial to the suppliers of capital, that is, the investors and creditors, who may lose their investments, as well as to the management and employees, who may lose their jobs (Charitou, Lambertides, & Trigeorgis, 2007). In such a setting, there is a growing concern about the quality of the information provided in financial statements by managers, especially of financially distressed firms because their incentives to manage earnings are potentially magnified. At the same time, concerns over auditor reporting increase.

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Although auditors have incentives to remain independent,² their willingness to report accounting deficiencies may lessen during crises. Auditors respond to incentives; when legal, regulatory or economic conditions are more tolerant for auditors, they are likely to issue less qualified opinions (Carson et al., 2012). Conversely, when there are changes that put the profession in the spotlight, the likelihood of issuing going-concern qualified opinions is higher (Carson et al., 2012).

Our aim is to investigate the association between auditor reporting, as measured by auditors' willingness to issue qualified opinions, and earnings management, as measured by discretionary accruals. The sample of the study consists of firms listed on the Athens Stock Exchange (ASE) for the post-IFRS period 2005–2011, a period incorporating the severe global and Greek economic downturn. First, we analyse the qualification types of all qualified audit opinions. Second, in the empirical investigation of our hypotheses, we divide the qualified opinions into two categories: qualified for the going-concern uncertainty and qualified for other reasons. Finally, we test our hypotheses in a subsample of distressed firms based on the probability of greater incentives to manage earnings.³

This topic is important because the current economic environment reopens fundamental questions about the role of auditors in maintaining financial statement users' confidence in the audit report. Therefore, it is vital to examine the association between audit opinion and earnings management in a situation where the propensity to manage earnings may be high. In addition, although audit qualifications and their determinants have been previously examined in the Greek context,⁴ it is the first time that the qualification types are extensively analysed for the period 2005–2011 and that the going-concern uncertainty is separated from the other qualifications in an empirical investigation of the audit opinion decision.

Overall, the results indicate that audit opinions are not related to earnings management. The variability in the going-concern decision is explained by client financial characteristics, such as profitability and firm size, audit effort and audit opinion type issued in the previous year. The economic downturn has affected the financial condition of firms, which is depicted in the type of audit opinion they receive. Additionally, the qualified audit opinion, for reasons other than the going-concern uncertainty, is explained by the type of audit opinion issued in the previous year, both in the full and the distressed samples. Auditors do not consider client financial characteristics in their reporting decision, and prior year audit opinion is the only useful decision tool in predicting the current year's opinion.

The remainder of the study is organised as follows. Section 2 describes the Greek institutional setting of auditing. The literature review and hypotheses are presented in Section 3. Section 4 discusses the methodology, describes the sample, outlines the analysis of the audit opinion qualifications and presents the empirical model. Section 5 documents the results, while Section 6 presents the study's conclusions.

2. The institutional setting of auditing in Greece

Greece is a continental European country with many economic and socio-political distinctive features. During the last three decades, Greece has been influenced by neo-liberal, free-market forces, but Greek culture, politics and economics remain a mixture of Eastern and Western influences (Caramanis, 2005).⁵ Business organisations have been traditionally family oriented (Spanos, Tsipouri, & Xanthakis, 2008) and stakeholder driven, with poor legal protection for investors. Banks are major providers of corporate capital, and they often develop personal relationships with the firms (Tzovas, 2006). In this relationship-based system, banks may arrive at their credit decisions based on information obtained directly from the owners of the firms, thereby undermining the importance of public accounting information (Tzovas, 2006). The significant expansion of the Athens Stock Exchange (ASE) in the late 1990s turned many firms from private-family owned businesses to publicly listed entities (Spanos, 2005), without changing the existing relatively high levels of family ownership concentration (Lazarides, 2010). In addition, the expansion of the ASE, followed by the crash of 2000–2001 and the requirements of international capital providers raised the need for effective corporate governance. However, Greek listed firms are still not entirely accustomed to the philosophy of modern corporate governance (Dimitropoulos & Asteriou, 2010), which further diminishes the quality of accounting information available to the public.

The Greek accounting setting is characterised as tax-driven and conservative (Ballas, 1994; Spathis & Georgakopoulou, 2007). As the corporate tax rate is perceived to be high, many firms attempt to avoid taxes using earnings management techniques (Baralexis, 2004). Furthermore, as financial statements are not the primary source of information for family concentrated firms, tax-reducing strategies may be implemented (Tzovas, 2006). With respect to the IFRS transition, Ballas, Skoutela, and Tzovas (2010) argue that it has increased reliability, transparency and comparability of financial statements. In contrast, the results of Karampinis and Hevas (2011) indicate that only minor improvements are evidenced in value

² Competence and independence are used to describe audit quality (DeAngelo, 1981). Competence is the ability of the auditor to detect material error in the financial statements, and independence from the client firm is the willingness of the auditor to take a position that opposes the wishes of the client and report the material error (DeAngelo, 1981).

³ We extend the study of Tsipouridou and Spathis (2012) by reporting an in-depth analysis of the different types of audit opinion qualifications. While they consider an audit opinion dummy variable that takes on the value of 0 for an unqualified opinion and 1 for a qualified opinion, irrespective of the qualification type, we measure audit opinions in a more disaggregated fashion.

⁴ See for example Caramanis and Spathis (2006), Kirkos, Spathis, Nanopoulos, and Manolopoulos (2007), Koumanakos, Georgopoulos, and Siriopoulos (2008), Spathis (2003) and Spathis, Douplos, and Zopounidis (2002, 2003).

⁵ In 1980, to facilitate membership to the EU, Greece adopted a general accounting plan closely based on the French Plan Comptable Général, which was amended in 1987 and 1990 in accordance with the 4th and 7th EU Directives, respectively (Ballas, 1994; Tsalavoutas & Evans, 2010).

relevance and conditional conservatism. Ball (2006) questions the convergence efforts of financial reporting stating that EU economic rules are not implemented evenly, with some countries, including Greece, being well-known for their reluctance to comply with convergence initiatives.

2.1. The audit market

In 1955, corporate auditing was introduced in Greece with the establishment of the Body of Chartered Accountants (SOL), which was state-regulated and entitled to significant privileges (Dedoulis & Caramanis, 2007). In 1992, the Greek auditing profession was liberalised, and SOL was transformed into a private audit firm, SOL S.A. A new public legal entity was then created, the Body of Certified Auditors and Accountants (SOEL), to regulate the audit profession.⁶ SOL S.A. has been the dominant audit firm despite several international and Greek audit firms entering the market, such as PricewaterhouseCoopers (PwC), Deloitte Touche Tohmatsu, Ernst & Young and KPMG, i.e., the 'Big 4', as well as approximately 20 Greek and second-tier international audit firms.

The effectiveness of the external audit function has been questioned by various parties, such as financial institutions, investors, journalists and politicians (Leventis, Weetman, & Caramanis, 2011). In 2003, the Greek Ministry of Economy established the Accounting and Auditing Oversight Board (ELTE) in response to the Sarbanes Oxley Act (SOX) of 2002.⁷ However, as the enforcement mechanisms are still weak, there is low risk of litigation by third parties. These conditions do affect the quality of audit services as auditors may be tempted to behave opportunistically.

The audit services industry profited with the transition of publicly listed firms from Greek accounting standards to the IFRS. The inclusion of reconciliation statements in the 2005 financial statements and the restatement of the 2004 accounts prepared under Greek GAAP to the IFRS increased the workload of auditors. In 2005, the market value for audit firm services was 137 million euros, an increase of 12% compared to 2004 (Hellastat, 2011). The annual growth rates for the next two years remained steadily high, i.e., 13.8% (2006) and 12.2% (2007), but eased to 6.2% in 2008 and 3% in 2009 (Hellastat, 2011).

2.2. Auditing standards

Greek auditing standards (GAS)⁸ converged with the objectives of the International Auditing and Assurance Standards Board (IAASB) and were developed according to the principles and requirements of the International Standards on Auditing (ISA), as issued at the end of 2004. Thus, during the audit process and the issuance of the audit report, auditors were encouraged to use ISA as a frame of reference. In 2008, new regulation was introduced⁹ and audits were, thereafter, conducted in accordance with the clarified ISA, which applied to audits of financial statements for periods beginning on or after December 15, 2009. To facilitate the implementation of these standards, ELTE, with the assistance of SOEL, translated the clarified ISA into Greek, and it was approved by law in October 2012.¹⁰

Consistent with GAS 7700, five types of audit opinion were issued in Greece: (i) unqualified, (ii) qualified with matters of emphasis, (iii) qualified with exceptions (or 'except for'), (iv) disclaimer and (v) adverse.¹¹ The going-concern uncertainty qualification is present in all types of qualified opinions, depending on the adequacy of disclosure and the severity of the uncertainty. Nevertheless, the decision to issue a going-concern opinion is complex and requires considerable amount of professional judgement (Carson et al., 2013). The audit report aims to enhance the degree of confidence of intended users in the financial statements, yet the auditor assumes responsibility only for the opinion that accompanies the report. The audit opinion is not a certificate, and the issuance of a going-concern qualification is by no means a prediction of bankruptcy (Chen & Church, 1996).

3. Literature review and hypotheses

Our study revisits the potential link between earnings management and the likelihood of receiving a qualified opinion. Prior studies, mostly from the US, provide mixed evidence on the nature of this relationship. Francis and Krishnan (1999), using a large sample of US listed firms and after controlling for client-specific financial and market risk variables, find that auditors of firms with high levels of accruals in absolute terms are more likely to issue qualified opinions for asset realisation

⁶ The functions of SOEL include the maintenance of the Registry of Auditors, the issuance of guidelines concerning the audit profession and the organisation and conduct of the professional exams for obtaining the license to practice as a certified public accountant (statutory auditor).

⁷ ELTE has the mission to set up the auditing standards of listed and non-listed entities in accordance with law, to conduct inspections of mandatory audits, to advise the Ministry on issues relevant to accounting and auditing standards, to supervise SOEL and to enact codes of conduct for statutory auditors.

⁸ Decision no. 483/6.10.2004 (Government Gazette 1589/B/2004).

⁹ Law 3693/2008 'Harmonization of Greek legislation with Directive 2006/43/EC on statutory audits of annual accounts and consolidated accounts' (Government Gazette 174/A/2008).

¹⁰ Decision no. 41658/722/1.10.2012 'Approval and validity of ISA translated in Greek' (Government Gazette 2848/B/2012).

¹¹ After the adoption of the clarified ISA, the types of audit opinions, according to ISA 700, are as follows: unmodified, qualified (or 'except for'), adverse and disclaimer. ISA 700 uses the term 'qualified' as synonymous with 'except for'. Also, the emphasis of matter paragraph is placed after the opinion paragraph (ISA 706); ISA 706 indicates that the auditor's report is not modified with respect to the matters addressed in this paragraph. To enable our analysis, we apply the GAS 7700 categorisation to the audit opinions of 2010 and 2011, which does not differ substantially from ISA 700.

uncertainties and for going-concern problems, than auditors of firms with low absolute levels of accruals. This relationship is stronger for firms with large negative accruals. Similarly, [Bartov, Gul, and Tsui \(2001\)](#), in a study examining the ability of various accruals models to detect earnings management, find that a significant positive link exists between the absolute value of discretionary accruals and the likelihood of receiving a qualified opinion. However, this relationship is significant for only two of the models tested – the cross-sectional [Jones \(1991\)](#) model and the cross-sectional modified Jones ([Dechow, Sloan, & Sweeney, 1995](#)) model. Finally, [Sengupta and Shen \(2007\)](#) re-examine this issue and indicate that the likelihood of receiving a going-concern audit opinion is higher when the quality of accruals for a firm is low.¹²

By contrast, [Bradshaw, Richardson, and Sloan \(2001\)](#) find no evidence that the frequency of qualified audit opinions is higher in firms with sizeable accruals. They conclude that auditors do not alert investors to the increased incidence of future earnings declines and GAAP violations that are often associated with high levels of accruals on a timely basis. The rationale is that such earnings quality issues are beyond the scope of the audit. In other words, auditors may understand that inflated accruals imply a greater likelihood of future earnings declines and GAAP violations, but they are not required to communicate this information to investors through their audit opinions. [Butler, Leone, and Willenborg \(2004\)](#) support this view and conclude that auditors are unlikely to issue qualified opinions for earnings-management reasons. More specifically, based on over 7000 qualified opinions of US firms for the period 1994–1999, they examine the relationship between abnormal accruals and audit opinion type. They find a positive association between modified opinions and abnormal accruals, when accruals are measured in absolute terms. When they change the dependent variable from the absolute level to the actual amount of abnormal accruals, they discover that qualified opinions are negatively related to accruals. They attribute this negative association to the fact that firms with large negative accruals tend to receive GC opinions, which are motivated more by their distressed status and not by earnings management. Overall, they find no evidence that auditors use the audit opinions to alert financial statement users of either excessive earnings management or the consequences of high levels of positive accruals.

The above studies are conducted in the US. Few investigations from countries with different institutional settings and auditor reporting regimes have investigated this issue. [Herbohn and Rangunathan \(2008\)](#) investigate whether a negative association exists between actual abnormal accruals and the probability of receiving a qualified audit opinion in Australia. They focus on a sample of firms listed on the Australian Stock Exchange over the period 1999–2003. Consistent with [Butler et al. \(2004\)](#), they document a negative link between the likelihood of a qualified opinion and accruals that is driven by going-concern issues for firms with a greater risk of financial distress and audit litigation. Their results suggest that earnings management is not the cause of audit opinion qualifications.

[Arnedo, Lizarraga, and Sanchez \(2008\)](#) test this relationship in a Spanish context for a sample of private pre-bankrupt firms. They separate the qualified opinions into two groups – qualified based on going-concern issues and qualified for other reasons. Their evidence, consistent with [Butler et al. \(2004\)](#), reveals a negative association, which stems from reports containing uncertainty about the likelihood of a firm continuing as a going-concern. A positive relationship is found, however, when the reasons for the qualification are other than the going-concern. Unlike [Butler et al. \(2004\)](#), they claim that auditor reporting is a positive response to earnings management and that the negative relationship in going-concern cases is a consequence of auditor conservatism rather than a result of the distressed status of the firm and its liquidity tactics for survival.

The inconclusive evidence of prior studies raises a question regarding the association between earnings management and the issuance of a qualified audit opinion in Greece. In contrast to the US, where most audit reports are qualified based on the going-concern uncertainty, Greek qualified audit reports are frequently issued for reasons other than going-concern. This implies that auditors have the opportunity to convey different warning signals to users of the financial statements. As [Lam and Mensah \(2006\)](#) state, it is an empirical question of whether auditors, when granted a greater degree of flexibility by both a more limited litigation-risk environment and the option to issue a wider range of audit reports, attempt to convey more information to the public. In an effort to examine this relationship in detail, we divide qualified opinions into two categories – qualified based on the going-concern uncertainty and qualified for reasons other than the going-concern uncertainty. Our hypotheses, stated in the null form, are as follows:

H1. Qualified audit opinions for going-concern uncertainty are not associated with discretionary accruals, other things being equal.

H2. Qualified audit opinions for reasons other than the going-concern uncertainty are not associated with discretionary accruals, other things being equal.

Following prior research ([Boone, Khurana, & Raman, 2010](#); [Carey & Simnett, 2006](#); [DeFond, Raghunandan, & Subramanyam, 2002](#); [Knechel & Vanstraelen, 2007](#); [Mutchler, Hopwood, & McKeown, 1997](#); [Reynolds & Francis, 2000](#)), we also test these hypotheses in a subsample of financially distressed firms. The motivation for this derives from the rising concern about the quality of the information provided in financial statements by managers, especially of financially

¹² They use three measures of accruals quality, which are estimated based on the model of [Dechow and Dichev \(2002\)](#) with modifications suggested by [McNichols \(2002\)](#) and [Francis, LaFond, Olsson, and Schipper \(2005\)](#), and capture the extent to which working capital accruals of a period are not explained by the current period, previous period or next period operating cash flows.

distressed firms, in periods of tough economic conditions; in these circumstances, managers may have greater incentives to manage earnings.

Prior research suggests that managers of distressed firms have incentives for both earnings overstatements and understatements, both of which increase the probability of misrepresentation in financial statements. When managers are concerned with the short-term survival of their firm, they may report higher earnings to avoid debt covenant violations and the threat of bankruptcy (DeFond & Jiambalvo, 1994; Dichev & Skinner, 2002; Sweeney, 1994), while Schwartz (1982) argues that managers of distressed firms use accounting tactics to strengthen earnings per share to retain investor confidence. Additionally, managers of financially distressed firms may adjust earnings upwards out of self-interest. To avoid management turnover during the distressed period, they may temporarily inflate the market price to increase their compensation or gain from cashing in stock-based compensation holdings (Charitou et al., 2007).

Conversely, managers may voluntarily reduce reported earnings. DeAngelo, DeAngelo, and Skinner (1994) find that 87% of their sample of listed firms with persistent losses and dividend reductions engage in contractual renegotiations with lenders, unions, government and/or management. These renegotiations motivate managers to reduce reported earnings to convince labour unions or government authorities that the company is truly troubled and deserves wage concessions and government assistance. Jaggi and Lee (2002), in their study of financially distressed firms in the US, find that managers use income decreasing discretionary accruals if debt restructuring takes place or debts are renegotiated because waivers are denied. Finally, a decrease in earnings may be the result of the declining financial performance of the firm and its liquidity survival tactics and not necessarily the result of earnings manipulation (Butler et al., 2004).

The role of auditors in an economic downturn, characterised by increased client financial distress, is also mixed (Ettredge, Li, & Emeigh, 2011). International evidence reveals that auditors respond to these conditions by being more conservative in their reporting decisions, i.e., they are more willing to issue qualified opinions of going-concern uncertainty. Even in the less strict institutional environment of Greece, auditors may become more conservative due to the debt crisis. The international attention and criticism towards the auditing profession as well as litigation threats that may arise during this period are some of the reasons for increased conservatism. Fargher and Jiang (2008) show that auditors became more conservative in the aftermath of high-profile corporate failures occurring in the period 2000–2002. Additionally, reporting conservatism can be thought of as a response by auditors to their inability to assess the accuracy of reported accruals and the potential effect that accruals may have on the going-concern assumption (Francis & Krishnan, 1999).

On the other hand, auditor dependence may be more apparent during these periods because auditors' revenues are also decreased and their need to retain clients is stronger (Ettredge et al., 2011). Additionally, managers may pressure auditors with the threat of dismissal not to issue going-concern opinions due to the economic costs of this decision. The potential negative signal of a going-concern qualification could lead to the deterioration of an already distressed firm and increase the probability of failure, as suggested by the self-fulfilling prophecy (Guiral, Ruiz, & Rodgers, 2011). Consequently, the audit–client relationship has received renewed interest, and the role of auditors in ensuring that financial statements do not contain misleading information is more relevant than ever. Our hypotheses for the distressed sample are as follows:

H3. Qualified audit opinions for going-concern uncertainty are not associated with discretionary accruals for distressed firms, other things being equal.

H4. Qualified audit opinions for reasons other than the going-concern uncertainty are not associated with discretionary accruals for distressed firms, other things being equal.

4. Methodology

4.1. Sample

The initial sample consists of firms listed on the ASE. The sample period begins in 2005 and ends in 2011. It therefore spans three notable events of international importance – the mandatory adoption of the IFRS, the global financial crisis that began in 2007, and the European sovereign debt crisis that followed. We excluded firms in the financial, insurance and real estate sectors as their financial structure is not comparable to those of other industries and their discretionary accruals estimation is problematic (DeFond & Subramanyam, 1998). Additionally, we omitted sectors with less than ten firms in a year for the estimation of discretionary accruals. As a result, our sample included firms from the following 9 sectors: metals, construction and materials of construction, food and beverages, travelling and leisure, information technology, communication, trade, personal and domestic products, and industrial products and services.

The above selection procedure yielded 1479 firm-year observations for the analysis of the audit report qualifications. Data from audit reports were collected from the ASE online database. When not available in the database, we gathered all the required auditor information from the annual reports of the relevant firms. We then manually recorded the coding of the opinions in a spreadsheet, following GAS 7700. To ensure the objective identification of our coding, the 509 qualified opinions detected were read by more than one researcher and recoded when necessary.

Data availability for the estimation of discretionary accruals and the test and control variables used in the hypotheses testing reduced the sample size from 1479 to 1467 firm-year observations. Firms without a complete seven-year dataset were not excluded from the analysis, thus resulting in a different number of observations for each of the seven years. Annual

financial statement data were provided by Hellastat S.A.¹³ To reduce the impact of outlier observations on the results, we winsorised observations that fell in the top and bottom 1% of the empirical distribution of the continuous variables (Chi & Chin, 2011; Chung, Firth, & Kim, 2002). Regarding the financially distressed subsample, we restricted the analysis to situations where client firms exhibited negative cash flows from operations and/or negative net income during the current fiscal year, thus resulting in the identification of 845 firm-year observations.¹⁴

4.2. Analysis of qualified audit opinions

We analysed the qualified opinions in our sample to fully capture the details of the audit qualifications. According to Butler et al. (2004), the large-sample analysis of audit qualifications facilitates a detailed re-examination of the audit opinion and accounting accruals relation, which is investigated in the empirical section of this study. As Table 1 indicates, from a total of 1479 audit opinions, 65.6% were unqualified and 31% were qualified with matters of emphasis. Interestingly, the year 2010 is a break point. While the number of unqualified opinions steadily increases and almost doubles for the period 2005–2009, in 2010 the trend diverts. Similarly, the matters-of-emphasis opinions decrease significantly, from 134 in 2005 to 24 in 2009. Then, in 2010, they follow an upward trend. In 2010, we also detect the first disclaimer of opinion. Although there are a limited number of disclaimer opinions, they provide an indication of the effect of the debt crisis on firms.

Table 2 provides a detailed analysis of all qualifications for the seven-year period. It is clear that, while there are 509 qualified audit opinions in the sample, as shown in Table 1, we observe 822 audit qualifications in Table 2. The difference of 313 represents opinions with multiple qualifications. The most common qualification is the uncertain outcome of future tax audits (38.5%), especially for the period from 2005 to 2007. Under this qualification, firms do not make adequate provisions nor do they have any provisions for the unaudited fiscal years. Hence, there is potential for additional taxes and penalties. Additionally, a sum of 239 qualifications (29.1%), as expressed in the three types of qualified audit opinions, are related to going-concern uncertainty issues. The occurrence of this qualification steadily increases over the sample period, and in 2011, it reaches a peak. This may be attributable to the global financial crisis and the first visible signs of the Greek sovereign debt crisis. As Carson, Simnett, and Trønnes (2011) state, auditors responded to the financial crisis by paying greater attention to going-concern issues. Accordingly, they increased the number of opinions qualified for going-concern uncertainty during 2008 in countries such as the UK, Australia and France (Carson et al., 2011).

The findings of the analysis in Table 2 reveal very few instances of GAAP departures or scope limitations and, similar to Butler et al. (2004), provide little support for the rationale that qualified audit opinions suggest the presence of extreme earnings management. In the following sections, we empirically investigate this relationship, as undetected earnings management may still exist. Undetected earnings management refers to instances where earnings management occurs, but there is no obvious event that would reveal its occurrence to the public (Marquardt & Wiedman, 2004).

4.3. Estimation of discretionary accruals

Although accruals can be observed, it is very difficult to identify what portion is being managed to move profits towards a desired level of earnings. Some accrual adjustments are necessary and expected by investors, which constitute the non-discretionary component of accruals, while the remaining accruals are not dictated by firm conditions but are rather managed and termed discretionary (Charitou et al., 2007). We estimate discretionary accruals using an extension of Jones (1991) model. We employ the cross-sectional modified Jones model, proposed by Dechow et al. (1995), which is designed to increase the precision of the original model and eliminate its hypothesised tendency to measure discretionary accruals with error, when managerial discretion is exercised over revenues. Dechow et al. (1995) argue that earnings can be managed through discretionary revenues by recording these revenues at year end, when the cash has not yet been received. Total accruals are then affected through an increase in receivables. Thus, they suggest that when estimating the non-discretionary accruals, we must deduct the change in receivables, which is assumed to be discretionary, from the total change in revenues, as follows:

$$\frac{\Delta A_{it}}{A_{it-1}} = \beta_0 + \beta_{1t} \left(\frac{1}{A_{it-1}} \right) + \beta_{2t} \left(\frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} \right) + \beta_{3t} \left(\frac{PPE_{it}}{A_{it-1}} \right) + \varepsilon_i \quad (1)$$

¹³ Hellastat S.A. is a member of the European Association of Database & Directories Publishers and the World Association of Opinion & Marketing Research Professionals. It holds a database of business information that covers the economic activity in Greece and the Balkans. It is also a partner of Standard & Poor's and Thomson-Reuters plc.

¹⁴ There is not a generally accepted definition of financial distress. Mutchler et al. (1997) consider a company to be in financial distress if it exhibits at least one of the following criteria: (i) negative working capital in the last financial statements issued before bankruptcy, (ii) a loss from operations or a bottom-line loss in any of the three years prior to bankruptcy, or (iii) negative retained earnings in the current or previous two years. For the purposes of this study, we adopt the selection criteria of negative cash flows from operations and/or negative net income proposed by previous studies (Boone et al., 2010; Carey & Simnett, 2006; DeFond et al., 2002; Reynolds & Francis, 2000) as an indication of financial distress. By the end of the research period, i.e., 2011, approximately 60% of the 2005 companies that were identified as financially distressed, were either deleted or under suspension/surveillance in the ASE.

Table 1
Audit opinion type by year.

Audit opinion type	2005		2006		2007		2008		2009		2010		2011		Total	
Unqualified opinion	86	38.0%	115	50.4%	126	57.0%	174	80.9%	177	86.7%	164	82.0%	128	69.2%	970	65.6%
Qualified opinion																
Matters of emphasis	134	59.3%	104	45.6%	86	38.9%	34	15.8%	24	11.8%	30	15.0%	47	25.4%	459	31.0%
With exception/s	6	2.7%	4	1.8%	6	2.7%	6	2.8%	3	1.5%	4	2.0%	7	3.8%	36	2.4%
Adverse	0	0.0%	5	2.2%	3	1.4%	1	0.5%	0	0.0%	1	0.5%	1	0.5%	11	0.8%
Disclaimer	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.5%	2	1.1%	3	0.2%
Total qualified opinions	140	62.0%	113	49.6%	95	43.0%	41	19.1%	27	13.3%	36	18.0%	57	30.8%	509	34.4%
Total audit opinions	226	100.0%	228	100.0%	221	100.0%	215	100.0%	204	100.0%	200	100.0%	185	100.0%	1479	100.0%

Table 2
Analysis of the qualifications in audit opinions for the period 2005–2011.

Audit opinion qualifications	2005	2006	2007	2008	2009	2010	2011	Total								
Matters of emphasis																
Uncertain outcome of lawsuits	9	4.0%	8	4.3%	7	5.1%	6	7.8%	7	14.0%	3	4.9%	4	4.6%	44	5.3%
Going-concern uncertainty (GCU)	21	9.4%	18	9.8%	15	10.9%	28	36.4%	24	48.0%	39	63.9%	48	54.5%	193	23.5%
Uncertain outcome of future tax audits	110	49.1%	102	55.4%	86	62.3%	11	14.2%	4	8.0%	2	3.4%	1	1.1%	316	38.5%
Other reasons	75	33.5%	26	14.2%	8	5.8%	6	7.8%	4	8.0%	6	9.9%	19	21.6%	144	17.5%
Total qualifications, within category	215	96.0%	154	83.7%	116	84.1%	51	66.2%	39	78.0%	50	82.1%	72	81.8%	697	84.8%
With exception/s																
Scope limitations	0	0.0%	2	1.1%	4	2.9%	3	3.9%	4	8.0%	2	3.3%	2	2.3%	17	2.1%
Material misstatements	7	3.1%	4	2.2%	8	5.8%	10	13.0%	5	10.0%	1	1.6%	3	3.4%	38	4.5%
Other reasons (significant GCU)	2	0.9%	3	1.6%	2	1.4%	7	9.1%	2	4.0%	1	1.6%	8	9.1%	25	3.0%
Total qualifications, within category	9	4.0%	9	4.9%	14	10.1%	20	26.0%	11	22.0%	4	6.5%	13	14.8%	80	9.6%
Adverse opinion																
Material errors/omissions (general)	0	0.0%	9	4.9%	4	2.9%	5	6.5%	0	0.0%	3	4.9%	0	0.0%	21	2.6%
Material errors/omissions (GCU)	0	0.0%	12	6.5%	4	2.9%	1	1.3%	0	0.0%	3	4.9%	1	1.1%	21	2.6%
Total qualifications, within category	0	0.0%	21	11.4%	8	5.8%	6	7.8%	0	0.0%	6	9.8%	1	1.1%	42	5.2%
Disclaimer of opinion																
Scope limitations	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	1.6%	2	2.3%	3	0.4%
Total qualifications	224	100.0%	184	100.0%	138	100.0%	77	100.0%	50	100.0%	61	100.0%	88	100.0%	822	100.0%

where for firm i year t , TA_{it} is the total accruals¹⁵; A_{it-1} is the total assets (year $t-1$); ΔREV_{it} is the change in net revenues from year $t-1$ to year t ; ΔREC_{it} is the change in net accounts receivable from year $t-1$ to year t ; PPE_{it} is the property, plant and equipment; ε_{it} is the random error term.

The estimated discretionary accruals (DA) are the difference between actual total accruals and the fitted values of the accruals from model 1. A higher level of discretionary accruals, positive or negative, indicates a greater level of earnings management.

4.4. Empirical model

We test our hypotheses of whether the audit opinion decision is related to earnings management by estimating a logistic regression model where the type of audit opinion (AO) is the dependent dichotomous variable and discretionary accruals (DA) is the test variable. We divide qualified opinions into the following two categories (according to [Arnedo et al., 2008](#)): (i) qualified for the going-concern uncertainty (GC) for Hypotheses 1 and 3 testing, and (ii) qualified for reasons other than the going-concern uncertainty (NGC) for Hypotheses 2 and 4 testing. This model is specified below:

$$AO_{it} = \beta_0 + \beta_1 DA_{it} + \beta_2 BIGN_{it} + \beta_3 ROA_{it} + \beta_4 TURN_{it} + \beta_5 INVREC_{it} + \beta_6 TLE_{it} + \beta_7 ZMJ_{it} + \beta_8 ARLAG_{it} + \beta_9 AGE_{it} + \beta_{10} LAO_{it-1} + \beta_{11} LLOSS_{it-1} + \varepsilon_{it} \quad (2)$$

where for firm i at year t ,

Dependent variable:

AO_{it} = type of audit opinion received by the client:
 (i) GC_{it} = 1 if the audit opinion includes a going-concern qualification, 0 otherwise.
 (ii) NGC_{it} = 1 if the audit opinion includes qualifications except for the going-concern uncertainty, 0 otherwise.

Test variable:

DA_{it} = discretionary accruals estimated using model (1).

Control variables:

$BIGN_{it}$ = dummy variable equal to 1 if the auditor is a member of the Big 4, 0 otherwise.
 ROA_{it} = net income divided by total assets.
 $TURN_{it}$ = total sales divided by total assets.
 $INVREC_{it}$ = inventory and accounts receivables divided by total assets.
 TLE_{it} = total liabilities divided by total equity.
 ZMJ_{it} = Zmijewski's financial condition score (1984).¹⁶
 $ARLAG_{it}$ = natural logarithm of time lag (in days) between fiscal year end and the date of the audit report issue.
 AGE_{it} = natural logarithm of the number of years since the firm was listed on the ASE.
 LAO_{it-1} = dummy variable equal to 1 if the client received a qualified opinion in the previous year, 0 otherwise.
 $LLOSS_{it-1}$ = dummy variable equal to 1 if the client experienced loss in the previous year, 0 otherwise.

To form the dependent variable (AO), we examined the opinion and explanatory paragraphs of all qualified audit reports. When an opinion included multiple qualifications and at least one of them addressed a going-concern problem, then this opinion was classified as a going-concern (GC). The remaining qualified audit opinions were collectively referred to as qualified for other reasons (NGC). A more detailed classification of the qualified opinions may have been possible, based on their nature and severity ([Bradshaw et al., 2001](#)). However, the number of 'except for' and 'adverse' opinions in our sample was too small to draw any statistical inferences if treated separately.

We control for variables that have been identified in prior literature as they are likely to affect the audit opinion decision. Variables describing both client factors, those related to financial health, such as profitability, liquidity, solvency and operating risk, and auditor factors are retained to form our model ([Boone et al., 2010](#); [Bradshaw et al., 2001](#); [Butler et al., 2004](#); [Carcello & Neal, 2000](#); [Carey & Simnett, 2006](#); [Chan, Lin, & Mo, 2006](#); [Chen, Sun, & Wu, 2010](#); [Choi, Doogar, & Ganguly, 2004](#); [Craswell, Stokes, & Laughton, 2002](#); [DeFond et al., 2002](#); [DeFond, Wong, & Li, 2000](#); [Dopuch, Holthausen, & Leftwich, 1987](#); [Ettredge et al., 2011](#); [Francis, 2004](#); [Francis & Yu, 2009](#); [Gaeremynck, Van Der Meulen, & Willekens, 2008](#); [Geiger & Rama, 2006](#); [Kothari, Leone, & Wasley, 2005](#); [Louwers, 1998](#); [Mutchler, 1985](#); [Mutchler et al., 1997](#); [Reichelt & Wang, 2010](#); [Reynolds & Francis, 2000](#)).

The selected variables are expected to have similar effects on both types of audit qualifications, GC and NGC, with some exceptions. [Ireland \(2003\)](#) argues that this is the reason why it is important to distinguish between going-concern and non-going-concern related qualifications. First, TURN is predicted to have a negative sign for going-concern qualified opinions, but it can have a positive impact on the likelihood of a firm receiving a non-going-concern related audit opinion as larger firms are more complex, thereby increasing the likelihood of misstatements in the accounts ([Ireland, 2003](#)). Second, the impact of TLE cannot be predicted for non going-concern opinions. On the one hand, higher levels of debt may increase the probability of falsified financial statements, resulting in the issue of a qualified opinion ([Spathis, 2003](#)). On the other hand, high values of this variable may indicate that a low value of total assets and a high value of total liabilities is correctly stated,

¹⁵ Total accruals are calculated using the cash flow approach proposed by [Hribar and Collins \(2002\)](#) as an alternative to the balance sheet approach and defined as operating income minus operating cash flows.

¹⁶ $Zmj = -4.336 - 4.512 \times (\text{net income}/\text{total assets}) + 5.679 \times (\text{total liabilities}/\text{total assets}) + 0.004 \times (\text{current assets}/\text{current liabilities})$. Higher values represent a higher risk of bankruptcy.

thereby decreasing the likelihood of qualifications (Ireland, 2003). Finally, Arnedo et al. (2008) report contradictory results for the ZMJ variable. While a positive relationship is supported for the going-concern model, a negative relationship is found in the non-going-concern model. They attribute this to the fact that firms receiving non-going-concern qualifications are related to situations of lower financial weakness, which is consistent with their less compromising character. That is, because managers of these firms may not agree with the judgement of the auditors, they receive qualified opinions.

5. Empirical analysis

5.1. Descriptive statistics

Table 3 reports descriptive statistics and tests for difference in means for the continuous variables used in the study. We divide the sample of qualified audit opinions into two categories – qualified for the going-concern uncertainty and qualified for other reasons. We then examine and compare the values for the variables against those for firms with unqualified audit opinions. The subset of firms with going-concern opinions differs significantly from the other two subsets, with mean differences statistically significant at the 1% level for all variables except for INVREC and TLE. A more detailed investigation reveals that in the going-concern subset, total accruals and the main variable of interest, discretionary accruals, are, on average, negative (TA mean = -0.060 and DA mean = -0.047). Negative discretionary accruals imply a tendency to underestimate accruals and thus result in management of earnings in the downward direction. In the same subset of going-concern qualified opinions, ROA (mean = -0.267) and TURN (mean = 0.319) are lower, while ZMJ (mean = 2.019) is higher relative to the other two subsets, indicating that firms with going-concern qualifications are less profitable, smaller in size and in greater financial difficulty than firms without such qualifications. Finally, firms in the going-concern uncertainty category have longer delays in the issuance of the audit opinion (ARLAG mean = 1.963).

Table 4 summarises the descriptive statistics of the discrete variables BIGN, LAO and LLOSS. From the 171 firms with going-concern opinions, 154 are audited by non-Big 4, 128 received a qualified opinion in the previous year and 125 reported losses in the previous year. The differences in means between firms receiving going-concern opinions and firms with unqualified opinions are significant at the 1% level. Differences between firms with non-going-concern qualified opinions and unqualified opinions are statistically significant at the 1% level, with the exception of the LLOSS variable.¹⁷

5.2. Regression results – full sample

Hypotheses 1 and 2 test the association between earnings management as measured by discretionary accruals (DA) and the audit opinion decision: (i) the propensity to issue a going-concern qualified opinion (GC) and (ii) the propensity to issue a qualified opinion, other than going-concern (NGC), respectively. The results of the logistic regressions are presented in Table 5. The signs of the statistically significant coefficients are in the expected directions.

We are primarily concerned with the sign and significance of the coefficient β_1 . In the GC analysis, DA is not significant. This means that the null of Hypothesis 1 is accepted as the DA variable does not explain the issuance of going-concern audit opinions. The variability in the going-concern opinion decision is better explained by other financial and auditor characteristics, i.e., ROA, TURN, ZMJ, ARLAG, LAO and LLOSS, which are all statistically significant at the 1% level.

More precisely, the coefficients of ROA and TURN have, as predicted, negative signs (consistent with Chen et al., 2010; Ryu & Roh, 2007). A lower ROA indicates that decreasing profitability increases the probability of a going-concern qualification. Similarly, the negative coefficient of TURN suggests that the smaller the size of the client, in terms of sales, the greater the probability of receiving a qualified opinion for going-concern issues. ZMJ and LLOSS are statistically significant at the 1% level with positive coefficients, which is consistent with previous studies (Boone et al., 2010; Carey & Simnett, 2006; Chan et al., 2006; Chen et al., 2010; Chi & Chin, 2011; Craswell et al., 2002; DeFond et al., 2002, 2000). The positive coefficient of the ZMJ variable implies that clients with a greater susceptibility to failure have an increased chance of receiving a going-concern opinion. Because ZMJ is specified for the current period, LLOSS indicates that firms with prior year losses are also more likely to fail, increasing the probability of receiving going-concern qualified opinions. The positive and significant coefficient of LAO implies that the issuance of a qualified opinion in the previous year increases the probability of issuance of a qualified opinion in the current year, because conditions that generate uncertainty in a particular year are likely to persist in subsequent years (Boone et al., 2010; Carcello & Neal, 2000; Chen et al., 2010; Chi & Chin, 2011; Choi et al., 2004; DeFond et al., 2002; Francis & Yu, 2009). Finally, the positive coefficient of ARLAG indicates that auditors spend more time and effort in their audit task before they issue a qualified opinion for going-concern issues (Francis & Yu, 2009; Geiger & Rama, 2006; Ireland, 2003; Louwers, 1998; Ryu & Roh, 2007). The pseudo R^2 shows that the independent variables explain 66.7% of the variation in issuing going-concern qualified opinions. VIF scores are within acceptable limits (Gujarati, 2008; Hair, Black, Babin, & Anderson, 2009; Kutner, Nachtsheim, Neter, & Li, 2004), with the largest score being 1.815, which suggests that multicollinearity is not an issue in interpreting the results.

¹⁷ Pearson and Spearman correlation analysis is also performed to obtain preliminary information of the relationships among the independent continuous variables of model 2. Significant correlations exist between a few pairs of independent variables, ZMJ and TLE (Spearman 0.785), ZMJ and ROA (Pearson -0.599) and TURN and INVREC (Spearman 0.575) at the 5% significance level. In Sections 5.2 and 5.3, we estimate the variance inflation factor (VIF) scores of the independent variables to establish that the logistic regression model does not present multicollinearity issues.

Table 3
Descriptive statistics and univariate tests of continuous variables by audit opinion type.

Variable	(1) Unqualified opinions (N=962)		(2) Going-concern opinions (N=171)		(3) Other qualified opinions (N=334)		Differences in mean (1)–(2)	Differences in mean (1)–(3)	Differences in mean (2)–(3)
	Mean	SD	Mean	SD	Mean	SD	t-Statistic	t-Statistic	t-Statistic
TA	0.004	0.098	−0.060	0.156	0.012	0.105	−5.256 ^{***}	1.255 [*]	−5.427 ^{***}
DA	0.010	0.082	−0.047	0.147	−0.002	0.093	−4.969 ^{***}	−2.440 ^{**}	−2.761 ^{***}
ROA	0.009	0.086	−0.267	0.599	0.008	0.069	−6.025 ^{***}	−0.124 [*]	−5.984 ^{***}
TURN	0.648	0.782	0.319	0.380	0.573	0.566	−8.590 ^{***}	−1.880 [*]	−6.050 ^{***}
INVREC	0.360	0.206	0.359	0.228	0.376	0.205	−0.084	1.236	−0.859
TLE	1.555	2.918	2.375	14.258	1.565	1.897	0.750	0.260	0.652
ZMJ	−1.599	1.315	2.019	6.248	−1.518	1.343	7.563 ^{***}	1.026	7.309 ^{***}
ARLAG	1.910	0.075	1.963	0.101	1.909	0.082	8.091 ^{***}	−0.150 [*]	7.381 ^{***}
AGE	1.065	0.306	1.176	0.312	0.994	0.323	4.351 ^{***}	−3.601 ^{***}	6.057 ^{***}

TA: total accruals divided by total assets; DA: discretionary accruals estimated using the modified-Jones model (Dechow et al., 1995); ROA: net income divided by total assets; TURN: total sales divided by total assets; INVREC: inventory and accounts receivables divided by total assets; TLE: total liabilities divided by total equity; ZMJ: Zmijewski's financial condition score (1984); ARLAG: natural logarithm of time lag (in days) between fiscal year end and the date of the audit report issue; AGE: natural logarithm of the number of years since the firm was first listed on the ASE.

^{*} Significant at the 0.10 level.

^{**} Significant at the 0.05 level.

^{***} Significant at the 0.01 level.

Table 4
Chi-square tests of the discrete variables BIGN, LAO and LLOSS.

Variable	Unqualified (N=962)	GC (N= 171)	Chi-square	Unqualified (N=962)	NGC (N= 334)	Chi-square	GC (N= 171)	NGC (N= 334)	Chi-square
BIGN									
(No)	741	154	15.289 ^{***}	741	283	8.972 ^{***}	154	283	2.990 [*]
(Yes)	221	17		221	51		17	51	
LAO									
(No)	752	43	195.519 ^{***}	752	50	419.602 ^{***}	43	50	8.058 ^{***}
(Yes)	210	128		210	284		128	284	
LLOSS									
(No)	728	46	159.574 ^{***}	728	263	1.548	46	263	128.100 ^{***}
(Yes)	234	125		234	71		125	71	

BIGN: dummy variable equal to 1 if the auditor is Big 4, 0 otherwise; LAO: dummy variable equal to 1 for a qualified opinion in the previous year, 0 otherwise; LLOSS: dummy variable equal to 1 for a loss in the previous year, 0 otherwise; GC: dummy variable equal to 1 if the audit opinion includes a going-concern qualification, 0 otherwise; NGC: dummy variable equal to 1 if the audit opinion includes a qualification except for going-concern, 0 otherwise.

^{*} Significant at the 0.10 level.

^{***} Significant at the 0.01 level.

Table 5

Logistic regression results of discretionary accruals and other control variables on qualified audit opinions – full sample.

	Expected Sign	GC	Wald test	VIF
$GC_{it} = \beta_0 + \beta_1 DA_{it} + \beta_2 BIGN_{it} + \beta_3 ROA_{it} + \beta_4 TURN_{it} + \beta_5 INVREC_{it} + \beta_6 TLE_{it} + \beta_7 ZMJ_{it} + \beta_8 ARLAG_{it} + \beta_9 AGE_{it} + \beta_{10} LAO_{it-1} + \beta_{11} LLOSS_{it-1} + \varepsilon_{it}$				
Constant	?	-19.585***	13.741	
DA	?	-0.617	0.147	1.112
BIGN	-	-0.101	0.073	1.054
ROA	-	-6.773***	14.655	1.815
TURN	-	-2.820***	19.410	1.225
INVREC	+	1.385*	3.071	1.221
TLE	+	0.016	1.361	1.024
ZMJ	+	0.501***	22.979	1.780
ARLAG	+	8.446***	9.812	1.169
AGE	-	0.524	1.093	1.142
LAO	+	2.512***	77.317	1.062
LLOSS	+	0.876***	9.193	1.191
Wald		430.460***		
Pseudo R ²		66.7%		
N		1133		
$NGC_{it} = \beta_0 + \beta_1 DA_{it} + \beta_2 BIGN_{it} + \beta_3 ROA_{it} + \beta_4 TURN_{it} + \beta_5 INVREC_{it} + \beta_6 TLE_{it} + \beta_7 ZMJ_{it} + \beta_8 ARLAG_{it} + \beta_9 AGE_{it} + \beta_{10} LAO_{it-1} + \beta_{11} LLOSS_{it-1} + \varepsilon_{it}$				
Constant	?	-3.997*	3.689	
DA	?	-1.685*	3.125	1.153
BIGN	-	-0.382*	3.353	1.070
ROA	-	-0.153	0.011	1.759
TURN	+	-0.109	0.553	1.330
INVREC	+	0.059	0.017	1.381
TLE	?	0.005	0.015	1.396
ZMJ	-	0.041	0.246	1.995
ARLAG	+	0.831	0.614	1.132
AGE	-	-0.158	0.343	1.166
LAO	+	3.040***	288.019	1.043
LLOSS	+	0.054	0.063	1.232
Wald		281.723***		
Pseudo R ²		43.0%		
N		1296		

GC: dummy variable equal to 1 if the audit opinion includes a going-concern qualification, 0 otherwise; NGC: dummy variable equal to 1 if the audit opinion includes a qualification except for going-concern, 0 otherwise; DA: discretionary accruals estimated using the modified-Jones model (Dechow et al., 1995); BIGN: dummy variable equal to 1 if the auditor is Big 4, 0 otherwise; ROA: net income divided by total assets; TURN: total sales divided by total assets; INVREC: inventory and accounts receivables divided by total assets; TLE: total liabilities divided by total equity; ZMJ: Zmijewski's financial condition score (1984); ARLAG: natural logarithm of time lag (in days) between fiscal year end and the date of the audit report issue; AGE: natural logarithm of the number of years since the firm was first listed on the ASE; LAO: dummy variable equal to 1 for a qualified opinion in the previous year, 0 otherwise; LLOSS: dummy variable equal to 1 for a loss in the previous year, 0 otherwise. VIF: variance inflation factor.

* Significant at the 0.10 level.

*** Significant at the 0.01 level.

In the NGC analysis, the major determinant of the qualification decision is LAO, i.e., the type of audit opinion issued in the previous year, which is positive and statistically significant at the 1% level. The DA coefficient is negative and significant at the 10% level, thus the null of Hypothesis 2 is marginally rejected. The negative sign implies that when firms with no going-concern problems use income-increasing discretionary accruals, they are more likely to receive unqualified audit opinions. Bradshaw et al. (2001) argue that auditors interpret the higher earnings associated with higher accruals as a positive sign and are less likely to issue qualified opinions in such cases. The explanatory power of the model is satisfactory and explains much of the dependent variable, with a pseudo R² of 43%. Again, the VIF scores are within acceptable limits.

5.3. Regression results – distressed sample

The results for the subsample of 845 firm-year observations that are classified as financially distressed are shown in Table 6 and are similar to those reported in Table 5. In the GC analysis, as the estimate of the coefficient β_1 is not significant, the null of Hypothesis 3 is accepted. Audit opinions are unrelated to the level of discretionary accruals. The going-concern audit opinion decision for financially distressed firms is explained by ROA, TURN, ZMJ, ARLAG and LAO, which are statistically significant at the 1% level. Auditors are more likely to issue going-concern opinions for small distressed firms and for firms that received a qualified opinion in the previous year. Additionally, distressed clients with higher values for the ZMJ score have a higher probability of receiving a going-concern opinion. The ARLAG has a greater coefficient ($\beta_8 = 10.081$) than in the full sample, which suggests that auditors of distressed firms spend more time conducting their audits when a GC audit opinion is likely. Several reasons could explain this result. First, auditors may engage in lengthy negotiations with management over the type of audit report, especially if a disagreement arises (Ireland, 2003; Ryu & Roh, 2007). Second, auditors may have discovered problems that require additional audit work. Finally, and especially with the going-concern opinion, auditors

Table 6

Logistic regression results of discretionary accruals and other control variables on qualified audit opinions – distressed sample.

	Expected Sign	GC	Wald test	VIF
$GC_{it} = \beta_0 + \beta_1 DA_{it} + \beta_2 BIGN_{it} + \beta_3 ROA_{it} + \beta_4 TURN_{it} + \beta_5 INVREC_{it} + \beta_6 TLE_{it} + \beta_7 ZMJ_{it} + \beta_8 ARLAG_{it} + \beta_9 AGE_{it} + \beta_{10} LAO_{it-1} + \beta_{11} LLOSS_{it-1} + \varepsilon_{it}$				
Constant	?	-22.365***	9.624	
DA	?	-1.732	0.993	1.166
BIGN	-	-0.058	0.021	1.052
ROA	-	-5.286***	8.330	1.839
TURN	-	-2.919***	16.364	1.432
INVREC	+	0.865	0.960	1.428
TLE	+	0.015	1.133	1.025
ZMJ	+	0.566***	24.028	1.772
ARLAG	+	10.081***	7.503	1.166
AGE	-	0.828	2.160	1.137
LAO	+	2.264***	54.848	1.076
LLOSS	+	0.557*	3.135	1.164
Wald		170.783***		
Pseudo R ²		63.2%		
N		671		
$NGC_{it} = \beta_0 + \beta_1 DA_{it} + \beta_2 BIGN_{it} + \beta_3 ROA_{it} + \beta_4 TURN_{it} + \beta_5 INVREC_{it} + \beta_6 TLE_{it} + \beta_7 ZMJ_{it} + \beta_8 ARLAG_{it} + \beta_9 AGE_{it} + \beta_{10} LAO_{it-1} + \beta_{11} LLOSS_{it-1} + \varepsilon_{it}$				
Constant	?	-0.012	0.000	
DA	?	-1.733	1.770	1.295
BIGN	-	-0.375	1.805	1.059
ROA	-	0.946	0.251	1.730
TURN	+	-0.332	1.330	1.520
INVREC	+	-0.215	0.114	1.685
TLE	?	-0.006	0.020	1.313
ZMJ	-	0.140	1.816	1.951
ARLAG	+	-1.029	0.402	1.108
AGE	-	0.008	0.000	1.146
LAO	+	2.824***	147.146	1.057
LLOSS	+	-0.058	0.054	1.206
Wald		153.481***		
Pseudo R ²		39.6%		
N		687		

GC: dummy variable equal to 1 if the audit opinion includes a going-concern qualification, 0 otherwise; NGC: dummy variable equal to 1 if the audit opinion includes a qualification except for going-concern, 0 otherwise; DA: discretionary accruals estimated using the modified-Jones model (Dechow et al., 1995); BIGN: dummy variable equal to 1 if the auditor is Big 4, 0 otherwise; ROA: net income divided by total assets; TURN: total sales divided by total assets; INVREC: inventory and accounts receivables divided by total assets; TLE: total liabilities divided by total equity; ZMJ: Zmijewski's financial condition score (1984); ARLAG: natural logarithm of time lag (in days) between fiscal year end and the date of the audit report issue; AGE: natural logarithm of the number of years since the firm was first listed on the ASE; LAO: dummy variable equal to 1 for a qualified opinion in the previous year, 0 otherwise; LLOSS: dummy variable equal to 1 for a loss in the previous year, 0 otherwise. VIF: variance inflation factor.

* Significant at the 0.10 level.

*** Significant at the 0.01 level.

may delay finalising their report in the hope that the problems will be resolved and thus a qualified opinion will be avoided (Ireland, 2003; Ryu & Roh, 2007). The pseudo R² of 63.2% is slightly lower than in the previous analysis.

In the NGC analysis, the null of Hypothesis 4 is accepted. Auditors do not consider client financial characteristics in the reporting decision and LAO is, as in the full sample, the only statistically significant variable, at 1%. The issuance of a qualified opinion in the previous year increases the auditor's propensity to issue a qualified opinion in the current year unless the financial condition of the distressed firm improves (Carcello & Neal, 2000; Chen et al., 2010; Chi & Chin, 2011; Craswell et al., 2002; Francis & Yu, 2009; Mutchler, 1985; Reynolds & Francis, 2000; Ryu & Roh, 2007). The explanatory power of the model is satisfactory and explains much of the dependent variable, with a pseudo R² of 39.6%. The VIF scores are within acceptable limits.¹⁸

¹⁸ To enhance the validity of the results in Sections 5.2 and 5.3, we performed a series of sensitivity tests. First, we examined the assumption for the formation of the GC variable, where qualified opinions with a going-concern qualification were categorised as GC, irrespective of the presence of other qualifications. We identified 91 audit opinions in our sample, which were qualified purely for going-concern uncertainty issues, and re-estimated model 2. The results were broadly consistent with the empirical analysis of the full sample. Second, we estimated model 2 using alternative discretionary accruals models: (i) the Jones model (1991), (ii) the modified-Jones model with prior-year ROA (Kothari et al., 2005) and (iii) the modified-Jones model with CFO (Larcker & Richardson, 2004). The results of hypotheses testing were similar to those reported in Sections 5.2 and 5.3, with the DA variable being again marginally significant, suggesting that our main findings are not sensitive to the different ways of estimating discretionary accruals. Finally, we estimated model 2 by omitting the ZMJ variable, because it was highly correlated with some variables of our model. The results again remained unaltered.

6. Conclusions

The primary objective of this study is to investigate auditor reporting, which is measured by the auditor's propensity to issue a qualified audit opinion, and its association with earnings management, which is measured by discretionary accruals. In the examination of whether discretionary accruals increase a firm's likelihood of receiving a qualified audit opinion, we utilise a sample of firms listed on the ASE for the post-IFRS period from 2005 to 2011, a period which includes the global financial crisis and the Greek sovereign debt problem. To provide an in-depth analysis of this relationship, we first analyse all qualified opinions of our sample. As with Butler et al. (2004), the findings reveal notably few instances of GAAP departures or scope limitations and provide little support for the presence of extreme earnings management. We then proceed to the empirical investigation of the hypotheses. On this basis, we divide the qualified opinions into the following two categories: qualified because of the going-concern uncertainty and qualified for other reasons. As an additional analysis, we test our hypotheses in a subsample of distressed firms due to the potentially magnified incentives that such firms may have to manage their earnings.

The results provide evidence that the going-concern qualification decision is not related to the level of discretionary accruals, both in the full and in the distressed samples (Butler et al., 2004; Herbohn & Ragnathan, 2008). Auditors do not alert investors to the potential future problems experienced by firms with high discretionary accruals because they do not incorporate information in accruals into their opinions (Bradshaw et al., 2001). The variability in the going-concern decision is better explained by financial characteristics. Poor financial performance in the current fiscal year, prior year losses, audit opinion type received in the previous year, small firm size and greater audit effort result in a higher probability of receiving a going-concern opinion. It appears that the economic downturn has affected the financial health of firms by impacting the type of audit opinion received. This is supported by Table 2, where it is illustrated that the number of going-concern qualifications has increased significantly in 2010 and 2011. In examining the opinions that are qualified for other reasons, we provide support for the argument that auditors do not seem to consider client financial characteristics in their reporting decision. The type of audit opinion issued in the previous year is the only useful decision tool in predicting the current year's opinion, both in the full and the distressed samples.

The results of the present study should be treated with caution. Our inferences are driven by our proxies for auditor reporting and earnings management. These proxies are not perfect because they are formed using publicly available information, rather than private information known to the two key parties in the auditor–client relationship – auditors and managers. The auditing theory creates an abstracted reality, or 'black box', which does not sufficiently describe what is actually occurring (Beattie, Fearnley, & Brandt, 2000). Finally, the Greek post-IFRS period of economic recession provides a fruitful environment for further investigation. Future empirical research could explore the level of audit and non-audit fees and how these fees are affected by the debt crisis. There are increasing concerns that audit fee reductions during financial crises may lead to lower audit effort and lower audit quality (Krishnan & Zhang, 2013).

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