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The Influence of Audit Opinion on the Degree of Real Earnings Management.

The Case of Romanian Listed Companies

Lecturer Mihai CARP, Ph. D.,
"Alexandru Ioan Cuza" University of Iaşi, Romania,
e-mail: mihai.carp@feaa.uaic.ro

Univ. Prof. Iuliana Eugenia GEORGESCU, Ph. D.,
"Alexandru Ioan Cuza" University of Iaşi, Romania,
e-mail: iuliag@uaic.ro

Abstract

The quality of financial information is a decisive landmark in the decision-making process of all users. This is why meeting the quality criteria should be a desideratum for all the stakeholders involved in the development and verifying of financial reports. In this context, this paper aims to analyze the influence exercised by the audit opinion on the quality of the financial information reported by Romanian companies listed on the regulated market of the Bucharest Stock Exchange.

Quality is assessed in terms of the degree of manipulation of operational activities (intervention in the conduct of commercial transactions and controlling the cost of the goods sold via overproduction, respectively). The analyzed data cover a time frame of 6 financial years (2012-2017), and the dependency relations are also tested by introducing control variables such as: company size, indebtedness, profitability and reputation of the auditor.

The results obtained highlight the contribution of the audit opinion to boosting the quality of financial information, measured based on the degree of manipulation of sales (under the aspect of value and the time when the transactions were made). In case of manipulation via overproduction, the audit opinion does not exercise significant influences, reflecting possible limitations of the audit endeavor in terms of its capacity to identify corrupt activities associated with production. The auditor's reputation does not have a significant impact on the manipulation of sales, only in overproduction case this characteristic having a positive role.

Keywords: *quality of financial information, real earnings management, the audit opinion*

JEL Classification: *M410, M420*

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Introduction

Earnings management is a widely debated topic in the international literature, owing to the significant impact this phenomenon can generate on the quality of financial information and on the users' decisions, respectively.

Altering the quality of financial information is primarily carried out by manipulating accruals and by manipulating the operational activity (Kiattikulwattana, 2014). This phenomenon is generated both by motivations that reflect organizational objectives for the purpose of presenting a high-performance activity at various times (stock exchange listing, accessing certain loans, etc.), and by the managers' personal motivations, when they are compensated based on the results they achieve.

Manipulating the operational activity, phenomenon known as real earnings management (REM), can be achieved via interventions in the goods retailing process (sales manipulation), controlling production costs (overproduction) and modification of the conditions for identifying discretionary expenses, particularly those related to research and development (Ge and Kim, 2014; Chouaibi, Zouari and Khlifi, 2019). Although frequently encountered in practice, REM is less researched in the specialty literature (Li, 2019) also due to the difficulties in identifying specific actions, even by auditors (Sun, Lan and Liu, 2014).

Our paper assesses the degree to which manipulation of the operational activity measured by sales manipulation and overproduction is present in the Romanian companies listed on the primary market of the Bucharest Stock Exchange. Using the models proposed by Roychowdhury (2006), we estimated the level of REM in the context of the influence of the financial reports' auditing process and the respective impact of the audit opinion thus expressed and, by extension, the auditor's reputation (BIG4 or Non-BIG4).

The results we obtained identify the use of operational activities' manipulation actions by listed Romanian companies, a phenomenon influenced positively (meaning by its reduction) by the characteristics of the audit process. The contribution of the audit opinion, expressed for the previous financial year, in increasing the quality of financial information stands out in the case of measuring the REM based on the degree of sales' manipulation. In case of manipulation by overproduction, the audit opinion has no significant influences, reflecting the potential limitations of the audit endeavor in terms of the capacity to identify corrupt activities associated with production. Affiliation with the BIG4 does not have a significant impact on sales' manipulation, only in overproduction case this characteristic having a positive role, due to the ownership of expertise and procedures that are deemed superior.

The study helps cover a gap in the specialty literature, being one of the first on the topic of REM in a Romanian context. The majority of studies on the topic of earnings' manipulation discuss the topic from the perspective of accruals' manipulation (Gajevszky, 2014; Brad *et al.,* 2014, Istrate *et al.,* 2015) or via alternative methods, such as Benford Law (Istrate, 2019).

The content of this paper is structured as follows: specialty literature review and substantiation of the research hypotheses (section 1), presenting the research endeavor by highlighting the analyzed population, the variables involved in the study and the data analysis methods (section 2), presenting and interpreting the results (section 3) and synthesizing the conclusions of the study (final section).

1. Literature review and substantiation of the research hypotheses

The reporting of quality financial information should be the main goal of the endeavor to have the accounting reflect the events and transactions specific of the economic entity, respectively in preparing the financial reports.

1.1. Real earnings management: forms of manifestation and generated effects

Under the influence of certain individual or organizational objectives, managers can manage earnings, thus determining an alteration in the quality of the accounting information. The motivations underlying the earnings management cover a wide spectrum, from the necessity to fulfill some projections (McVay, 2006), meeting certain levels in the value of shares (Haw, Ho and Li, 2011), in preparing a new issuance of bonds (Ibrahim, Xu and Rogers, 2011) or for managers to obtain additional bonuses (Moradi, Salehi and Zamanirad, 2015).

Earnings management is achieved via the managers' interventions in the process of financial reporting and in the transactions' organization process, which generates the alteration of published information and the misleading of users, respectively, all for the purpose of modifying the reported level of economic performance or of the size of contractual benefits that are dependent on the reported accounting data (Healy and Wahlen, 1999). The primary means of earnings' management are the accruals earnings management (*AEM*), real earnings management (*REM*) and modifications in recognizing the structures of financial reports (*Classification Shifting – CF*) (Abernathy, Beyer and Rapley, 2014). Changing the classification of expenses and income elements is a subtle tool for manipulating the result that does not modify the net achieved result. However, elements of the operating result can be reclassified in structures with a lower relevance in the analysis of performance, thus allowing control on the efficiency of operational the activity (Alfonso, Cheng and Pan, 2015).

With significant effects on the quality of the financial information and on its users, manipulation of accruals and manipulation of operational activities (real earnings management) differentiate function of the economic effect they generate and the cash-flow changes, respectively (Kiattikulwattana, 2014; Inaam and Khamoussi, 2016).

Accruals earnings management is based on the professional judgment (accounting choices) materialized in the choice of certain accounting methods or the performance of certain estimates, actions that do not have direct consequences on cash-flows (Sun, Lan and Liu, 2014).

Alternatively, any intervention of the managers in the normal course of the operational activity can ultimately determine the manipulation of earnings for their own purposes, with effects on the cash-flow. To reach the desired level of performance, decision-makers can change the moment when certain transactions are recognized in the accounting or can modify the structure of an operating process (Zang, 2012). Thus, the real earnings management entails the use of specific techniques, primarily in three directions: *controlling the time when sales are made* (particularly in bringing it forward), by granting commercial discounts or relaxed payment terms; *overproduction*, for diminishing the unit costs of production (due to the reduction of fixed unit costs); and by *manipulation of research and development expenses* (Ge and Kim, 2014; Kuo, Ning and Song, 2014; Chouaibi, Zouari and Khlifi, 2019). Managers frequently manipulate the operational activity to avoid annual losses (Roychowdhury, 2006).

Real earnings management determines a reduction in the future performance of the company (Pappas, Walsh and Xu, 2019), which can motivate managers to manipulate accruals for the purpose of keeping the bonuses correlated with the level of achieved results (Moradi, Salehi and Zamanirad, 2015). From this perspective, we can state that the real earnings management (REM) is used by managers opportunistically, rather for their own interests than for the benefit of shareholders (Baatour, Ben Othman and Hussainey, 2017). The granting of oversized commercial discounts can increase the volume of sales, but erodes the operational margin, reducing the profitability. Over the upcoming period, the necessity to return to normal pricing levels can cause a loss in the market share and implicitly a decrease in the operational activity.

The agency theory mentions the existence of a conflict between investors and managers regarding the full access to company specific information, as current or potential owners are interested by the quality of the information they receive, based on which they substantiate their decision-making process. The involvement of entities in litigations causes shareholders to worry about the potential manipulation of earnings using accruals. If accounting evidence is used in legal disputes, the users' attention is focused towards the possibility of manipulation of operational activities (Ibrahim, Xu and Rogers, 2011).

In the same context of managers' opportunistic behavior, the involvement of board members in several teams that coordinate the entities' activity determines a boost in terms of REM, due to the diminishing of their capacity to monitor the company's activity (Baatour, Ben Othman and Hussainey, 2017). Also, stock exchange listing can influence how entities present financial information, due to the pressure exercised by exposure on a public market. The degree of real earnings management is higher in the case of unlisted (private) companies compared to public ones. The manner of altering the quality of information also differs, given the different possibility to identify these actions, with unlisted companies mainly using transaction manipulation, while interventions in listed entities refer to overproduction (Al-Amri *et al.*, 2017).

This behavior that fundamentally violates the principles of business ethics can precede fraud. Analyzing this aspect in a Malaysian context, Md Nasir *et al.* (2018) identified the presence of real earnings management over the last couple of years before the perpetration of fraud.

Determined by strong motivations, the earnings' management phenomenon remains indifferent to efforts towards constantly adapting and improving accounting regulations. Thus, REM is deemed a consequence of rule-based accounting standards, while AEM is used in the context of principle-based standards. From the perspective of consequences, REM has negative effects on a longer term than AEM, leading to the idea of superiority of principle-based regulations (Sundvik, 2019). Introducing certain reports on the managers' responsibility for the quality of financial reports had no effect.

Although forming the majority, conclusions on the negative effect of real earnings management are counterbalanced by a series of ideas according to which the direct classification of certain actions as REM should be avoided (Pacheco Paredes and Wheatley, 2017). Consequently, an in-depth analysis should be conducted on generating factors, so as not to get efficient business activities confused with manipulatory practices.

1.2. The role of audit in reducing financial information manipulation

The auditing of financial reports by independent specialists aims to boost the level of assurance for users that the reported accounting figures show an accurate picture of the activities of economic entities (Toma, 2012). Shareholders deem audited information as more trustworthy (Haga, Höglund and Sundvik, 2018).

The relation between audit and earnings management was widely researched as there are expectations that the auditing process be a restraint for the management, ultimately leading to the improvement of the quality of financial information (Huguet and Gandía, 2016).

The quality of an audit lies in the auditors' capacity to detect and report breaches in the accounting and reporting system of client companies (DeAngelo, 1981), representing an important factor influencing the investment decisions of external users (Alhadab and Clacher, 2018).

The quality of audit services, appreciated by auditor rotation, specialization on fields of activity or size of the audit company, helps reduce the earnings management (Alzoubi, 2018). This is also ensured by the independence of the audit committee and the auditor, elements that lead to a reduction in the problems generated by the agent-client relation between managers and shareholders (Inaam and Khamoussi, 2016).

Real earnings management is more difficult to identify by auditors (Huang and Sun, 2017) compared to the accruals earnings management, as it is carried out via economic actions (Manowan and Lin, 2013), which requires a high level of qualification in the auditor. The difficulty in detecting REM is justified by the fact that generating activities are not subject to monitoring by auditors or regulatory bodies (Ge and Kim, 2014). Kim and Sohn (2013) state that REM is not the auditor's primary responsibility. Managers are tempted to waive manipulation of accruals in order to manipulate operational activities, as the latter are less constrained by the mechanisms of corporate governance, such as independence of the board of directors or the external auditors (Sun and Liu, 2016). However, auditors are concerned with the manipulation of operational activity, a measure for reducing the degree of earnings management being their specialization by industries (Haga, Höglund and Sundvik, 2018).

1.3. Developing the research hypotheses

Although researched to a lesser extent compared to manipulation of accruals, the relation between the level of manipulation and the quality of the audit (measured by different attributes thereof) is an increasingly significant preoccupation in the specialty literature.

Thus, Chi, Lisic and Pevzner (2011) state that auditors specialized by industries, the size and reputation of the auditor (Big4), and the audit fee level, respectively, are associated with a high level of real earnings management, and in our opinion, reflecting the possibility to identify generating activities based on the audit. Alhadab (2018) notes that a superior level of the audit fee determines a decrease in REM, appreciated via the level of production costs and discretionary expenses.

The duration of the audit contract is identified by Jennifer Ho, Liu and Schaefer (2010) as an indicator of audit quality, its increase being directly correlated to the level of earnings management. Alves (2013) states that a decrease in the level of earnings management is also generated by the conjugated action of the audit

committee and the auditors. On the other hand, the presence of the members of the audit committee in several teams leads to an increase in REM, as a result of a decrease in the efficiency of the monitoring activity (Sun, Lan and Liu, 2014).

In the context of companies with a risk of insolvency, Xu, Dao and Wu (2018) note that the existence of real earnings management has a positive influence on the issuance of an opinion without modifications in regards to the continuity of activity, with effect on the auditor's prudence.

The reputation of the audit company (Big4/Non-Big4) has an impact on financial information predictability. In the case of financial reports audited by Big4 companies, the data has a higher-level quality (Hussainey, 2009). Although they recognize that Big4 auditors have superior expertise and technologies compared to Non-Big4 companies, Alhadab and Clacher (2018) note that they offer a limited insurance in detecting and reducing earnings management. In their study on UK companies, the authors identify – in the case of companies audited by Big4 members – a reduction of earnings management via accruals and discretionary expenses, yet highlighting the presence of sales' manipulation, particularly around the date of a new stock issuance.

In opposition with these results, El-Helaly, Georgiou and Lowe (2018) state that in the case of Greek companies that operate intra-group transactions, the level of real earnings management is not influenced by the auditors' reputation, estimated by their Big4 or Non-Big4 status.

The audit opinion expressed is a landmark in appreciating the degree of conformity with the rules of the financial reports' development process. Owing to the significant exposure on the quality of financial results, the audit opinion can be a means of coercion for the process of earnings management. Aljinovic Barac, Vuko and Šodan (2017) note that 29% of the opinions expressed in the case of Croatian companies underscore the presence of earnings management primarily for the purpose of concealing the lack of performance from investors, lenders or the authorities. Unlike these conclusions, in a Greek context, Tsipouridou and Spathis (2014) do not identify an influence of the audit opinion on the level of earnings management, thus highlighting differences in this phenomenon across economic areas or study methodologies. Thus, this validates the utility of such research that can make an in-depth analysis of the relation between the audit and the quality of financial information.

Starting from the elements identified in the literature, we set out to test the following research hypotheses for the Romanian business environment:

***H1**: The audit opinion significantly influences the degree of sales' manipulation.*

***H2**: The audit opinion significantly influences the level of manipulation in the total costs of the goods produced.*

2. Methodology

The research endeavor focuses on estimating the extent to which the audit opinion influences the quality of reported financial information, expressed in its turn by the degree of manipulation of the operational activity (real earnings management). The connection is also analyzed from the perspective of the auditor reputation, with auditors being grouped in two categories (BIG4 and non-BIG4), a procedure established in the specialty literature.

2.1. Data and sample

The study was conducted using information specific of the companies listed on the regulated market of the Bucharest Stock Exchange (BSE). The sample was set out by excluding entities which have as operational activities the financial intermediation. The financial information was manually collected from the annual reports published by the companies on the BSE website and cover a time interval of 6 financial years (2012-2017). Thus, the 69 selected companies offered the possibility to obtain a series of data comprised of 414 individual observations. To eliminate extreme values, we used the method proposed by Hoaglin and Iglewicz (1987), which entails their replacement with the closest value in the series of data.

2.2. Variables and data analysis methods

The analysis of real earnings management, in the context of conducting the audit-based quality assurance process, requires the use of specific indicators, detailed in **Table no. 1**.

Table no. 1. Variables used in the study

Abbreviation	Name	Description
OCF	Operating cash-flow	Cash flow resulting from the operating activity
Sales	Turnover	Income from the sale of merchandise and the production sold minus the value of granted discounts
ΔSales	Turnover variation	Turnover $_{i,t}$ – Turnover $_{i,t-1}$
TC	Total cost	Operating expenses minus the expenses related to the depreciation of fixed and current assets, expenses related to provisions and expenses for other taxes.
SIZE	Size	Logarithm of total asset
FL	Financial leverage	Total debts/equity
ROA	Return on assets	Operating result/total assets
OP	Opinion	Dummy variable, taking the value 1 for opinion issued without modification and 0 otherwise.
BIG4	Auditor category	Dummy variable, taking the value 1 if the auditor is a Big4 company and 0 otherwise.

Source: Processing done by the authors, 2019

In correspondence with the motivations and means of altering the quality of financial information, by manipulating the operational activity, numerous econometric models were developed in the specialized literature in an attempt to effectively measure the intensity of the aforementioned phenomenon. Thus, the model used by Dechow, Kothari and Watts (1998) and Roychowdhury (2006), presented in equation no. 1, correlates the operating cash-flow with the result of the commercial activity (sales). In order to manipulate earnings, manager modify the sales' conditions at the end of the financial year by granting discounts or extended payment terms, for the purpose of boosting the current result, even though the activity has a low efficiency (by decreasing the commercial margin).

$$\frac{CFO_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \frac{Sales_t}{A_{t-1}} + \alpha_3 \frac{\Delta Sales_t}{A_{t-1}} + \varepsilon_t \quad (1)$$

where *OCF* is the operating cash-flow in the year t, *Sales* is the turnover in the year t; *ΔSales* is the change of the turnover in the year t compared to the year t-1, $\alpha_{0,,,3}$ regression coefficients, ε error term, A_{t-1} total asset in the year t-1. All the variables were denominated by the value of the total asset in the previous year. An increasing coefficient of determination (R^2) shows a decrease in sales' manipulation.

The manipulation of the costs of produced goods is another means of altering the quality of financial information and is achieved via overproduction. Receiving a quantity of goods exceeding the entity's distribution capacity generates a smaller unit price (due to the decrease in the fixed unit price), which leads to a higher operating margin, but creates extra additional costs. This aspect of real earnings management can be assessed via the model in equation no. 2.

$$\frac{TC_t}{A_{t-1}} = \beta_0 + \beta_1 \frac{1}{A_{t-1}} + \beta_2 \frac{Sales_t}{A_{t-1}} + \beta_3 \frac{\Delta Sales_t}{A_{t-1}} + \beta_4 \frac{\Delta Sales_{t-1}}{A_{t-1}} + \varepsilon_t \quad (2)$$

where *TC* is the total cost of the goods produced in the year t; $\beta_{0,,,3}$ regression coefficients. One growing dimension of the residual component reflects an increase in earnings management via overproduction.

The models in equations no. 3 and 4 were proposed for the purpose of assessing the influence of the audit opinion on the degree of real earnings management.

$$OCF_t = \beta_0 + \beta_1 1/A_{t-1} + \beta_2 Sales_t + \beta_3 \Delta Sales_t + \beta_4 Firm\_NIV_t + \beta_5 Lag_{OP_{t-1}} + \beta_6 BIG4_t + \beta_7 Lag\_OPxBIG4_t + \varepsilon_t \quad (3)$$

$$TC_t = \beta_0 + \beta_1 \frac{1}{A_{t-1}} + \beta_2 Sales_t + \beta_3 \Delta Sales_t + \beta_4 \Delta Sales_{t-1} + \beta_5 Firm\_NIV_t + \beta_6 Lag\_OP_{t-1} + \beta_7 BIG4_t + \beta_8 Lag\_OPxBIG4_t + \varepsilon_t \quad (4)$$

Lag_OP is the audit opinion expressed for the previous financial year, and *Firm_Niv* expresses the influence of introduced control variables, namely FL, ROA and Size. *Lag_OP*BIG4* represents a sensitivity indicator of the audit opinion function of the issuer's reputation. The control variables introduced are meant to validate the deterministic relationship when there are some factors with a potential influence on the analyzed phenomenon.

3. Results and interpretation

The descriptive statistics presented in **Table no. 2** characterize the general economic conditions in which he analyzed phenomenon manifests. The analysis was carried out across the entire sample, as well as by breaking it down into two sub-samples function of the effective application of accounting standards in line with the IFRS (*International Financial Reporting Standards*). The 2012-2013 period was deemed the "initiation" interval in the application of international accounting standards (with possible implications on the quality of financial information), due to the limited time for adjusting to the new regulations, and the 2014-2017 period is associated with a due application of IFRS.

The analysis of indicators involved in the study reveals a series of differences of the values function of the indicated time intervals. Thus, the total cost of sold goods (TC), reported to the total assets in the previous year, registers high values in "initiating" period for IFRS application (Mean = 0.189), compared to the 2014-2017 period (Mean = 0.151), which could mean a series of difficulties in the application of the new accounting standards (in the first period), inefficiency in the operational activity or even the presence of earnings management via overproduction.

Table no. 2. Descriptive statistics

Elements	No. obs.	Total sample			2012-2013 Initiation – IFRS			2014-2017 Conformity – IFRS		
	N	Mean	Std. dev.	Median	Mean	Std. dev.	Median	Mean	Std. dev.	Median
TC	414	0.167	0.360	0.023	0.189	0.377	0.022	0.151	0.348	0.025
OCF	414	0.046	0.078	0.032	0.040	0.075	0.032	0.050	0.080	0.031
Sales	414	0.637	0.477	0.541	0.617	0.530	0.534	0.668	0.439	0.542
ΔSales	414	0.001	0.129	0.006	-0.011	0.126	0.000	0.010	0.130	0.010
ROA	414	0.021	0.079	0.023	0.012	0.083	0.016	0.028	0.075	0.028
FL	414	0.660	0.754	0.351	0.744	0.816	0.403	0.603	0.705	0.319
Size	414	18.17	1.583	18.90	19.12	1.549	18.88	19.21	1.609	18.94

Source: Processing done by the authors, 2019

However, the 2012-2013 period can be seen as an economic recovery interval after the 2008-2009 financial crisis. The statement is also supported by the evolution of certain indicators, such as OCF and Sales, which in the first period have values below those registered in the 2014-2017 interval ($OCF_{mean\ 2014-2017} = 0.050 > OCF_{mean\ 2012-2013} = 0.040$; $Sales_{mean\ 2014-2017} = 0.668 > Sales_{mean\ 2012-2013} = 0.617$). The variation of the turnover also confirms the ensuing conclusions, being negative in the first period (ΔSales= -0.011) and positive in the 2014-2017 period (ΔSales= 0.010).

Also, over the last period we see an increase in the activity performance ($ROA_{mean\ 2014-2017} = 0.028 > ROA_{mean\ 2012-2013} = 0.012$), facilitated by a decrease in debt ($FL_{mean\ 2014-2017} = 0.603 < FL_{mean\ 2012-2013} = 0.744$). This evolution led to the increase in the dimension of entities (estimated via the total assets) generated by the reinvestment of profits into their own activity.

Table no. 3 illustrates the correlation matrix of the variables included in the study. We noticed the existence of

significant relations between dependent variables and explanatory factors, which allows for in-depth deterministic analysis by means of testing some regression models.

Also, no connections with a high correlation level were identified between independent variables, thus eliminating any potential collinearity problems in the models.

Table no. 3. Correlation matrix

Variables	TC	OCF	Sales	ΔSales	ROA	FL	Size	BIG4	OP
TC	1								
OCF	-.011	1							
Sales	.395**	.159**	1						
ΔSales	.131*	.171**	.250**	1					
ROA	.184**	.438**	.274**	.312**	1				
FL	.191**	-.097	.299**	.111*	.020	1			
Size	-.162**	.205**	-.029	.048	.205**	.022	1		
BIG4	-.269**	.087	-.030	.040	.135*	.062	.519**	1	
OP	.089	.160**	.160**	.003	.148**	-.023	.025	-.029	1

Source: Processing done by the authors, 2019

The testing of research hypotheses via the proposed econometric models generated relevant results regarding the effect of the audit process on manipulation actions with regard to operational activities.

To this end, **Table no. 4** synthesizes the results obtained following the assessment of the degree of sales' manipulation via progressive introduction of independent variables into the Roychowdhury model (2006).

Table no. 4. Influence of the audit opinion on the extent of sales' manipulation

Independent variables	Dependent variable – OCF				
	1	2	3	4	5
Constant	0.038 (0.000)	-0.112 (0.086)	-0.128 (0.071)	-0.126 (0.055)	-0.138 (0.061)
$1/A_{t-1}$	-5.027 (0.059)	1.961 (0.562)	1.996 (0.544)	2.215 (0.499)	2.266 (0.496)
$Sales_t$	0.022 (0.015)	0.014 (0.100)	0.014 (0.107)	0.012 (0.176)	0.012 (0.185)
$\Delta Sales_t$	0.081 (0.015)	0.025 (0.426)	0.025 (0.423)	0.029 (0.357)	0.029 (0.356)
FL_t		-0.014 (0.007)	-0.014 (0.008)	-0.014 (0.010)	-0.013 (0.012)
ROA_t		0.373 (0.000)	0.374 (0.000)	0.362 (0.000)	0.363 (0.000)
$Size_t$		0.008 (0.018)	0.009 (0.017)	0.008 (0.015)	0.009 (0.019)
$BIG4_t$			-0.005 (0.564)		-0.005 (0.734)
OP_{t-1}				0.015 (0.071)	0.015 (0.160)
*BIG4*OP*					0.001 (0.963)
N	414	414	414	414	414
R^2	0.045	0.227	0.228	0.235	0.235
Sig F change	0.000	0.000	0.000	0.000	0.000

Note: The regression coefficients are presented with the associated sig. values between parentheses. A 5% risk was considered in the processing of data with regard to the significance level of the results.

Source: Processing done by the authors, 2019

The explanatory capacity of the model, estimated by means of the size of the R^2 determination report, increases from 4.5% to 22.7% in the conditions of introducing control variables, which validates the opportunity of involving them in the analysis. The reduced level of the models' degree of significance (Sig Fchange < 0.050) confirms the statistical significance of the models, respectively the manifestation of the sales' manipulation phenomenon. Introducing the qualitative variable Big4, regarding the role of the audit company's reputation in controlling the phenomenon of real earnings management, did not generate significant influences ($Sig_{Big4\ (model\ 3\ and\ 5)}$ >0.05). The audit opinion expressed for the previous financial year precedent has a positive influence on earnings management (i.e. in terms of its reduction), as companies are interested in maintaining the appreciation of the financial reporting quality. The increase in the determination report (R^2_{model4} > R^2_{model3}) reveals a boost in the correlation between the sales' evolution and the operating cash-flow, thus indicating the decrease in sales' manipulation. The sensitivity variable of the audit opinion function of the audit company's reputation (*Big4*OP)* does not exercise a significant influence, showing that client entities value the audit opinion more than its issuer.

The assessment of the degree of earnings management via overproduction is presented in the elements illustrated in Table no. 5. The introduction of control variables (Size, FL, ROA) in this case also validate the models' significance and the explanatory capacity of the analyzed relationships.

Table no. 5. Impact of the audit opinion on costs' manipulation

Independent variables	Dependent variable – TC				
	1	2	3	4	5
Constant	-0.038 (0.232)	0.796 (0.009)	0.240 (0.452)	0.778 (0.012)	0.275 (0.412)
$1/A_{t-1}$	2.153 (0.061)	-2.584 (0.866)	0.815 (0.956)	-2.173 (0.888)	-0.763 (0.996)
$Sales_t$	0.284 (0.000)	0.245 (0.000)	0.235 (0.000)	0.242 (0.000)	0.233 (0.000)
$\Delta Sales_t$	0.116 (0.416)	0.024 (0.870)	0.031 (0.825)	0.029 (0.843)	0.038 (0.789)
$\Delta Sales_{t-1}$	0.208 (0.354)	0.051 (0.636)	0.062 (0.715)	0.044 (0.762)	0.049 (0.726)
FL_t		0.045 (0.068)	0.053 (0.026)	0.046 (0.064)	0.054 (0.024)
ROA_t		0.584 (0.018)	0.630 (0.009)	0.569 (0.022)	0.619 (0.011)
$Size_t$		-0.045 (0.005)	0.011 (0.510)	0.043 (0.005)	-0.012 (0.457)
$BIG4_t$			-0.198 (0.000)		-0.233 (0.001)
OP_{t-1}				0.020 (0.611)	-0.001 (0.981)
*BIG4*OP*					0.039 (0.636)
N	414	414	414	414	414
R^2	0.166	0.200	0.249	0.201	0.250
Sig F change	0.000	0.000	0.000	0.000	0.000

Note: The regression coefficients are presented with the associated sig. values between parentheses. A 5% risk was considered in the processing of data with regard to the significance level of the results.

Source: Processing done by the authors, 2019

The decrease of the extent to which TC variation is explained by the variation of the turnover ($R^2_{model5} < R^2_{model4}$) shows an increase of earnings management via overproduction. In the case of companies audited by Big4 members, the phenomenon of manipulation via overproduction is lower compared to situations where entities use the services of a Non-Big4 auditor. The effect could be owed to the existence of superior analysis procedures and mechanisms in the case of major audit companies. The audit opinion expressed exercises an insignificant influence, which confirms that identifying overproduction is more difficult to highlight by the auditor.

Table no. 6 presents the structural analysis for the two-time intervals, from the perspective of applying the standards in accordance with IFRS, precisely for identifying the extent to which the mode of application of accounting regulation influences the degree of real earnings management.

From the perspective of the explanatory capacity of models, including the degree of association between the two dimensions, cash-flow and turnover variation (indicating the level of earnings management), over the 2014-2017 period we identify a decrease in sales' manipulation ($R^2_{2014-2017} > R^2_{2012-2013}$). Big4 status does not bear a significant influence, which is consistent with the results obtained in the analysis conducted across the entire sample. The audit opinion maintains its positive influence on the sales' manipulation process (i.e. towards its reduction), but the conclusion is only valid when assuming an 11.9% or 17.2% risk, respectively.

Table no. 6. Structural analysis of the relation between audit opinion-sales' manipulation

Independent variables	Dependent variable – OCF					
	2012-2013			2014-2017		
	1	2	3	1	2	3
Constant	-0.151 (0.236)	-0.155 (0.181)	-0.157 (0.224)	-0.138 (0.099)	-0.118 (0.136)	0.341 (0.000)
$1/A_{t-1}$	4.087 (0.521)	6.278 (0.568)	3.598 (0.572)	1.717 (0.649)	1.980 (0.601)	1.868 (0.631)
$Sales_t$	0.002 (0.908)	-0.001 (0.916)	-0.001 (0.913)	0.025 (0.036)	0.023 (0.059)	0.023 (0.058)
$\Delta Sales_t$	0.028 (0.618)	0.027 (0.625)	0.027 (0.627)	0.030 (0.433)	0.034 (0.374)	0.036 (0.349)
FL_t	-0.005 (0.534)	-0.002 (0.803)	-0.002 (0.811)	-0.019 (0.007)	-0.020 (0.004)	-0.019 (0.006)
ROA_t	0.226 (0.010)	0.218 (0.012)	0.215 (0.015)	0.489 (0.000)	0.470 (0.000)	0.481 (0.000)
$Size_t$	0.010 (0.130)	0.009 (0.109)	0.009 (0.150)	0.009 (0.036)	0.007 (0.061)	0.009 (0.053)
$BIG4_t$	-0.003 (0.840)		-0.006 (0.814)	-0.012 (0.374)		-0.017 (0.392)
OP_{t-1}		0.022 (0.119)	0.020 (0.265)		0.012 (0.172)	0.009 (0.523)
*BIG4*OP*			0.006 (0.837)			0.008 (0747)
N	138	138	138	276	276	276
R^2	0.115	0.131	0.131	0.337	0.337	0.341
Sig F change	0.023	0.009	0.029	0.000	0.000	0.000

Note: The regression coefficients are presented with the associated sig. values between parentheses. A 5% risk was considered in the processing of data with regard to the significance level of the results.

Source: Processing done by the authors, 2019

Table no. 7 illustrates the sequential analysis in the case of costs' manipulation. In this case, it reflects a prevailing use of these means of altering financial information in the 2014-2017 period, compared to the previous period, which could indicate an adaptation and a boost in the possibilities of manipulation simultaneously with the experimental use of IFRS. Also, the positive effect of the auditor's Big4 status is maintained, identifying the utility of the reputation regarding the efficiency of auditing procedures and techniques in diminishing results' manipulation.

Table no. 7. Sequential analysis of the influence of the audit opinion on the level of costs manipulation

Independent variables	Dependent variable – TC					
	2012-2013			2014-2017		
	1	2	3	1	2	3
Constant	0.124 (0.816)	0.671 (0.180)	0.067 (0.902)	0.435 (0.280)	0.914 (0.021)	0.537 (0.216)
$1/A_{t-1}$	-1.539 (0.564)	-2.074 (0.447)	-1.512 (0.574)	2.706 (0.882)	1.035 (0.956)	0.367 (0.987)
$Sales_t$	0.278 (0.000)	0.294 (0.000)	0.274 (0.000)	0.202 (0.001)	0.196 (0.001)	0.198 (0.001)
$\Delta Sales_t$	0.240 (0.304)	0.240 (0.316)	0.239 (0.309)	-0.085 (0.642)	-0.086 (0.650)	-0.057 (0.757)
$\Delta Sales_{t-1}$	0.267 (0.157)	0.254 (0.298)	0.307 (0.425)	-0.103 (0.598)	-0.109 (0.612)	-0.095 (0.649)
FL_t	0.048 (0.162)	0.042 (0.244)	0.051 (0.153)	0.046 (0.173)	0.036 (0.298)	0.048 (0.160)
ROA_t	0.930 (0.012)	0.959 (0.011)	0.952 (0.011)	0.347 (0.287)	0.186 (0.582)	0.352 (0.290)
$Size_t$	-0.005 (0.863)	-0.037 (0.132)	-0.003 (0.903)	-0.020 (0.335)	-0.049 (0.013)	-0.025 (0.253)
$BIG4_t$	-0.172 (0.011)		-0.124 (0.235)	-0.200 (0.000)		-0.264 (0.007)
OP_{t-1}		0.026 (0.675)	0.044 (0.557)		0.034 (0.538)	-0.008 (0.903)
*BIG4*OP*			-0.072 (0.557)			0.094 (0.417)
N	138	138	138	276	276	276
R^2	0.377	0.347	0.378	0.186	0.133	0.190
Sig F change	0.000	0.000	0.000	0.000	0.000	0.000

Note: The regression coefficients are presented with the associated sig. values between parentheses. A 5% risk was considered in the processing of data with regard to the significance level of the results.

Source: Processing done by the authors, 2019

Conclusions

The quality of information published by companies remains a topic that researchers continue to be interested in, owing to the effect generated on users, with significant effects on the entire economic spectrum.

The paper analyzes the quality of the financial information published by Romanian companies listed on the main market of the BSE, by involving the financial reports' auditing process and the audit opinion, respectively, as a complementary and influential factor.

The testing of proposed research hypotheses using some established models in the specialized literature identified the manifestation of the operational activities' manipulation (real earnings management) phenomenon in the activity of listed Romanian companies, via both means of action, i.e. sales' manipulation and overproduction.

Thus, we ascertained that the endeavor of auditing financial reports diminishes sales' manipulation. Of the two elements associated with the auditing process, only the audit opinion expressed for the previous financial year exercises an influence in this respect, while the auditor's Big4 or Non-Big4 status did not generate a significant impact. In the case of manipulation via overproduction, the audit opinion does not exercise a significant impact, showing a series of limits in the auditors' capacity to identify actions performed in this respect. However, we note the positive influence of the auditor's BIG4 status, on account of such companies having and using superior expertise and procedures.

These differences between the auditor's capacity to notice and influence the level of real earnings management are also supported by the results of the temporal sequential analysis. Over the "initiation" period in the application of IFRS, the level of sales' manipulation was higher than over the standard' "conformity" period. Manipulation via overproduction was prevailingly manifested in the 2014-2017 period, thus revealing the difficulty of identifying this type of actions in the conditions of applying accounting standards that are deemed more complex.

The study presents a series of limits generated by the reduced sample size and the exclusive focus on companies listed on the regulated market of the BSE. Future research directions include the removal of these restrictions and expanding the analysis at a regional and international level.

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