Audit Opinion, Audit Firm and Financial Information in a IFRS Context

Charalambos Spathis and Maria Tsipouridou

1. Introduction

Bushman and Smith (2003) argue that audited financial statements form the foundation of the firm-specific information set available to the public. However, financial statement users influenced by corporate scandals and failing of otherwise prestigious firms, such as Parmalat, Royal Ahold, WorldCom, Chiquita Brands International and AIG[1], have reasons to question the credibility of these statements. They believe that managers often have incentives to misreport performance and financial condition (Benston, 2003), creating an information gap between the company[2] and outsiders.

Prior literature has examined issues, such as earnings management, financial restatements, and fraudulent reporting that restrain the realization of quality financial reports and have used their presence as indication of a breakdown in the financial reporting process (Cohen et al., 2004). It is evident that external auditors play a key role as a monitoring mechanism, in assuring the integrity of accounting figures and in minimizing the agency cost resulting from managers' opportunistic incentives. This implies that audited financial statements, the result of which is the audit opinion[3] are ultimately the outcome of negotiations between management and the incumbent auditor (Antle and Nalebuff, 1991). However, the role of auditors is limited; they do not have latitude to comment or elaborate on the overall quality of earnings, as long as the financial statements conform to GAAP (Butler et al., 2004).

Following Spathis (2003) and Caramanis and Spathis (2006), the objective of this paper is to develop a model, which could predict and explain qualifications in audit opinions of Greek listed companies. Our sample comprises of companies, listed on the Athens Stock Exchange (ASE), for the period 2005-2008, with audited financial statements, prepared according to IFRS. We consider auditee financial statement characteristics (financial distress, liquidity, profitability) and other indicators, such as the type of audit firm (Big 4 vs. Non-Big 4[4]), as independent variables. In sum, eight variables are selected as potential predictors of qualified audit opinions (financial

[1] Parmalat (Italy, 2003), audited by Grant Thornton, had falsified accounting documents, Royal Ahold (Netherlands, 2003), audited by Deloitte & Touche had inflating promotional allowances, WorldCom (US, 2002) audited by Arthur Andersen, had overstated cash flows, Chiquita Brands International (US, 2004) had illegal payments, and AIG (US, 2004) audited by PricewaterhouseCoopers, had accounting for structured financial deals.
[2] The terms 'company' and 'firm' are used synonymously.
[3] The terms 'audit opinion' and 'audit report' are used synonymously.
[4] In Greece, Big-N Audit Firms are the following four: PricewaterhouseCoopers, Deloitte Touche Tohmatsu, Ernst & Young, and KPMG (see section 3, The Greek Audit Market)

distress, type of audit firm, current assets to current liabilities, receivables to net sales, net profit to net sales, inventories and receivables to total assets, current year losses, and working capital to total assets). Then, we build two models, which investigate the relationship of the independent variables with: (i) the type of audit opinion received and (ii) the number of qualifications found in audit opinions. For 900 observations, we run univariate tests (t-test, $\chi 2$ test), and multivariate tests (logistic and OLS regression analysis).

The results provide evidence that the occurrence of a qualified audit opinion is negatively associated with the type of audit firm. Companies audited by Big-4 auditors have lower probability of receiving a qualified opinion. Moreover, financial distress and current year losses are statistically significant and positively related to the probability of receiving a qualified opinion. Liquidity, measured by two ratios, is also significant. Companies with high current ratios and low working capital to total assets ratios have an increased probability of being classified with qualified companies. Similar results derive from the analysis of our second model, regarding the number of qualifications found in audit opinions.

The study makes an important contribution. The suggested models could provide information on the likelihood of a company receiving a qualified audit opinion, based on its financial and non-financial data. Dopouch et al. (1987) argue that researchers can use empirical models to assess the extent to which audit qualifications could be expected based on publicly available data. The outcome of such models gives an estimation of the likelihood of a company receiving a qualified opinion (Caramanis and Spathis, 2006). Chen and Church (1992) note that auditors can use the results of these models to plan specific auditing procedures, that can be applied to achieve an acceptable level of audit risk. Also, they can be used as decision aid for auditors when predicting what opinion other auditors would issue in similar circumstances, when evaluating potential clients, in determining the scope of an audit for existing clients, in peer reviews, to control quality within firms, and as a defense in law suits (Laitinen and Laitinen, 1998). Thus, the suggested models could be of assistance to internal and external auditors, state authorities, individual and institutional investors, financial analysts, and other decision makers.

The remainder of the paper is organized as follows: The next section presents the literature review and research questions. In section 3 the Greek context, audit market, regulatory framework and auditors opinion are described, to acquaint the reader with the Greek setting. Section 4 outlines the sample selection, data and methodology, while section 5 describes the empirical results. Finally, section 6 presents the main conclusions.

2. Literature Review

A number of factors influence auditors' judgment in evaluating the interpretation of GAAP and in issuing an opinion. The presence of audit committees (e.g. Dechow et al., 1996), the independence and competence of the auditor (e.g. DeAngelo, 1981; Watts and Zimmerman,

1981), the amount of work performed by the auditor (e.g. Moizer, 1997), fee and time pressure (e.g. Coller et al., 2002) are some of the characteristics examined. Additionally, agency cost theory portrays the role of the auditor as a monitoring mechanism to reduce agency costs. Agency costs include managers' incentives to manage earnings (Spathis, 2003).

Various empirical studies focus on the relationship between discretionary accruals, as a proxy for earnings management, and type of audit opinion. They show that modified reports are a positive response to the level of discretionary accruals. Bartov et al. (2001) found that the cross-sectional Jones (1991) and the cross-sectional modified Jones models (Dechow et al., 1995) perform better than their time-series counterparts in detecting earnings management among firms with extreme earnings management (i.e. those with qualified audit reports). However, Butler et al. (2004) supported the view that it is not obvious that earnings management will typically lead to a modified audit opinion. They argued that the auditor and the company are likely to resolve earnings-management-related issues before the audit report is issued, because the costs of not doing so are high. They showed that the modified opinions/abnormal accruals relation stems from companies with going concern opinions, because they have negative accruals.

In a more recent study, Koumanakos et al (2008) focused their research on 91 cases of "suspect" for earnings manipulation companies, quoted on the Athens Stock Exchange (ASE), which were asked in 2003 to quantify the effects of the qualifications made by their external auditors to the published financial statements of the year 2002 and post them in the ASE website. By employing the cross-sectional Jones (1991), modified Jones (Dechow et al, 1995) and Kothari's et al (2005) discretionary accruals models, they document that several major Greek, financially distressed, companies with qualified audit opinions do appear to manipulate their reported earnings by exploiting the weaknesses of the Greek GAAP.

In the audit literature, several models have attempted to explain qualifications in audit opinions. The general consensus of these models is that financial and non-financial information affect the audit opinion decision. Laitinen and Laitinen (1998) used logistic regression analysis based on 17 financial and non-financial variables to explain qualifications in large companies. They showed that the probability of receiving a qualified audit opinion is higher with low growth rate, low equity/total assets ratio, and small number of employees. Chen and Church (1992) used default status, as an additional indicator, apart from financial ratios. They found that default status is also a significant variable, that can explain the auditor's choice to issue a qualified opinion.

Spathis (2003) tested if combinations of financial and non-financial data can be used to explain qualifications in audit reports of 100 Greek listed companies from the manufacturing sector. The sample period of his analysis was 1997-1999. Using logistic and OLS regression models, he found that audit qualification decisions are positively associated with financial information, such as financial distress and current year losses, and with non-financial information, such as firm litigation. In a similar study, Caramanis and Spathis (2006), used univariate and multivariate

statistical techniques to identify the factors associated with qualified audit opinions, for a sample of 185 Greek companies listed on the ASE, for the financial year 2001. Six variables (audit fees, one dummy variable, and four financial ratios) were selected for examination as potential predictors of qualified audition reports. They found that audit fees and the type of audit firm do not affect auditor's propensity to qualify their opinions. Instead, qualified opinions were associated with financial metrics, such as operating margin to total assets and the current ratio.

Furthermore, Spathis et al. (2003) modeled auditor's qualification using a multicriteria decision aid classification method (UTADIS) and compared it with other multivariate statistical techniques such as discriminant and logit analysis. The variables selected by the above techniques as possible useful indicators were: the receivables/sales ratio, the net profit/total assets ratio, the sales/total assets ratio, and the working capital/total assets ratio. Their results suggest that there is potential in indentifying pre-engagement factors associated with qualified audit reports through analysis of publicly available financial statements.

Kirkos et al. (2007) used three Data Mining classification techniques, i.e. Decision Trees, Neural Networks and Bayesian Networks, to develop models capable of identifying qualified auditors' reports. According to their results, all three models showed that financial distress and profitability are strongly related to qualified opinions. Finally, Gaganis et al. (2007) investigated the efficiency of k-nearest neighbours (k-NN) in developing models for estimating auditors' opinions, as opposed to models developed with discriminant and logit analyses. Their sample consisted of 5,276 financial statements, obtained from private and public UK companies. Two industry-specific models and a general model were developed, using data from 1998 to 2001. The models were then tested using data from 2002 and 2003. The comparison of the methods revealed that the k-NN models can be more efficient, in terms of average classification accuracy, than the discriminant and logit models. Finally, the results are mixed concerning the development of industry-specific models, as opposed to general models.

Based on the above discussion, we formulate two research questions:

Q1: Is there a relationship between financial and non financial characteristics of the audited company and the type of audit opinion it receives?

Q2: Is there a relationship between financial and non financial data of the audited company and the number of audit qualifications included in the audit report it receives?

3. Background

3.1 The Greek Context

Greece is perceived as a code-law country. Consistent with Gray (1988) and Hofstede (1980; 1991), Greece represents a high conservatism and high secrecy society. Caramanis (2005) argues

that Greek culture, politics and economics remain affected by a duality of Eastern and Western influences. Before the implementation of IFRS on 2005 to all publicly traded companies' consolidated and individual accounts, the quality of Greek accounting standards and disclosure practices had been criticized in the European financial press and investors' community. The main complaints were that Greek standards allow firms to use too much discretion, Greek reporting is too heavily influenced by tax avoidance strategies and Greek standards lack detailed disclosures designed to satisfy the information needs of users.

What is more, empirical studies of international comparison among countries have found that Greece exhibits higher levels of earnings management than in other countries. Leuz et al. (2003) collected financial accounting data from 1990 to 1999 for over 8,000 firms from 31 countries. Greece, together with Austria, was found to have an aggregate earnings management score of 28.3, occupying the first position among the countries of the sample. In a similar vein, Bhattacharya et al. (2003) analyzed the financial statements of 58,653 firm-years from 34 countries for the period 1985-1998 and Greece, in regard to overall earnings opacity, occupies again the highest rank, together with Japan, Chile, India, Indonesia and South Korea. In a study of creative accounting in Greece, Baralexis (2004) found that despite the existence of detailed accounting regulation, creative accounting and earnings management is practiced frequently in Greece, not only by exploiting the weaknesses of the law, and of the GAAP, but also by violating them.

3.2 The Greek Audit Market

Corporate Auditing was introduced in Greece in 1955 with the establishment of the state-controlled Body of CPA/Sworn-in-Accountants, SOL. By that time, corporate auditing of annual financial statements was unofficial, due to the inexistence of organized auditing profession. Auditing of companies was a formal 'ironic' act towards the Government, shareholders and other interested parties, because the appointed auditors, by the General Assembly, limited their job to signing the report, which was already composed by the Board of Directors (Body of Sworn-in-Auditors and Accountants, SOEL, 2009).

SOL was formed as a quasi state organization with a legally sanctioned monopoly in the statutory audits market, while its main objective was the protection of the "public interest" (Caramanis, 1998). As Leventis and Caramanis (2005) state, the most important characteristic of SOL was that auditor appointment and fee determination were controlled by the Supervisory Council of SOL, a legally independent body. The most important rivalry to SOL was the Society of Certified Accountants-Auditors (SELE), which was established in 1979, by partners in international accounting firms operating in Greece (Caramanis and Lennox, 2008). However, members of SELE were prohibited by law from conducting statutory audits, and their services were limited to tax and management consultancy.

In 1992, after the implementation of the Presidential Decree 226/1992 for the establishment of auditing companies, the Greek auditing profession was liberalized, in a period when state policy favored deregulation, privatization and less state involvement in the management of the economy (Caramanis, 1997). Opponents of the reform argued that by liberalizing the profession, auditors would serve the interests of their clients and not of the public. On the other hand, "liberalization" supporters claimed that competition in the audit market would advance the quality and reliability of audits (Caramanis, 1998). After a political struggle between the two organizations, SOL and SELE, SOL was abolished by the Government and was reformed to a big private audit firm, SOL S.A. A new accounting body, SOEL, was created to self-regulate the audit profession (Caramanis and Lennox, 2008). SOEL is now member of the International Federation of Accountants (IFAC).

At the same time, several small Greek and second-tier international audit firms began to offer their statutory audit services. On 2005, after auditing firms' mergers and the collapse of Arthur Andersen, there remain four multinational (PricewaterhouseCoopers, Deloitte Touche Tohmatsu, Ernst & Young, and KPMG, named as Big Four) and approximately 15 Greek auditing companies in the Register of Members of SOEL, and consequently, obliged to report to SOEL (SOL SA, 2009).

3.3 Regulatory Framework

Annual audits are mandatory in Greece for incorporated companies fulfilling the following size criteria for two consecutive years: (1) €2.5 million in total assets, (2) €5 million in sales, and (3) 50 employees. The Supervisory Council of SOEL has also set minimum audit hours, because data submitted by audit firms had shown a steady and significant drop in audit time since 1992, while at the same time there has been fierce competition in the market for audit services (Leventis and Caramanis, 2005). The Greek Auditing Standards (GAS) published in the Government Gazette (issue 1589/B/22.10.2004) were formed according to the International Auditing Standards of the IFAC. Also, the Greek Legislation, with Law 3639/2008, is in full compliance with the instructions of the Directive 2006/43/EC on statutory audits of annual accounts and consolidated accounts. More recently, responding to concerns over audit quality and the credibility of financial reporting, the Greek Ministry of Economy with regulation N. 3148/2003 established the Committee of Accounting Standardization and Control (ELTE), for external audit improvement with a mandate to propose a remedial action plan for improving auditor independence and services (Koumanakos et al., 2008).

3.4 Auditors Opinion

With the implementation of IFRS, the content of the auditor's opinion has been modified. Auditors are obliged to express clearly their opinion on the financial statements of the audited company in the opinion paragraph of the report, which is classified as follows:

1. Unqualified opinion
2. Qualified opinion,
   - with matters that do not affect the auditor's opinion
   - with matters that do affect the auditor's opinion
3. Adverse opinion
4. Disclaimer of opinion

The qualified opinion, with matters that do not affect the auditor's opinion, often includes in the explanatory paragraph, observations for the uncertain result of lawsuits in progress, going-concern uncertainty and uncertain outcome of future State Tax controls. The qualified opinion, with matters that do affect the auditor's opinion, may include observations for the limitation of the breadth of inspection, significant error (error in forecast, time expired debts, no forecast planning), and significant omissions.

It is should be mentioned that the 'particularity' of the Greek auditor's opinion, in comparison to the US and UK, is that there is not a clear distinction between unqualified and qualified reports, apart from the adverse opinion, where the auditor's verdict is clearly stated. For instance, a qualified opinion can include, in the explanatory paragraph, remarks about matters that both affect and do not affect the auditor's opinion according to the above categorization (i.e. uncertain outcome of future State Tax controls and significant omissions). However, it could end with a phrase similar to "With the exception of the consequences of the above issues, in our opinion, the aforementioned financial statements give a true and fair view of the financial position of the Company as of 31 December 20XX…". Thus, it is in the subjective judgment of the reader to decide whether the remarks are materially important, and whether they should be taken into consideration or not.

4. Methodology

4.1 Sample Selection and Data

Initial population from which the sample is chosen comprises companies listed on the ASE for the years 2005 through 2008. Following common practice in previous literature, Banking, Insurance, Financial Services and Real Estate sectors are excluded from the sample.

Additionally, sectors with less than ten companies are omitted from the sample. Therefore, from a total of 18 sectors, only 9 are included: Metals, Construction & Materials of Construction, Food & Beverages, Travelling & Leisure, Information Technology, Communication, Trade, Personal & Domestic Products, and Industrial Products & Services.

Another 5 IPO companies were not included, because in the first year a company goes public tends to manipulate earnings, and this may affect the likelihood of receiving a qualified audit opinion (Koumanakos et al., 2008). Firms engaged in mergers, acquisitions or seasoned equity offerings were not eliminated from the sample, because Greek empirical studies indicate no evidence of earnings management adoption around these events (Koumanakos et al., 2005). Finally, 18 opinions were excluded from the empirical analysis, because they were audited by both a Big4 and a non-Big 4 auditor[5]. Table 1 summarizes the construction of the sample. Firms with incomplete four-year data were not disqualified from the analysis. Thus, there is a different number of observations in each of the four years.

Table 1
Sample selection (2005-2008)

	2005	*2006*	*2007*	*2008*	*Total*
ASE listed companies in the selected 9 sectors	277	255	241	225	998
Firms with complete auditor data and financial statement data for the empirical analysis	232	230	221	217	900

Information about audit opinions of listed companies was obtained from the ASE online database[6], as of the last week of October 2009. Annual financial statement data of parent companies, for all listed firms were provided by Hellastat S.A., and are prepared according to IFRS.

4.2 Methods

The method followed in this study is based closely on Spathis (2003) and Caramanis and Spathis (2006). We used four statistical analyses to test whether there is an association between our variables and the auditor opinion decision. First, we used t-tests and chi-squared tests to examine the relation between each variable and the incidence of qualifications, by comparing the means of the qualified and unqualified sub-samples. Second, we used logistic regression analysis to test the ability of various combinations of the variables to correctly predict the audit opinion. Third, we used OLS regression analysis to find if there is relationship between the independent variables and the number of qualifications in audit reports.

[5] For listed companies satisfying certain criteria, the audit is conducted by two auditors. When this is the case, the auditors may belong to different audit firms.
[6] www.ase.gr

For testing our first research question, we estimate a logistic regression model, where the probability of a qualified opinion is the dependent dichotomous variable, conditioned on the selected independent variables. The variables used were derived through a review of prior literature including: Houghton and Jubb (1999), Bartov et al. (2001), Palmrose (1988), Krishnan and Krishnan (1996), Laitinen and Laitinen (1998), DeFond et al. (2002), Lennox, (2005), Spathis (2003), Spathis et al. (2003), Caramanis and Spathis (2007). The estimated models are as follows. The difference of model 1b is that the variable FDISTR is omitted.

$$\text{Prob}(QUAL_{it}) = b_0 + b_1 FDISTR_{it} + b_2 TYPEAUDITFIRM_{it} + b_3 CA/CL_{it} + b_4 REC/SAL_{it} + b_5 NP/SAL_{it} + b_6 INVREC/TA_{it} + b_7 LOSS_{it} + b_8 WC/TA_{it} + e_{it} \quad (1a)$$

$$\text{Prob}(QUAL_{it}) = b_0 + b_1 TYPEAUDITFIRM_{it} + b_2 CA/CL_{it} + b_3 REC/SAL_{it} + b_4 NP/SAL_{it} + b_5 INVREC/TA_{it} + b_6 LOSS_{it} + b_7 WC/TA_{it} + e_{it} \quad (1b)$$

where for company i at year t,

Prob(QUAL)	= dummy variable equal to 1 for an qualified opinion, i.e. qualified opinion, with matters that do not affect the auditor's opinion, qualified opinion, with matters that do affect the auditor's opinion, adverse opinion, and 0 otherwise.
$FDISTR_{it}$	= financial distress, measured by Zmijewski's financial condition score (1984);
$TYPEAUDITFIRM_{it}$	= dummy variable equal to 1 if the audit firm belongs to the Big-4, 0 otherwise;
CA/CL_{it}	= current assets, divided by current liabilities;
REC/SAL_{it}	= receivables, divided by net sales;
NP/SAL_{it}	= net profit before taxes, divided by net sales;
$INVREC/TA_{it}$	= inventories and receivables, divided by total assets;
$LOSS_{it}$	= dummy variable equal to 1 if the firm has losses in the current year, 0 otherwise;
WC/TA_{it}	= working capital, divided by total assets
$b_0, b_1 \ldots b_i$	= parameters to be estimated
e_{it}	= a disturbance term

For testing the second research question, we estimate an OLS regression model, to explain the magnitude of the number of qualifications as a function of the independent variables. The models 2a and 2b suggest that the number of qualifications (TOTALQUALIF) is associated with the same independent variables from models 1a and 1b.

$$TOTALQUALIF_{it} = b_0 + b_1FDISTR_{it} + b_2TYPEAUDITFIRM_{it} + b_3CA/CL_{it} + b_4REC/SAL_{it} + b_5NP/SAL_{it} + b_6INVREC/TA_{it} + b_7LOSS_{it} + b_8WC/TA_{it} + e_{it} \quad (2a)$$

$$TOTALQUALIF_{it} = b_0 + b_1TYPEAUDITFIRM_{it} + b_2CA/CL_{it} + b_3REC/SAL_{it} + b_4NP/SAL_{it} + b_5INVREC/TA_{it} + b_6LOSS_{it} + b_7WC/TA_{it} + e_{it} \quad (2b)$$

where for company i at year t,

TOTALQUALIFit = total number of qualifications in a company's audit opinion

5. Results

5.1 Univariate Tests

Table 2 shows the descriptive statistics, t-tests and chi-squared tests of the independent variables used in the empirical analysis. The table is divided in two panels. In Panel A the mean values of the continuous variables, their standard deviations and t-tests are given, both for companies with qualified and non-qualified audit opinions. We note that between qualified and non-qualified companies, financial distress (FDISTR), receivables to net sales (REC/SAL), and working capital to total assets (WC/TA) have large and statistically significant differences in mean values. Companies with qualified audit opinions have a Zmijewski's financial condition score (1984) closer to zero[7], higher REC/SAL and lower WC/TA ratios. This is a first indication that some independent variables may indeed be related to audit opinion decisions. Finally, current assets to current liabilities (CA/CL), net profit to net sales (NP/SAL) and inventory and receivables to total assets (INVREC/TA) are not significantly different between qualified and non-qualified audit opinion companies.

By studying Panel B we observe two points. First, only 81 of the 281 companies audited by Big-4 firms received a qualified audit opinion. Second, 132 of the 226 companies with current year losses received a qualified opinion. The chi-square statistics indicates that there is significant difference between the two groups of companies in relation to the type of audit firm and current year losses.

[7] The higher the Zmijewski's financial condition score (1984) for a company, the greater is the risk of bankruptcy.

Table 2
Descriptive statistics, t-tests and chi-squared tests in the means of variables for qualified and non-qualified audit opinions

Panel A						
Continuous variables	*Qualified*		*Non-qualified*		*t-test*	*Sig.*
	Mean	*SD*	*Mean*	*SD*		*(2-tailed)*
FDISTR	-1.169	1.932	-1.703	1.132	5.163	0.000
CA/CL	1.999	2.511	1.796	1.471	1.510	0.131
REC/SAL	3.249	5.983	2.648	4.554	1.662	0.097
NP/SAL	-0.019	7.322	0.373	6.124	-0.852	0.394
INVREC/TA	0.384	0.208	0.392	0.207	-0.550	0.582
WC/TA	0.073	0.310	0.154	0.193	4.797	0.000

Panel B				
Categorical variables	*Qualified*	*Non-qualified*	*Chi-square*	*Sig.*
	No.	*No.*		
TYPEAUDITFIRM				
Big-4 (1)	81	200	39.265	0.000
Non-Big-4 (0)	317	302		
LOSS				
Yes (1)	132	94	24.617	0.000
No (0)	266	408		

Notes: FDISTR = financial distress (Zmijewski's financial condition score, 1984), CA/CL = current assets, divided by current liabilities, REC/SAL = receivables, divided by net sales, NP/SAL = net profit before taxes, divided by net sales, INVREC/TA = (inventories and receivables), divided by total assets, WC/TA = working capital, divided by total assets, TYPEAUDITFIRM = dummy variable equal to 1 if the audit firm belongs to the Big-4, 0 otherwise, LOSS = dummy variable equal to 1 if the firm has losses in the current year, 0 otherwise.

We also tested our data for multicollinearity using the Pearson Correlation matrix for the continuous variables (Table 3). There is a negative and significant, at the 1% significance level,

correlation between TOTALQUAL and WC/TA (-0.230), FDISTR and CA/CL (-0.384) and FDISTR and WC/TA (-0.560). The combinations of variables CA/CL and WC/TA, and INVREC/TA and WC/TA have positive correlations of 0.457 and 0.353 respectively, at the 1% significance level.

Table 3
Pearson Correlation matrix for continuous variables

	TOTAL QUALIF	*FDISTR*	*CA/CL*	*REC/SAL*	*NP/SAL*	*INVREC/TA*	*WC/TA*
TOTAL QUALIF	1.000						
FDISTR	0.261**	1.000					
CA/CL	0.031	-0.384**	1.000				
REC/SAL	0.035	-0.020	0.141**	1.000			
NP/SAL	-0.050	0.003	0.042	-0.129**	1.000		
INVREC/TA	-0.015	0.218**	-0.023	0.025	-0.019	1.000	
WC/TA	-0.230**	-0.560**	0.457**	0.084*	0.006	0.353**	1.000

Notes: *Significant at the 0.05 level (two-tailed), **significant at the 0.01 level(two-tailed)

TOTALQUAL = total number of qualifications in a company's audit opinion, FDISTR = financial distress (Zmijewski's financial condition score, 1984), CA/CL = current assets, divided by current liabilities, REC/SAL = receivables, divided by net sales, NP/SAL = net profit before taxes, divided by net sales, INVREC/TA = (inventories and receivables), divided by total assets, WC/TA = working capital, divided by total assets.

5.2 Multivariate Analysis

The results of the first research question are presented in Table 4. We ran logistic regression for model 1a and model 1b. According to the results for model 1a, the variables with significant coefficients are FDISTR, TYPEAUDITFIRM, CA/CL, LOSS, and WC/TA.

Regarding the TYPEAUDITFIRM variable, Big-N auditors are generally perceived as higher quality auditors (Palmrose, 1988), due to their technological capability in detecting earnings management, and once detected, a higher probability of reporting it (Johl et al., 2007). Therefore, a positive relationship is expected. In our study, though, it has a negative effect (b = -0.798, p=0.000), which implies that companies audited by Big-4 auditors have a lower probability of receiving a qualified opinion. This is also contrary to the finding of Caramanis and Spathis (2006) and Bartov et al. (2001), who found that the TYPEAUDITFIRM variable is insignificant. Also, the WC/TA variable with a significant negative coefficient (-1.567), implies that

companies with low WC/TA have an increased probability of receiving a qualified opinion. In Spathis (2003), this variable was insignificant.

Table 4
Logistic analysis of qualified and non-qualified financial statements

Independent Variables	*Model 1a*			*Model 1b*		
	Coefficients		*Sign.*	*Coefficients*		*Sign.*
FDISTR	0.144	(0.082)	0.078	-		-
TYPEAUDITFIRM	-0.798	(0.164)	0.000	-0.807	(0.164)	0.000
CA/CL	0.205	(0.072)	0.004	0.206	(0.072)	0.004
REC/SAL	0.015	(0.015)	0.303	0.015	(0.015)	0.318
NP/SAL	-0.010	(0.016)	0.553	-0.008	(0.015)	0.596
INVREC/TA	0.276	(0.519)	0.595	0.843	(0.043)	0.049
LOSS	0.323	(0.191)	0.091	0.423	(0.183)	0.021
WC/TA	-1.567	(0.648)	0.016	-2.186	(0.544)	0.000
Constant	-0.240	(0.307)	0.436	-0.614	(0.235)	0.009
Wald	17.718		0.000	16.505		0.000
Pseudo R^2 (%)	10.8			10.9		

Notes: standard errors in parentheses

Model (1a)

$Prob(QUAL_i)= b_0 + b_1FDISTR_i + b_2TYPEAUDITFIRM_i + b_3CA/CL_i + b_4REC/SAL_i + b_5NP/SAL_i + b_6INVREC/TA_i + b_7LOSS_i + b_8WC/TA_i + e_i$

Model (1b)

$Prob(QUAL_i)= b_0 + b_1TYPEAUDITFIRM_i + b_2CA/CL_i + b_3REC/SAL_i + b_4NP/SAL_i + b_5INVREC/TA_i + b_6LOSS_i + b_7WC/TA_i + e_i$

Definitions of Variables: Prob(QUAL) = dummy variable equal to 1 in the auditor has issued to the audited firm a qualified audit opinion, 0 otherwise, FDISTR = financial distress (Zmijewski's financial condition score, 1984), CA/CL = current assets, divided by current liabilities, REC/SAL = receivables, divided by net sales, NP/SAL = net profit before taxes, divided by net sales, INVREC/TA = (inventories and receivables), divided by total assets, WC/TA = working capital, divided by total assets, TYPEAUDITFIRM = dummy variable equal to 1 if the audit firm belongs to the Big-4, 0 otherwise, LOSS = dummy variable equal to 1 if the firm has losses in the current year, 0 otherwise.

FDISTR, CA/CL and LOSS have a positive effect in the probability of receiving a qualified audit opinion. This means that financially distressed companies, with high current ratios, and current year losses have an increased probability of being classified with qualified companies. On the contrary, Spathis (2003) found that financial distressed companies, with a high z-score, have increased probability of being classified in the non-qualified firms. Mutchler (1985) showed that companies that had received going-concern opinions displayed a low degree of financial distress. Spathis (2003) also found that LOSS is an insignificant variable, while Kleinman and Anandarajan (1999) found that consecutive year losses influence the auditor's decision to issue a qualified opinion. Dopouch et al. (1987) showed that one of the most significant variables in qualification prediction is current year losses.

Additionally, the independent variables REC/SAL, NP/SAL and INVREC/TA of the model are statistically insignificant. This finding is consistent with previous studies (Spathis, 2003; Caramanis and Spathis, 2006), but contrary to the widely accepted conjecture that receivables and profitability are risky accounts (Dopouch et al., 1987; Sundgren, 1998). Francis and Krishnan (1999) found a negative and significant coefficient for receivables. The relationship between the dependent and independent variables is significant (Wald = 17.718, $p < 0.000$). The Pseudo-R2 (0.108) indicates a not very strong relationship between the dependent and independent variables.

The analysis of the model 1b, which is the same as model 1a, with the omission of the FDISTR variable, gives similar results. The only difference is the inclusion of an additional significant variable, INVREC/TA. Therefore, the variables with significant coefficients are TYPEAUDITFIRM, CA/CL, INVREC/TA, LOSS, and WC/TA. The relationship between the dependent and independent variables is significant (Wald = 16.505, $p < 0.000$). The Pseudo-R2 = 10.9% indicates a not very strong relationship between the dependent and independent variables. In sum, TYPEAUDITFIRM, CA/CL and WC/TA are indicated as the most important variables.

In Table 5 we present the results of the OLS regression analysis, which investigates the relationship between the total number of qualifications received in a qualified opinion and financial and non financial characteristics of the audited company. Model 2a is significant ($F = 13.021$, $p <0.000$) and explains 10.4% of the variation in the number of qualifications (Adjusted R2 = 10.4%). The variables with significant coefficients are again FDISTR, TYPEAUDITFIRM, CA/CL, LOSS, and WC/TA. Companies receiving higher number of qualifications tend to be financially distressed ($b = 0.110$, $p< 0.002$), tend to be audited by non-Big 4 audit companies ($b = -0.256$, $p<0.000$), have higher CA/CL ($b = 0.060$, $p<0.004$), lower WC/TA ($b= - 0.529$, $p<0.045$), and experience current year losses ($b = 0.345$, $p<0.000$). The independent variables REC/SAL, NP/SAL and INVREC/TA of the model are statistically insignificant.

Model 2b is significant (F = 14.409, p <0.000) and explains 10.1% of the variation in the number of qualifications. The variables with significant coefficients are the same as in model 2a, with the omission of the FDISTR variable, and the inclusion of an additional significant variable, INVREC/TA. Therefore, the variables with significant coefficients are TYPEAUDITFIRM, CA/CL, INVREC/TA, LOSS, and WC/TA. These results suggest that the number of qualifications is mainly dependent on the TYPEAUDITFIRM, LOSS, and FDISTR, and then on CA/CL and WC/TA. Overall, the linear regression analysis confirms the results of the logistic analysis.

Table 5
Regression analysis of the total number of qualifications (TOTALQUALIF)

Independent	*Model 2a*			*Model 2b*		
Variables	*Coefficients*		*Sign.*	*Coefficients*		*Sign.*
FDISTR	0.110	(3.122)	0.002	-		-
TYPEAUDITFIRM	-0.256	(-3.610)	0.000	-0.267	(-3.729)	0.000
CA/CL	0.060	(2.892)	0.004	0.055	(2.699)	0.007
REC/SAL	0.004	(0.595)	0.552	0.004	(0.563)	0.573
NP/SAL	-0.003	(-0.443)	0.658	0.000	(-0.089)	0.929
INVREC/TA	0.044	(0.192)	0.848	0.442	(2.456)	0.014
LOSS	0.345	(3.973)	0.000	0.439	(5.235)	0.000
WC/TA	-0.529	(-2.012)	0.045	-0.941	(-4.962)	0.000
Constant	0.764	(5.908)	0.000	0.490	(5.169)	0.000
Adjusted R^2 (%)	10.4			10.1		
F statistic	13.021		0.000	14.409		0.000

Notes: t-statistics in parentheses

Model (2a)

$TOTALQUALIF_i = b_0 + b_1FDISTR_i + b_2TYPEAUDITFIRM_i + b_3CA/CL_i + b_4REC/SAL_i + b_5NP/SAL_i + b_6INVREC/TA_i + b_7LOSS_i + b_8WC/TA_i + e_i$

Model (2b)

$TOTALQUALIF_i = b_0 + b_1TYPEAUDITFIRM_i + b_2CA/CL_i + b_3REC/SAL_i + b_4NP/SAL_i + b_5INVREC/TA_i + b_6LOSS_i + b_7WC/TA_i + e_i$

Definition of Variables: TOTALQUALIF = total number of qualifications, FDISTR = financial distress (Zmijewski's financial condition score, 1984), CA/CL = current assets, divided by current liabilities, REC/SAL = receivables, divided by net sales, NP/SAL = net profit before taxes, divided by net sales, INVREC/TA = (inventories and receivables), divided by total assets, WC/TA = working capital, divided by total assets, TYPEAUDITFIRM = dummy variable equal to 1 if the audit firm belongs to the Big-4, 0 otherwise, LOSS = dummy variable equal to 1 if the firm has losses in the current year, 0 otherwise.

6. Conclusion

This study aimed to provide evidence on the relationship between financial and non financial information of a company and the probability of receiving a qualified audit opinion. The objective was to develop a model, which could predict and explain qualifications in audit opinion. Our sample, comprised of Greek listed companies on the ASE, for the period 2005-2008, with audited financial statements, prepared according to IFRS. We selected eight variables, i.e. financial distress, type of audit firm, current assets to current liabilities, receivables to net sales, net profit to net sales, inventories and receivables to total assets, current year losses, and working capital to total assets. Then, we built two models, to investigate the relationship of the independent variables with: (i) the type of audit opinion received, and (ii) the number of qualifications found in audit opinions. For almost 900 observations, we ran univariate tests and multivariate analyses, logistic and OLS regression analysis.

The results revealed that the occurrence of a qualified audit opinion is primarily associated with the type of audit firm. Companies audited by Big-4 auditors have lower probability of receiving a qualified opinion. Moreover, financial distress and current year losses are statistically significant and positively related to the probability of receiving a qualified opinion. Liquidity is also significant. Companies with high current ratios and low working capital to total assets ratios have an increased probability of being classified with qualified companies. Similar results derived from the analysis of the second model, regarding the number of qualifications found in audit opinions.

The above empirical analysis suggests that there is potential in detecting qualified audit reports through analysis of publicly available financial data and audit firm characteristics. The proposed models could be of assistance to internal and external auditors, state authorities, individual and institutional investors, financial analysts, and other decision makers. A further possibility to enhance the models would be to examine variables other than those found in financial statements, such as corporate governance variables. However, the results are subject to limitations. The low values of adjusted R2 and pseudo R2 indicate that our models are rather poor in explaining the variability of the type of audit opinion and number of qualifications found in audit reports. Furthermore, this study examined the specific variables on one sample in a particular setting, thus, we should be careful with generalizations. This is also reflected in some of our findings, which are inconsistent with prior literature. Finally, every instance of audit

opinion of financial statements is an individual case and variables that are not significant in the aggregate may still be useful indicators for a particular case.

References

Antle, R. and Nalebuff, B. (1991). Conservatism and auditor-client negotiations. Journal of Accounting Research 29 (Supplement) 31-59.

Baralexis, S. (2004). Creative Accounting in Small Advancing Countries: The Greek Case. Managerial Auditing Journal 19(3), 440-461.

Bartov, E., Gul, F. A. and Tsui, J. S. L. (2001). Discretionary-accruals models and audit qualifications. Journal of Accounting and Economics 30, 421–452.

Benston, G.J., (2003). The Quality of Corporate Financial Statements and Their Auditors before and after Enron. Policy Analysis 497, 1-29.

Bhattacharya, U., Daouk, H. and Welker, M. (2003). The world price of earnings opacity. The Accounting Review 78, 641-678.

Body of Sworn-in Accountants S.A., SOL SA (2009). 'Statistical Data of Auditing Companies'. Available at: http://www.solae.gr/company/statistics.cfm? (Accessed on November 25, 2009).

Body of Sworn-in-Auditors and Accountants, SOEL. (2009). 'Historical Review' Available at: http://www.soel.gr/ (Accessed on December 12, 2009).

Bushman, R.M. and Smith, A.J. (2003). Transparency, Financial Accounting Information, and Corporate Governance. FRBNY Economic Policy Review, 65-87.

Butler, M., Leone, A.J., and Willenborg, M. (2004). An empirical analysis of auditor reporting and its association with abnormal accruals. Journal of Accounting & Economics 37, 139-165.

Caramanis, C.V. (1997). International accounting firms versus indigenous auditors: intra-professional conflict in the Greek auditing profession 1990-1996. Proceedings of the Fourth Interdisciplinary Conference in Accounting, UMIST and University of Manchester, July 1997.

Caramanis, C.V. (1998). Assessing the impact of "liberalization" on auditor behavior. Accounting research in politically charged contexts. Accounting, Auditing and Accountability Journal 11(5), 562-592.

Caramanis, C.V (2005). Rationalisation, charisma and accounting professionalization: perspectives on the intra-professional conflict in Greece, 1993-2001. Accounting, Organizations and Society 30, 195-221.

Caramanis, C.V. and Lennox, C. (2008). Audit effort and earnings management. Journal of Accounting and Economics 45, 116-138.

Caramanis, C., and Spathis, C. (2006). Auditee and Audit Firm Characteristics as Determinants of Audit Qualifications: Evidence from the Athens Stock Exchange. Managerial Auditing Journal 21(9), 905-920.

Chen, K. and Church, B. (1992). Default on debt obligations and the issuance of going concern opinions. Auditing: A Journal of Practice and Theory, 30-49, Fall.

Cohen, J., Krishnamoorthy, G. and Wright, A. (2004). The Corporate Governance Mosaic and Financial Reporting Quality. Journal of Accounting Literature 23, 87-152.

Coller, M., Higgs, J.L. and Wheeler, S. (2002). An Experimental Market Analysis of Auditor Work-Level Reduction Decisions. Advances in Accounting 19, 53-70.

DeAngelo, L.E. (1981). Auditor Size and Audit Quality. Journal of Accounting and Economics 3, 183–99.

Dechow, P. M., Sloan, R.G. and Sweeney, A. P. (1995). Detecting earnings management. The Accounting Review 70, 193-225.

Dechow, P.M., Sloan, R. and Sweeney, A.P. (1996). Causes and Consequences of Earnings Manipulation: an Analysis of Firms Subject to Enforcement Actions by the SEC. Contemporary Accounting Research 13(1), 1-36.

DeFond, L.M., Raghunandan, K. and Dubramanyam, R.K. (2002). Do non-audit service fees impair auditor independence? Evidence from going concern audit opinions. Journal of Accounting Research, 40(4), 1247-74.

Dopouch, N., Holthausen, R. and Leftwich, R. (1987). Predicting audit qualifications with financial and market variables. The Accounting Review, 62(3), 431-54.

Francis, J.R. and Krishnan, J. (1999). Accounting accruals and auditor reporting conservatism. Contemporary Accounting Research, 16(1).

Gaganis, C., Pasiouras, F., Spathis, C., and Zopounidis, C. (2007). A Comparison of Nearest Neighbours, Discriminant and Logit Models for Auditing Decisions. Intelligent Systems in Accounting, Finance and Management 15(1-2), 23-40.

Gray, S. J. (1988). Towards a Theory of Cultural Influence on the Development of Accounting Systems Internationally. Abacus 24(1), 1-15.

Hofstede, G. (1980). Culture's consequences: international differences in work related values. Sage Publications.

Hofstede, G. (1991). Cultures and organisations: software of the mind. McGraw-Hill.

Houghton, K.A. and Jubb, C.A. (1999). The cost of audit qualifications: the role of non-audit services. Journal of International Accounting, Auditing and Taxation 8(2), 215-40.

Johl, S., Jubb, C.A., Houghton, K.A. (2007). Earnings management and the audit opinion: Evidence from Malaysia. Managerial Auditing Journal 22(7), 688-715.

Jones, J. (1991). Earnings management during import relief investigations. Journal of Accounting Research 29, 193-228.

Kirkos, E., Spathis, C., Nanopoulos, A., and Manolopoulos, Y. (2007). Identifying Qualified Auditors' Opinions: A Data Mining Approach. Journal of Emerging Technologies in Accounting 4(1), 183-197.

Kleinman, G. and Anandarajan, A. (1999). The usefulness of off-balance sheet variables as predictors of auditors' going concern opinions: an empirical analysis. Managerial Auditing Journal 14(6), 273-85.

Kothari, S.P., Leone, A.J. and Wasley, C.E. (2005). Performance matched discretionary accruals measures. Journal of Accounting and Economics 39, 163-197.

Koumanakos, E., Georgopoulos, A. and Siriopoulos, C. (2008). Auditor awareness of earnings management. International Journal of Accounting, Auditing and Performance Evaluation 5(1), 50-65.

Koumanakos, E., Siriopoulos, C. and Georgopoulos, A. (2005). Firm acquisitions and earnings management: Evidence from Greece. Managerial Auditing Journal 20, 663-678.

Krishnan, J. and Krishnan, J. (1996). The role of economic trade-offs in the audit opinion decision: an empirical analysis. Journal of Accounting Auditing and Finance, 11(4), 565-86.

Laitinen, E.K. and Laitinen, T. (1998). Qualified audit reports in Finland: evidence from large companies. The European Accounting Review 7(4), 639-53.

Lennox, C. (2005). Audit quality and executive officers' affiliations with CPA firms. Journal of Accounting and Economics 39(2), 201-31.

Leuz, C., Nanda, D. and Wysocki, P. (2003). Earnings management and investor protection: an international comparison. Journal of Financial Economics 69, 505-527.

Leventis, S. and Caramanis, C. (2005). Determinants of audit time as a proxy of audit quality. Managerial Auditing Journal 20(5), 460-478.

Moizer, P. (1997). Auditor Reputation: the International Empirical Evidence. International Journal of Auditing 1(1), 61–74.

Mutchler, J. (1985). A multivariate analysis of the auditor's going-concern opinion decision. Journal of Accounting Research, 668-82, Autumn.

Palmrose, Z. (1988). An analysis of auditors litigation and audit service quality. The Accounting Review 63, 55-73.

Spathis, C. (2003). Audit Qualification, Firm Litigation, and Financial Information: An Empirical Analysis in Greece. International Journal of Auditing 7(1), 71-85.

Spathis, C., Doumpos, M. and Zopounidis, C. (2003). Using Client Performance Measures to Identify Pre-engagement Factors Associated with Qualified Audit Reports in Greece. The International Journal of Accounting 38(3), 267-284.

Sundgren, S. (1998). Auditor choices and auditor reporting practices: evidence from Finnish small firms. The European Accounting Review 7(3), 441-65.

Watts, R.L., and Zimmerman, J.L. (1981). The Markets for Independence and Independent Auditors. Working paper, University of Rochester.