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Audit Quality under Influences of Audit Firm and Auditee Characteristics: Evidence from the Romanian Regulated Market

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Abstract: We have estimated the impact of some characteristics of the auditors and of the audited companies on audit quality for the Romanian listed firms (943 observations for the 2007–2019 period), using as a proxy for the audit quality the level of discretionary accruals, measured following the Jones (1991) model, and the accruals quality, estimated through the Dechow and Dichey (2002) model. These dependent variables have been related to variables that reflect both the characteristics of the audit firm (for example, Big 4 membership) and the characteristics of the audited firms (dimension, financial leverage, accounting standards applied, growth and profitability). Our results show that the auditor's Big 4 membership contributes to an increase in discretionary accruals, decreasing the quality of the audit. The transition to IFRS did not have a significant influence on the quality of the audit. The audit opinion may have an effect on the discretionary accruals and the accruals quality in the sense that a modified opinion leads to an increase in the quality of the audit in the following financial year(s).

Keywords: audit quality; financial reporting quality; Romanian listed companies; auditor category; audited companies' characteristics

1. Introduction

The quality of the information presented in financial statements is one of the most important topics in the accounting literature. There are many indicators to measure this quality and its impact on a variety of variables, often driven by the behaviour of investors and other stakeholders. However, the financial information provided by listed entities is subject to the control of the financial auditor who, as an independent professional, is expected to assess the conformity of the financial statements with the accounting standards applied by the audited entity. The financial auditor's report, as long as it does not contain an ongoing concern, also provide to the users a confirmation that the company will remain in operation in the foreseeable future, and that the activity reported in the financial statements is sustainable, at least in the medium term. In this direction, the literature has developed strongly in the sense of analysing the quality of the financial audit, which offers additional guarantees on the quality of the financial presentation.

Audit quality is the extent to which the market recognizes the ability of the auditor to detect and report breaches in the client's accounting and financial reporting system [1]; this means that the quality of the audit is a function of the auditor's competence and independence [2]. Fremeaux and Noel [3] add to this the auditor's technical competence, as well as the auditor's ethical competence and relational competence, as determinants of the quality of the audit. A good audit quality provides a high degree of assurance that the financial statements present fairly the financial position and performance of the entities, based on the financial presentation system and the characteristics of the entity [4]. The increase in audit quality is related to certain variables, among which the improvement of the specific regulation [5], but also the professional regulation, the size of the audit firm, the



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non-audit services, the length of the auditor's mandate, the corporate governance of the client, the auditor's specialization by industry, the protection of investors [6]; the economic context (financial crisis: [7]); the size and other characteristics of the firms audited, the knowledge of the local market and the connections in the local business environment [8]; and the combination of the standards of the audit and legal system of a country [9].

There are many variables used to measure the quality of the audit. O'Keefe et al. [10] proposed a model in which the level of audit quality is a function of the auditor's competence, knowledge of these clients, industry knowledge, quality of the employees, and the characteristics of the client. One of the most widely used measures is the association between audit quality and accounting conservatism. Cameran et al. [11] identify many studies that take into account this association.

Beisland et al. [12] warn us that the results proposed by audit quality studies in developed capital markets cannot be extended to other regions and economic contexts. Similarly, Fang et al. [13] found in the literature that, in developing countries with limited investor protection, good quality audits are an important component of governance and leads to mitigating agency conflicts.

In the case of Romania—an emerging country whose financial market was created about 20 years ago—the application of international accounting, financial reporting, and auditing standards is also recent. The relatively small size of the financial markets—a little more than 80 listed companies at the end of the year 2020 on the regulated market—means that these firms are not often taken into account in studies concerning the quality of the financial statement, audit quality, or other recurring themes in international accounting research. In this context, we have mobilized a methodology often used in the literature, to try to establish a link between the quality of the audit—proxied by the discretionary accruals (DAC) and accruals quality (AQ)—and certain characteristics of the auditors (Big 4 vs. non-Big 4 and the type of opinion issued) and of the firms audited—profitability, dimension, financial leverage, and growth. The study concerns a population made up of listed Romanian companies whose activities are non-financial, over a period of 13 years: 2007–2019.

The contributions of our study relate to the confirmation of a better audit quality provided by a modified opinion expressed for the previous year, under certain conditions, by highlighting a better audit quality for large firms and the profitable ones and the identification of a negative effect of the firm's growth on audit quality. The accounting standards and leverage have no significant effect on audit quality.

Through the analyses performed, the study contributes to the developing of research regarding audit quality, covering a gap in the Romanian specialized literature, being the first study of this type addressing the Romanian stock market. We also propose to include the financial audit in the list of factors influencing the sustainability performances of companies. From a practical perspective, both the results and the proposed econometric models can be analysis benchmarks, respectively being applicative tools in evaluating financial audit quality. The methodology and the results represent a starting point for future research, to be carried out even in the field of sustainability audits.

The rest of the paper includes a literature review and hypotheses development (Section 2), the methodology and data (Section 3), results and discussions (Section 4), conclusions (Section 5), and references.

2. Literature Review and Hypothesis Development

Although there are many studies that offer solutions for measuring the audit quality, the practical implementation of this measure remains difficult [14], because the audit quality is difficult to observe [12]. The level of auditor performance should be correlated with the types of entities audited, with the characteristics of audit firms [15], and with the regulatory framework [16]. The literature does not provide a hierarchy of proxies for measuring audit quality because each one has its own limits [17], but criteria for grouping these indicators into several categories are found. So, DeFond and Zhang [4] provide output

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indicators of the audit process (significant errors, auditor communication ability, the quality of financial reporting, and measures based on the perception of stakeholders) and indicators on the inputs of the audit process (auditor size, the auditor specialization by industry, and audit fees). Gonthier-Besacier et al. [18,19] group 55 indicators in three categories: (1) the attributes of the audit engagement; (2) the characteristics of the interaction between the auditor and the representatives of the firm audited (the management, the audit committee, and other corporate governance structures), and the characteristics of the audit team and the audit firm; and (3) the characteristics of the audit regulation. In turn, Du and Lai [15] considers that it is useful to analyse the audit quality based on the characteristics of the audited entities and audit firms, finding a better comparability of the financial information between firms audited by the same auditor.

In the analysis of audit quality, the quality of the financial information presented by the firms is the main input. Among the most used characteristics—used as proxies for the audit quality—we have the dimension of the discretionary accruals (DAC) and the quality of the accruals [17], a timeliness recognition of losses [4]. A high level of audit quality is associated with a reduced size of the DAC [20,21], and the quality of the accruals conditions that of the audit [22,23]. Similarly, a high level of conditional conservatism—which consists of faster recognition of losses over earnings [24]—leads to better audit quality [11,25].

The organization and operational activity of audit firms offers a wide range of indicators that can measure the audit quality. It takes into account the auditor categories—generally Big N vs. non-Big N [1,26,27]—specialization of the auditor by industry [4], or the international presence [28]. Thus, the high concentration of the audit market can positively influence the audit quality [29], as well as the proximity of the auditor's and his client's office [30].

The specific contracts between the auditor and the client can indirectly determine the audit quality; audit fees are considered a proxy for the audit quality [31] and fees for non-audit services represent a factor that leads to a decrease in the independence of the auditor; that is, a decrease in the quality of the audit [32]. In the same category, the tenure of the auditor's mandate (the rotation of the auditor and/or the partner) is related to the qualitative level of the audit [21,33].

The outputs of the audit process directly reflect the audit quality by highlighting the significant errors detected by the auditor [4,17,22] and this through the audit opinion (modified vs. unmodified) and/or through the emphasis of the matters paragraph.

Audit quality studies use proxies found in the two categories previously described (inputs or outputs), highlighting the correlations between these proxies and other indicators (financial and/or non-financial). Thus, for example, the audit quality measured by the auditor category (Big N vs. non-Big N) is often analysed in relation to the type of opinion: modified or unmodified [34], with the dimension of the DACs [8], with the identification of certain contracts violations, with the financial distress of the firms analysed [27], or with corporate governance indicators [12].

Mande and Son [22] link the quality of the accruals with the fees paid to the auditor for both audit and non-audit services. Yuan et al. [35] find that the audit quality is influenced by the auditor's expertise by industry and by the client's business strategy, while the discretionary accruals dimension is correlated with the level of bonuses [36] and the tenure of the auditor contracts [21] with the phase of the mandate of the auditor [11]. The accruals (the Dechow and Dichev model, 2002) are used by Lambert et al. [23] to identify the negative effects of the pressure on auditors by authorities that decrease the period of preparation of the financial statements.

Fung et al. [17] warn us that there are limits to all the indicators used to assess the audit quality—this is why authors are asked to take into account, at the same time, several indicators belonging to all categories, to overcome these limitations.

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Creditors take into account, in the risk analysis they conduct, elements associated with audit quality. Rodriguez and Alegria [37] found, for Spanish companies, that entities audited by quality auditors bear lower costs of credit. Similarly, Fernando et al. [38] identified an inverse dependence between the cost of equity and elements that allow the estimation of the quality of the audit: the auditor's category, auditor's specialization, and auditor's tenure. In the same sense, Robin et al. [39] consider that a good audit quality is negatively associated with the degree of violation of credit contracts, with positive effects on the cost of debt.

There is a great diversity of indicators used in the literature to estimate the financial audit quality. In this regard, Chung et al. [40] analysed the extent to which investors perceive the risk of reducing the quality of the audit following the change of the auditor, identifying a tendency to decrease confidence in the results reported by the audited companies. Lobo et al. [41] estimate the audit quality using three proxies: Big 4 membership, auditor specialization by industry, and audit effort measured by abnormal audit fees. They found that a good audit quality can mitigate the negative effects of innovations carried out by a company on the quality of the financial information it publishes.

The goodwill depreciation is used as proxy for audit quality by Lobo et al. [25], because of the possibilities that management have to influence the accounting measurement and treatment of this depreciation. In the specific context of the French financial market—the mandatory joint audit system—they find that a better audit quality is provided by the pairs of Big 4 auditors + non-Big 4. To verify their results, the authors also use consecrated measures of audit quality (abnormal accruals and conditional conservatism) that confirm their conclusions. Smith and Emerson [42] propose to identify low-quality audits through certain auditors' behaviour who, for example, accept unconvincing explanations from their clients who do not check how the audited company has applied one or more accounting principles, made a superficial verification of documents, do not respect entirely the procedures of an audit, or whose volume of work is below what is considered reasonable. Of course, information about this type of behaviour is not directly available, and the authors had to send questionnaires to auditors to identify and measure them.

Audit quality is correlated in some studies with the absolute value of discretionary accruals [20], the cost of debt [43], audit opinions, including ongoing concern observations, the closing date, the auditor category (Big N vs. others) [44], the median by industry of non-recurring adjusted items (this median is calculated as follows: net income—operating result + the result of other operations/total assets, all adjusted by the median value of the industry) [45], the impact of restatements of financial statements after their publication and the percentage of sales to related parties [13]; and how auditors apply the auditing standards in writing their reports [46].

In the case of Italy, Cameran et al. [11] found that the mandatory rotation of audit partners has a positive effect—under certain conditions—on audit quality, but they do not find a similar relationship with respect to the rotation of the audit firm. The measurement of the audit quality is done through the modified audit opinion. Moroney [14] analyses several studies on the auditors' rotation and its effects on audit quality and found that the results of these studies are not necessarily convergent: there are some who find that rotation leads to an increase in quality, but there are others who do not find consequences of the auditor's rotation on the quality of the audit.

The literature on the audit topics for the Romanian listed companies is not very rich and, in general, does not relate directly to audit quality. Thus, Dănescu and Spătăcean [47] analysed audit opinions for a limited sample of listed firms (32 firms for 9 years: 2009–2017), trying to identify the reaction of investors to modified opinions—this reaction can be described, according to the authors, as rational in 48% of cases and irrational in 45% of cases. Istrate et al. [48] analysed the modified opinions received by the Romanian listed companies and identified the main explanations offered by the auditors to justify these opinions.

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Robu et al. [49] found that the rotation of auditors of the Romanian listed firms makes a significant contribution to increasing the degree of relevance of the financial information provided. Dobre [50] relates audit fees to certain governance indicators for Romanian listed firms and found, for example, that the auditor's characteristics do not affect audit fees. In the analysis of audit quality in the case of Romanian listed companies, Păunescu [46] groups auditors into three categories—Big 4 and other auditors internationally affiliated, non-Big 4 auditors working as individuals; and other non-Big 4 local auditors—and analysed the audit quality by studying how the auditors meet the requirements of the auditing standards and found that small local auditors are not always able to write good ISA compliant audit reports.

Considering the relationships identified in the literature, we aim to test the following working hypotheses:

Hypothesis 1 (H1). *The auditor's reputation and client firm characteristics significantly influence the quality of the audit.*

Hypothesis 2 (H2). *The audit opinion expressed for the previous year and client firm characteristics significantly influence the quality of the audit.*

3. Methodology and Data

Our goal is to test the relationship between certain characteristics of the auditors (Big 4 vs. non-Big 4 and the type of opinion issued) and the specific of the audited firm, on the one hand, and quality of audit express by the level of discretionary accruals (DAC) and the quality of accruals (AQ), on the other hand.

Chen et al. [34] consider that auditors—especially Big N auditors—are more likely to provide modified opinions for clients in areas with a lower level of communication and significant DACs. Comprix and Hung [8] found that firms that rely on small auditors have a higher probability of manipulating income through DACs. Simons and Zein [26] found that, in general, the literature associates the auditor's dimensions with a high quality of the audit.

The dimensions of the DACs are significantly influenced by the auditor tenure; Garcia-Blandon et al. [21] found a decrease in audit quality (indicated by the increase in the DACs) for contracts exceeding 10 years. The quality of the accruals is influenced by the size of the audit fees as an exponent of the high effort made in the audit mission [22].

3.1. Population

The population we analysed is formed by Romanian companies listed on the regulated market of the Bucharest Stock Exchange (BSE), after the elimination of financial intermediaries. The data concern the period 2007-2019 and were collected manually from the individual financial statements of the listed firms. In Table 1, we present some details on the firms analysed. There are two sub-periods, depending on the accounting standards applied: 2007-2011, with the application of Romanian accounting standards (RAS), in line with European directives and 2012-2019, with the application of IFRS. In the case of outliers, we used the Hoaglin and Iglewicz method. These authors propose the use of a multiplier (whose value is 2.2), applied to the difference between quartile 3 (Q3) and quartile 1 (Q1) of the analysed data series. The value thus obtained is used to adjust Q1 and Q3, so that the values that lie outside the interval (Q3 + n, Q1 – n) are considered extreme values and are replaced by the closest value in the distribution [51].

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				Auditor Category				
Year	Accounting Standards Applied	Number of Observations	Bi	g N	Non-	-Big N		
			N	%	N	%		
2019	IFRS	67	17	25.37	50	74.63		
2018	IFRS	69	19	27.53	50	72.47		
2017	IFRS	71	22	30.98	49	69.02		
2016	IFRS	68	22	32.35	46	67.65		
2015	IFRS	70	24	34.29	46	65.71		
2014	IFRS	69	23	33.33	46	66.67		
2013	IFRS	71	25	35.21	46	64.79		
2012	IFRS	68	22	32.35	46	67.65		
2011	RAS	79	25	31.65	54	68.35		
2010	RAS	78	23	29.49	55	70.51		
2009	RAS	77	22	28.57	55	71.43		
2008	RAS	79	20	25.32	59	74.68		
2007	RAS	77	19	24.68	58	75.32		
Total	-	943	283	30.01	660	69.99		

Table 1. The population analysed in the study.

The variables used in the statistical treatments are presented in Table 2.

Variable	Abbreviation	Description
Discretionary accruals	DAC	This variable reflects the size of discretionary accruals
Accruals quality	AQ	Accruals quality measured with Dechow and Dichev [52] model
Auditor category	Big 4	Dummy variable that takes the value 1 if the auditor is a Big 4 and 0 otherwise
Opinion	OP	Dummy variable that takes the value 1 if the audit opinion is unmodified and 0 for the modified opinions
Dimension	SIZE	Log of total assets
Leverage	FL	Total liabilities/equity
Operational profitability	ROA	Operating income/total assets
Sales growth	SalesGr	$(sales_{i,t}-sales_{i,t-1})/sales_{i,t-1}$
0		Dummy variable which takes the value 1 if the financial statements are in
Accounting standards	IFRS	conformity with the IFRS and 0 in the case of the application of the Romanian
e e		accounting standards (RAS)

Table 2. The variables.

Another type of audit—performed by the financial auditor or by a different one relates to sustainability reports. An important variable may thus appear in the analysis of audit quality. However, most Romanian listed companies do not provide exploitable sustainability reports, so we could not take this variable into account without significantly restricting the population studied.

Based on the origin of the accruals—the difference between cash accounting and accrual accounting—we calculated total accruals (TA) by following Pelucio-Grecco et al. [53]: the difference between net income (NI) and total net cash flow (CF). To estimate discretionary accruals (DAC), we used the Jones model [54]—well known in the literature [20,21,55,56]—whose relation is presented in Equation (1).

$$TA_{t}/A_{t-1} = \beta_{0} \times 1/A_{t-1} + \beta_{1} \times \Delta REV_{t}/A_{t-1} + \beta_{2} \times PPE_{t}/A_{t-1} + \varepsilon_{t}$$
 (1)

where TA is the total accruals for year t, ΔREV is the change in sales in year t compared to year t - 1, PPE represents the gross value of tangible fixed assets in year t, and ε is the error term. DAC represents the absolute value of the residual component (the error).

In order to assess the quality of the accruals, we used the Dechow and Dichev [52] model, represented in Equation (2).

$$TCA_{t} = \alpha_{0} + \alpha_{1} \times CFO_{t-1} + \alpha_{2} \times CFO_{t} + \alpha_{3} \times CFO_{t+1} + \varepsilon$$
(2)

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where TCA is the total current accruals of year t, calculated as the difference between the operating income (OI) and the operating cash flow (CFO); CFO represents the current year's cash flow from operating activities, the previous one t-1, and the next year t+1. The quality of the accruals is measured by the standard deviation of the error. A reduction in the standard deviation shows an increase in the quality of the accruals.

3.2. Method

The assessment of audit quality by identifying a set of factors that reflect both the characteristics of the auditor and the characteristics of the auditee was achieved by multiple regression analysis, with alternative variables (quantitative and dummy). The models we propose individualize the indicators associated with accruals, by correlating them with the characteristics of the auditor and the client. Thus, Equations (3) and (4) present the relationships developed for the purpose of assessing audit quality by the DAC level dimension.

$$DAC_{i,t} = \alpha_0 + \alpha_1 \times BIG4_{i,t} + \alpha_2 \times CLIENT_LEV_{i,t} + \alpha_3 \times IFRS_{i,t} + \varepsilon_{i,t}$$
 (3)

where DAC is the discretionary accruals of firm i at moment t (a reduced dimension of the DAC shows a high quality of the income, respectively, of the audit); BIG4 shows the auditor category (Big 4 or non-Big 4) for firm i at moment t; CLIENT_LEV expresses the variables specific to the customers, i.e., the dimension (SIZE), the financial leverage (FL), the profitability (ROA); and growth (SalesRG); IFRS shows the category of accounting standards applied by firm i in the year t; $\alpha_0, \ldots, \alpha_i$ are the parameters of the variables of the model; while $\epsilon_{i,t}$ represents the error term.

$$DAC_{i,t} = \alpha_0 + \alpha_1 \times Lag_Opinion_{i,t-1} + \alpha_2 \times CLIENT_LEV_{i,t} + \alpha_3 \times IFRS_{i,t} + \varepsilon_{i,t}$$
 (4)

Lag_Opinion represents the type of audit opinion (modified or unmodified) for firm i and year t-1.

In order to assess the quality of the audit by using as proxies the accruals quality, Models (5) and (6) were used.

$$TCA_{i,t} = \alpha_0 + \alpha_1 \times CFO_{i,t-1} + \alpha_2 \times CFO_{i,t} + \alpha_3 \times CFO_{i,t+1} + \alpha_4 \times BIGA_{i,t} + \alpha_5 \times CLIENT_LEV_{i,t} + \alpha_6 \times IFRS_{i,t} + \epsilon_{i,t}$$
 (5)

where TCA are the total current accruals of year t, at the moment t; CFO represents the current year's cash flow from the operating activities, for the firm i, at the moment t, t-1 and t+1.

$$TCA_{i,t} = \alpha_0 + \alpha_1 \times CFO_{i,t-1} + \alpha_2 \times CFO_{i,t} + \alpha_3 \times CFO_{i,t+1} + \alpha_4 \times Lag_Opinion_{i,t} + \alpha_5 \times CLIENT_LEV_{i,t} + \alpha_6 \times IFRS_{i,t} + \varepsilon_{i,t}$$
 (6)

The quality is revealed by the size of the standard deviation of the error term. A drop in standard deviation shows an increase in accruals quality, so a higher audit quality.

4. Results and Discussion

The results that we will present take into account both the descriptive analysis of the variables used and the relationships between these variables, as they were proposed in the hypotheses.

4.1. Descriptive Statistics

In Table 3, we have synthesized the distributions of the values of the variables used in the research. The analysis is first done at the level of the sample as a whole and, subsequently, taking into account the accounting standards applied (IFRS vs. RAS).

The descriptive analysis allows us to identify the reduced values of the DACs, with a limited dispersion around the mean (Std.Dev. = 0.065), for all the observations as well as for the two categories of the standards applied. Total current accruals (TCAs) are, on

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average, negative, but more pronounced in the IFRS period than in the RAS period. The firms analysed have reduced returns (ROA $_{total}$ = 0.030), but are relatively different per period (ROA $_{IFRS}$ = 0.026 < ROA $_{RAS}$ = 0.035), which can be explained by the standards applied, but also by the different economic context. Operating cash flows (relative to total assets) are higher in the IFRS period, which correlated with the situation of the ROA and explains the decrease in the TCA by the reduction of the frequency of the appearance of the accounting choices generating accruals.

		Total Sample			IF	IFRS, 2012–2019		RAS, 2007–2011				
Elements	N	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median	Mean	Std. Dev.	Median	t-Test	<i>p</i> -Value
DAC	943	0.068	0.065	0.041	0.070	0.067	0.045	0.066	0.063	0.040	-0.934	0.350
TCA	943	-0.012	0.079	-0.008	-0.017	0.077	-0.016	-0.007	0.081	0.000	-2.352	0.019
ROA	943	0.030	0.074	0.027	0.026	0.076	0.022	0.035	0.072	0.037	1.786	0.074
CFO	943	0.040	0.079	0.027	0.045	0.077	0.032	0.032	0.080	0.019	-2.520	0.012
FL	943	0.683	0.769	0.384	0.620	0.724	0.345	0.774	0.821	0.463	3.043	0.002
SalesGr	943	0.029	0.264	0.012	0.025	0.264	0.029	0.034	0.264	0.000	0.463	0.644
SIZE	943	19.06	1.584	18.89	19.19	1.626	18.94	18.87	1.504	18.81	-3.063	0.002

Table 3. Descriptive statistics of the analysed variables.

Business activity growth was significantly different between the two periods (Sales $Gr_{IFRS} = 0.026 < Sales<math>Gr_{RAS} = 0.034$). This situation can be explained by the accounting standards applied, but we must not forget that the first period that experienced the crisis started in 2008, with a decrease in revenues, but which was followed by the recovery that more than offset the effects of the crisis. With regard the leverage and size, there are no significant differences between the two periods, but the distribution of values shows a significant dispersion around the average, a situation specific to emerging countries.

Table 4 presents the correlation matrix of the variables studied. There are significant links between the dependent variable DAC, on one side, and the independent variables, on the other hand. These correlations generally follow the structure of the proposed econometric models. At the same time, there is no strong link between the independent variables, which eliminates the risk of collinearity.

Variables	DAC	TCA	BIG4	OP	ROA	FL	CFO	SIZE	Salesgr	IFRS
DAC	1	-0.064 *	0.029 *	0.015 **	-0.057	-0.012	0.019	-0.070 *	0.058	0.030
TCA		1	-0.011	0.022	0.515 **	0.113 **	-0.520**	-0.084**	0.172 **	-0.066*
BIG4			1	0.010	0.103 **	0.077 *	0.114 **	0.498 **	0.073 *	0.038
OP				1	0.115 **	-0.061	0.214 **	0.085 **	0.052	0.235 **
ROA					1	-0.026	0.354 **	0.114 **	0.245 **	-0.058
LF						1	-0.136 **	0.033	0.094 **	-0.099 **
CFO							1	0.212 **	0.052	0.082 *
SIZE								1	0.101 **	0.099 **
SalesGr									1	-0.015
IFRS										1

Table 4. Correlation matrix between the variables.

Notes: ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed). Source: own processing.

4.2. Empirical Results

Audit quality is estimated through two proxies—the dimensions of the DACs and the quality of accruals—in relation to the influences of several factors specific to both auditors and audited firms.

The influences of the auditor category and the characteristics of the auditee are summarized in Table 5. (Beisland et al. [12]) consider that the use of the services of a Big N and the presence of the internal audit are indicators of the quality of the audit and test their relevance in correspondence with the mechanisms of corporate governance for 70 countries: they found a direct relation between the elements analysed. Big N auditors

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seem more concerned about offering quality services to protect their reputation and to limit the cost of potential litigation [27] Following the sequential test of the correlation, a significant influence of the type of auditor is identified, but only after the introduction into the analysis of the characteristics of the firms audited. Thus, we observe a negative impact of the auditor's affiliation to the Big 4 ($\alpha_{BIG4} = 0.013$), the dimension of the DAC being bigger in the case where the auditor belongs to the Big 4 group.

SIZE and ROA of the audited firms have a positive influence on the quality of the audit, by the decrease in the DAC, with large and profitable companies having superior expertise in financial-accounting activity and financial resources available for its organization. Large companies are sensitive to the image created in the financial market, giving special importance to the implementation of accounting treatments and preparation of financial statements. From the perspective of the relationship with the auditor, large companies are also receptive to their recommendations, having specialized departments (such as internal audits) that facilitate the increase in audit quality.

On the other hand, the growth of firms has a negative influence on audit quality, probably because of the association of such growth with some techniques of manipulation of the accounting numbers. Accounting standards and leverage have no influence on the level of DAC.

Table 5. Influence of the Big 4 membership and of the characteristics of the audited companies on the DAC.

x 1 1 (X) 11		Dependent V	ariable—DAC	
Independent Variable	1	2	3	4
Constant	0.067	0.127	0.158	0.158
Constant	(0.000)	(0.000)	(0.000)	(0.000)
BIG4 t	0.004		0.013	0.013
DIG4 t	(0.371)		(0.016)	(0.016)
SIZE		-0.003	-0.005	-0.005
SIZE		(0.033)	(0.002)	(0.002)
FL		-0.005	-0.004	-0.002
ГL		(0.341)	(0.233)	(0.301)
ROA		-0.062	-0.066	-0.064
KOA		(0.038)	(0.027)	(0.033)
SalesGr		0.021	0.021	0.021
SalesGr		(0.013)	(0.014)	(0.014)
IFRS				0.004
II'KS				(0.309)
N	941	936	935	934
\mathbb{R}^2	0.003	0.014	0.020	0.021
Sig F change	0.371	0.010	0.002	0.003

Note: The values of significance coefficients are presented between parentheses, with the study considering a 5% risk. Source: Own processing.

In Table 6, we present the results obtained after having tested the correspondences between audit quality (measured by the size of the DAC) and the audit opinion for the previous year, taking into account the characteristics of the firms audited. A significant and positive influence of the audit opinion on the dimension of the DCAs is observed. As a result, a modified opinion for the previous year contributes to an increase in the audit quality. The direction of the influences of the variables specific to the firms audited is the same as in the relation that involves the type of auditor. The size and profitability of the firm have a positive effect on audit quality, while the sales growth can incorporate manipulative actions that contribute to the increase of the DAC. Leverage and the accounting standards applied does not exert significant influence.

Table 7 captures the variation in the quality of accruals, as proxies of audit quality, under the influence of the same mix of factors. Measured through the standard deviation of the residual, the quality of the audit is influenced by the independent variables ($Std.Dev._{model1.2} > Std.D ev._{model3.-5}$). A significant influence exerted by the independent

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variables' characteristics of the audited firms was identified, except for FL, which does not correlate its evolution with the audit quality (a situation similar to previous analyses). The auditor's membership of a particular group (Big 4 or non-Big 4) does not change the quality of the accruals. IFRS use also leads to a superior quality of audit.

Table 6. Influence of the audit opinion and of the characteristics of the audited companies on the DAC.

x 1 1 (xx 111		Dependant V	ariable—DAC	
Independent Variables	1	2	3	4
Constant	0.051	0.127	0.111	0.112
Constant	(0.000)	(0.000)	(0.000)	(0.000)
OP	0.029		0.014	0.013
OI	(0.004)		(0.001)	(0.001)
SIZE		-0.003	-0.003	-0.003
SIZE		(0.033)	(0.029)	(0.026)
FL		-0.005	-0.002	-0.002
r.L		(0.341)	(0.348)	(0.390)
ROA		-0.062	-0.039	-0.038
KOA		(0.038)	(0.042)	(0.011)
SalesGr		0.021	0.020	0.020
SalesGi		(0.013)	(0.020)	(0.020)
IFRS				0.002
II'KS				(0.586)
N	941	936	935	934
R ²	0.009	0.014	0.027	0.027
Sig F change	0.004	0.010	0.000	0.000

Note: The values of significance coefficients are presented between parentheses, with the study considering a 5% risk. Source: Own processing.

Table 7. Impact of the Big 4 membership and of the characteristics of the audited companies on the AQ.

T 1 1 (37) 11	Dependent Variable—TCA						
Independent Variables –	1	2	3	4	5		
Constant	-0.005	-0.007	0.028	0.035	0.035		
Constant	(0.033)	(0.052)	(0.009)	(0.003)	(0.004)		
CFO_{t-1}	0.142	0.138	0.002	0.001	0.001		
CrO_{t-1}	(0.000)	(0.000)	(0.474)	(0.428)	(0.498)		
CFO _t	-0.616	-0.618	-0.877	-0.877	-0.877		
CrO _t	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
CFO _{t+1}	0.192	0.190	-0.018	-0.018	-0.017		
CrO (+1	(0.000)	(0.000)	(0.135)	(0.143)	(0.173)		
BIG4		0.007		0.003	0.003		
DIGT		(0.164)		(0.180)	(0.166)		
SIZE			-0.002	-0.002	-0.002		
SIZE			(0.004)	(0.001)	(0.001)		
FL			0.001	0.001	0.001		
I.F.			(0.247)	(0.305)	(0.227)		
ROA			0.986	0.986	0.986		
KOA			(0.000)	(0.000)	(0.000)		
SalesGr			-0.003	-0.006	-0.007		
SalesGi			(0.059)	(0.054)	(0.048)		
IFRS					0.003		
II KS					(0.074)		
Std. dev. error	0.0674	0.0673	0.0234	0.0234	0.0234		
N	754	753	750	749	748		
R ²	0.310	0.312	0.916	0.917	0.917		
Sig F change	0.000	0.000	0.000	0.000	0.000		

Note: The values of significance coefficients are presented between parentheses, with the study considering a 5% risk. Source: Own processing.

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The quality of the audit, measured by the quality of the accruals, is significantly influenced by the audit opinion (according to the data presented in Table 8) (Std.Dev. $_{model-2}$ < Std.Dev. $_{model-1}$ and the regression coefficient α is statistically significant).

The quality of the accruals is increased in the case of the concurrent action of the audit opinion and the characteristics of the audited company (Std.Dev $_{\rm model}$ -3,-5 < Std.Dev. $_{\rm model}$ -1,2). The coercive nature of a modified opinion, expressed for the previous financial year, is confirmed once again. In this case, the financial leverage and accounting standards applied do not exert a significant influence.

Table 8. Impact of the audit opinion and of the characteristics of the audited companies on the AQ.

T 1 1 (X7 * 11		Dep	endent Variable—7	CCA	
Independent Variables -	1	2	3	4	5
Constant	-0.005	0.025	0.028	0.035	0.034
Constant	(0.033)	(0.002)	(0.009)	(0.000)	(0.003)
CEO	0.142	0.128	0.002	-0.001	-0.001
CFO_{t-1}	(0.000)	(0.000)	(0.674)	(0.720)	(0.742)
CFO t	-0.616	-0.630	-0.877	-0.879	-0.879
Cro t	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CFO _{t+1}	0.192	0.187	-0.018	-0.019	-0.018
CrO _{t+1}	(0.000)	(0.000)	(0.035)	(0.026)	(0.049)
OP		-0.022		-0.005	-0.005
Or		(0.000)		(0.013)	(0.020)
SIZE			-0.002	-0.002	-0.002
SIZE			(0.004)	(0.004)	(0.003)
LF			0.001	0.001	0.002
LF			(0.247)	(0.199)	(0.152)
ROA			0.986	0.982	0.983
KOA			(0.000)	(0.000)	(0.000)
SalesGr			-0.006	-0.006	-0.006
SalesGr			(0.059)	(0.056)	(0.051)
IFRS					0.003
IFNS					(0.129)
Std dev. error	0.0674	0.0660	0.0234	0.0233	0.0233
N	754	753	750	749	748
R ²	0.310	0.324	0.916	0.917	0.917
Sig F change	0.000	0.000	0.000	0.000	0.000

Note: The values of significance coefficients are presented between parentheses, with the study considering a 5% risk. Source: Own processing.

In order to test the robustness of the identified causal relationships, a series of sensitivity analyses was performed. These followed the existence of the sequential dependencies determined by the opinion expressed for the previous financial year, depending on the auditor's category (Big 4 vs. non-Big 4), the applied accounting standards, and the level of profitability registered by the audited company.

According to the results summarized in Table 9, an unmodified opinion expressed by a Big 4 member auditor determines an increase in DAC and a decrease in audit quality. The meaning of the relationship is maintained by the introduction of ROA, noting that, especially in the case of profitable companies audited by Big 4 member companies, the unmodified opinion expressed for the previous financial year leads to a decrease in audit quality. However, the opinion expressed by members of the Big 4, during the period of application of IFRS, determines a decrease in DAC ($\alpha_{BIG4*OP*IFRS} = -0.021$; -0.024), a situation that may reflect a superior capacity for interpretation of international standards by large audit firms.

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Table 9. Sensitivity analysis regarding the influence exerted by the independent variables on the DAC level.

x 1 1 (x7 ' 11		Dep	endant Variable—[DAC	
Independent Variables –	1	2	3	4	5
Constant	0.050	0.047	0.150	0.154	0.152
Constant	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
BIG4	0.004	-0.014	-0.008	-0.008	-0.006
DIG4	(0.371)	(0.050)	(0.317)	(0.321)	(0.396)
OP	0.015	0.018	0.017	0.018	0.015
Of	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
$BIG4 \times OP$		0.028	0.047	0.026	0.039
biG4∧ Oi		(0.001)	(0.000)	(0.004)	(0.001)
BIG4× OP×IFRS			-0.021		-0.024
DIG4× OI ×II KS			(0.043)		(0.038)
$BIG4 \times OP \times ROA$				0.101	0.170
big4∧ oi ∧koa				(0.021)	(0.019)
SIZE			-0.005	-0.006	-0.006
SIZE			(0.001)	(0.000)	(0.000)
FL			-0.001	-0.001	-0.094
r _L			(0.749)	(0.875)	(0.973)
ROA			-0.047		-0.080
KOA			(0.121)		(0.017)
SalesGr			0.019	0.015	0.019
SalesGi			(0.024)	(0.074)	(0.025)
IFRS				0.001	0.004
II'K3				(0.956)	(0.383)
N	940	939	932	932	930
R ²	0.016	0.028	0.051	0.047	0.057
Sig F change	0.000	0.000	0.000	0.000	0.000

Note: The values of significance coefficients are presented between parentheses, with the study considering a 5% risk. Source: Own processing.

From the perspective of the accruals quality, the results noted in Table 10 confirm the previous conclusions. Thus, the audit opinion expressed by a certain category of auditors (SIG $_{BIG4^*OP} = 0.293$) and the specifics of the accounting standards used (SIG $_{BIG4^*OP^*IFRS} = 0.229$; 0.460) do not exert significant influences on audit quality. Only in the case of profitable companies, the opinion expressed by a Big 4 auditor leads to an increase in the accrual's quality (Std.Dev. $_{model-4,5} <$ Std.Dev. $_{model-1}$).

Table 10. Sensitivity analysis of the influence of independent factors on the quality of accruals.

Indones dent Veriebles	Dependent Variable—TCA						
Independent Variables –	1	2	3	4	5		
Camatant	0.023	0.027	0.043	0.072	0.041		
Constant	(0.005)	(0.003)	(0.001)	(0.025)	(0.001)		
CEO	0.123	0.124	-0.002	0.118	-0.001		
CFO _{t-1}	(0.000)	(0.000)	(0.891)	(0.000)	(0.920)		
CEO	-0.632	-0.631	-0.879	-0.676	-0.879		
CFO _t	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
CEO	0.184	0.186	-0.018	0.146	-0.017		
CFO _{t+1}	(0.000)	(0.000)	(0.142)	(0.000)	(0.165)		
RIC4	0.008	0.017	0.003	0.012	0.003		
BIG4	(0.139)	(0.093)	(0.351)	(0.190)	(0.339)		
OP	-0.022	-0.025	-0.005	-0.025	-0.005		
OP	(0.000)	(0.000)	(0.028)	(0.000)	(0.046)		

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Table 10. Cont.

T 1 1 (X7 * 11		Dep	endent Variable—7	TCA	
Independent Variables –	1	2	3	4	5
PIC4× OP		-0.012	-0.004	-0.038	-0.001
$BIG4 \times OP$		(0.293)	(0.414)	(0.001)	(0.575)
BIG4× OP×IFRS			0.005		0.002
big4× Or ×ifk3			(0.229)		(0.460)
$BIG4 \times OP \times ROA$				0.695	0.033
big4∧ oi ∧koa				(0.000)	(0.055)
SIZE			-0.002	-0.003	-0.002
SIZE			(0.001)	(0.037)	(0.001)
LF			0.001	0.008	0.001
LF			(0.279)	(0.118)	(0.266)
ROA			0.982		0.989
KOA			(0.000)		(0.000)
SalesGr			-0.007	0.046	-0.007
SalesGi			(0.048)	(0.000)	(0.047)
IFRS				0.002	0.002
IFKS				(0.750)	(0.260)
Std. dev. error	0.0667	0.0666	0.0233	0.0606	0.0233
N	752	751	746	746	744
R ²	0.326	0.327	0.917	0.442	0.918
Sig F change	0.000	0.000	0.000	0.000	0.000

Note: The values of significance coefficients are presented between parentheses, with the study considering a 5% risk. Source: Own processing.

5. Conclusions

The purpose of this paper is to highlight how audit quality is influenced by variables specific to audit firms, on the one hand, and by variables specific to the firms audited, on the other. We analysed companies listed on the Romanian financial market, which allowed us to obtain data on a little more than 900 observations, for a period of 13 years, from 2007 (year of accession of Romania to the EU) to 2019.

Among the proxies presented in the literature and used to measure audit quality, we have chosen the level of discretionary accruals and accruals quality. These dependent variables have been linked to variables such as the category of auditor, the audit opinion, and certain financial characteristics of the firms audited (size, leverage, and accounting standards applied). The Jones model [54] for the estimation of DAC and Dechow and Dichev model [52] for measuring the AQ are well known in the literature and we tried to apply them as such in the case of Romanian listed companies.

There are authors who warn us that audit quality is not necessarily measurable in the same way in all contexts. Most studies analyse the Western financial markets and Romania is an emerging country with a recent financial market: in this context, we have not made any assumptions about the sense of the influence of the independent variables on the dependent variable. However, the role of auditing in increasing the quality of financial information reported by companies can be interpreted similarly, regardless of the maturity of the financial market. The easy access to the information published by the companies listed on the international markets determines an increase in the specific requirements of the investors at BSE. From this perspective, audit quality can be influenced by the same categories of factors, the behaviour of the audited companies, and auditors being focused on the common objective—that of efficient investor information.

Our results show that the auditors' Big 4 membership contributes to an increasing DAC; i.e., a decrease in audit quality. There is a positive effect on audit quality, in the sense of a decrease in DACs, in the case of big companies and the profitable ones. When we take into account the growth of firms, we find that a higher growth rate leads to more

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DAC, and therefore to a decrease in the audit quality. Romanian firms have been obliged to apply IFRS in their individual accounts since 2012. The transition to IFRS could have been expected to have a significant impact on DCA: this is not the case, according to the results of our model. The audit opinion may have an effect on the DACs and the AQ in the sense that a modified opinion leads to an increase in audit quality in the following financial years.

The limitations of our study consist of the low size of the population analysed, and we have not taken into account the explanations provided by the auditors in the justification of the modified opinions or in the emphasis of matters paragraph. All these limitations can be seen as a future direction to address in such research. To these directions we can also add a more in-depth analysis of the situation of firms that have received a modified opinion, by identifying the reasons given by the auditors to justify these modified opinions.

To the extent that the firms analysed in this study will publish sustainability reports, one way to complete the research may be by following the model established by Al-Shaer [57]—to verify the correlation between the quality of the sustainability reports and the quality of the financial reporting, measured by the degree of earnings management detected in the case of reporting companies.

It is expected that, in some cases, the company's management and the auditor will not always agree on the chances of survival of the company, when it has major financial or other difficulties. The optimism of the management is opposed to the professional scepticism of the auditor. In this context, it is necessary to analyse the connection between the possible ongoing concern and opinion of the auditor, on the one hand, and the future evolution of the company. This correlation is all the more important as the current health crisis has generated, for a number of companies, difficulties that were not predictable, on the occasion of the closing works of 2019—the last financial year we analysed. Thus, the information reported in the financial statements for 2020 (but also for 2021, at least), in the case of companies in the industries most affected by the pandemic, can confirm the resilience of those companies, in an environment that has proved completely unpredictable and can confirm whether their previous efforts in the direction of sustainability (financial, but also sustainability in general) have allowed them to overcome the crisis more easily. Pre-crisis audit opinions could also be correlated—whether the opinion was modified or unmodified—with the way each firm resists crises. It remains to be seen to what extent companies, but also financial auditors, have learned from the crisis, lessons about resilience, survival, sustainability, and ongoing concern. Financial audit reports can also be exploited in the sense suggested by Dal Maso et al. [58], who found a positive link between the presence in the financial audit report of an ongoing concern opinion and the fact that the auditor of the financial statements and the auditor of the sustainability reports are the same.

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