IS THE REPORTING METHOD OF OPERATING CASH FLOWS A DIFFERENTIATOR FOR EARNINGS MANAGEMENT AND CORPORATE PERFORMANCE?

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Abstract

This paper evaluates earnings management in the context of the two cash-flow reporting methods, using the Jones Model (1991) modified by Kothari et al. (2005), and analyses the corporate performance on the Romanian capital market. The research sample of 114 observations resulted from 57 companies listed on the Bucharest Stock Exchange is studied for a 2-year span: 2019-2020. The earnings management testing is carried out in the SPSS using the independent samples T-test aiming to identify whether the levels of earnings management practices for companies applying the indirect method and the direct one are significantly different. Moreover, an analysis of the corporate performance indicators ROA, EPS and CFO is carried out assuming that earnings management may be one of the factors explaining a higher level of performance for the companies using the indirect method. Additionally, the results are analysed in the context of the pandemic crisis (year 2020) compared with non-crisis period (year 2019), supposing that COVID-19 could affect corporate earnings management behaviour. The results show that during the health crisis, managers didn't boost up the company`s earnings and tried to overcome financial difficulties. As to the earnings management testing, findings highlight that companies applying the indirect method are not engaged more in earnings management than those applying direct method. Therefore, their higher performance in some periods cannot be explained by earnings manipulations.

Keywords: Earnings management, discretionary accruals, total accruals, corporate performance, COVID-19 pandemic, independent samples T-test

JEL classification: G03, M21, M41

Introduction

The goal of any company is to make a profit. However, nowadays we face intentionally influencing accounting information and manipulation of earnings which is one of the key indicators when assessing a company`s profitability. The central topic of this research is earnings management which can be defined as a method of manipulating financial records to improve the appearance of company`s financial statements and its

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overall position. Many accounting rules and principles allow managers to make judgements about the way these rules and principles are adopted. In such a way, earnings management takes advantage of it and creates financial statements that smooth company`s earnings, i.e., shift them from one period to another. Especially, earnings management practices are common for the publicly held companies. The reason for this is that investors are more likely to bid up the share price in the companies which present the reliable and predictable earnings over the time.

This paper aims to analyse earnings management and corporate performance in the context of the two cash-flow reporting methods. It investigates whether companies applying the indirect method are engaged more in earnings management then those applying the direct method. Less earnings management practices are expected in the companies applying the direct method, since the CFO under the direct method is harder to manipulate according to Huian et al. (2018), citing Mironiuc (2006). To achieve this, Romanian listed companies on the Bucharest Stock Exchange for a 2-year span (2019-2020) were chosen and divided into two sub-samples based on the reporting method used. First, the two sub-samples were analysed in terms of earnings management using the Jones Model (1991) modified by Kothari et al. (2005). The earnings management testing was carried out in the SPSS using the independent samples T-test aiming to identify whether the level of earnings management practices for companies applying the indirect method and the direct one is significantly different. Afterwards, the two sub-samples were analysed in terms of performance measures assuming that earnings management may be one of the factors explaining a higher level of performance for the companies using the indirect method.

Additionally, the results were treated with reference to pandemic crisis, assuming that COVID-19 could affect corporate earnings management behaviour. It was found out that the pandemic crisis had an adverse impact on the level of earnings management meaning that managers most probably tried to overcome financial difficulties. Additionally, results showed that companies applying the indirect method weren't engaged more in earnings manipulations than companies applying the direct method in both years. Moreover, it was found out that in 2020 companies applying the indirect method had even lower performance than those applying the direct method.

The rest of the paper is organized as follows. Section 1 deals with the literature review on earnings management and corporate performance decisions. Section 2 presents the empirical research on detecting earnings management practices and analysing performance indicators on the Romanian capital market based on two methods for reporting the operating cash flow. Section 3 presents the results. The last part of the paper presents the conclusion which is followed by acknowledgments, bibliography and appendices presenting detailed information about the sample and some useful print screens from the SPSS program.

1. Review of the scientific literature
1.1. Corporate earnings and earnings management

The literature review reveals that there are variety of earnings management definitions. Svabova (2021) describes earnings management as a phenomenon of today`s modern approach to the reporting of accounting information that has received a significant attention from researchers in recent years. It is related to the managers` decisions that affect the overall result of the company`s financial statements.

Huian et al. (2018, citing Healy and Wahlen, 1999) state that earnings management is a judgement used in financial reporting and structuring transactions by managers to alter financial statements to either mislead investors about the economic performance of the company or to influence the contractual results that are conditional on achieving a certain level of accounting numbers. Additionally, earnings management is defined as the deviation from the usual practices generated by the management`s motivation to give investors the belief that the financial objectives were met in the normal course of business (Huian et al., 2018, citing Roychowdhury, 2006).

According to Ronen and Yaari (2008), earnings management may be classified as white, gray, or black (table 1). *White* earnings management or, it is also called *beneficial*, enhances the transparency of reports. *Black* or *pernicious* earnings management involves outright misrepresentation and fraud. *Gray* is defined by manipulation of reports within the boundaries of compliance with bright-light standards.

Table no. 1. Alternative definitions of earnings management

White	Gray	Black
Earnings management is taking advantage of the flexibility in the choice of accounting treatment to signal the manager's private information on future cash flows.	Earnings management is choosing an accounting treatment that is either opportunistic (maximizing the utility of management only) or economically efficient.	Earnings management is the practice of using tricks to misrepresent or reduce transparency of the financial reports.

Source: Adoption according to Ronen and Yaari (2008), page 2.

Huian et al. (2018) state that generally earnings management has a negative connotation since managers shape financial reporting in ways that allow them to hide the real performance of the entity by creating the artificial records. However, it can be considered positive if and only if earnings management practices are used by managers to improve the welfare of all stakeholders, increase investors' confidence allowing for reliable numbers without breaking any legal requirements. All definitions underline the common characteristic of earnings management which is an intentional change in the company`s performance for achieving its profit targets.

1.2. Accruals as an earnings management practices and models for identifying discretionary accruals

According to Huian et al. (2018, citing Roychowdhury, 2006), accruals are considered to be a convenient form of earnings management because it doesn't involve any cash flows. Ronen and Yaari (2008) define accruals as non-monetary items that can be manipulated by management such as depreciation, inventories, receivables and payables. In the work of Siekelova (2021) accruals are determined as short-term liabilities arising during the accounting period which are not supported by any invoice. When preparing the financial statements for the specific period, accruals are estimated based on the previous experience; for example, based on previous payments.

Callao et al. (2017) describe accruals as the part of revenues and expenses that do not imply collections and payments. They also provide the formula used to calculate total accruals (TA) for company "i" in period t defining them as a sum of non-discretionary (NDA) and discretionary accruals (DA):

$$TA_{it} = NDA_{it} + DA_{it} \quad (1)$$

There are two approaches for defining the total accruals (TAC): *the cash flow method* and *the balance sheet method* (Huian et al., 2018, citing Hribar and Collins, 2002). Generally, they are defined as the difference between the reported net income and net operating cash flow (Net CFO). Therefore, the following formula of total accruals (TA) for company i in period t is determined:

$$TA_{it} = Net\ income_{it} - Net\ CFO_{it} \quad (2)$$

Accruals are divided into *normal* or *non-discretionary* ones and accruals generated by the earnings management practices which are called *abnormal* or *discretionary* accruals. Normal accruals arise basically from normal activities of the company while discretionary accruals represent a part of total accruals which is not directly observed and can be easily manipulated. According to Kumawat and Soral (2020) discretionary accruals are non-essential or non-mandatory expenses/assets that take place to promote or enhance the company's standing and worth or it means that the company uses its own. Non-discretionary accruals are those expenses that are mandatory in nature and that haven't been realized yet, but they are already recorded in the accounting ledgers.

Larson et al. (2017) in their research on accounting accruals presented some properties of accruals, i.e., their roles. The most important are capturing investments related to growth in the scale of business operations, alleviating timing differences between economic events and their associated cash flows effects and reflecting the asymmetric timely recognition of losses. When detecting earnings management, discretionary components of reported income are estimated. Callao et al. (2017) confirm that among different methodologies used to detect earnings management, the accrual-based approach is the most popular one and is mainly used by the authors. Hence, earnings management analysis usually focuses on discretionary accruals.

Discretionary accruals cannot be seen directly in financial statements; they must be estimated using one of the existing models which are provided in various literature. The range of such models varies from the simplest ones, which measure discretionary accruals as total accruals, to more advanced models that divide total accruals into discretionary and non-discretionary components. Callao et al. (2017) investigated the most popular models used in detecting earnings management and found out that in almost 60% of studies the following five models were mostly used: *Jones (1991) model, modified Jones model (Dechow, Sloan, and Sweeney, 1995), Teoh et al. (1998) model, Kasznik (1999) model and Kothari et al. (2005).*

They statistically analysed 195 papers within the period of 1981-2011 and summarized everything presenting a figure which comprises the percentage of studies that used a certain model for detecting earnings management. They included a category which is called «Others» consisting of other different ways of measuring discretionary accruals such as neural networks, questionnaires, the models of the ratio adjustment process, ratio of absolute value of accruals to the absolute value of cash flow from operations and some others (figure 1).
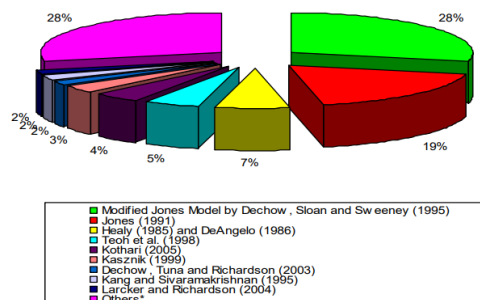
Figure 1. Percentage of studies using determined model of measuring EM
Source: Callao et al., 2017, page 226

Detecting earnings management in this study is based on the Jones Model (1991) modified by Kothari et al. (2005). A control variable that deals with the company's performance was added – lagged rate of return on asset which is one of the company's main profitability ratios measuring the efficiency of asset utilization. Their model is based on performance-matched discretionary accruals. Generally, Kothari et al. Model (2005) is formed on the understanding that working capital accruals are related to changes in revenues and depreciation is linked to assets (Huian et al., 2018). Since depreciation expenses are generated by property, plant and equipment, the coefficient of PPE is supposed to be negative. The error term Ɛ represents the discretionary accruals, i.e., the evidence of earnings management. The higher the discretionary accruals, the more earnings management practices were used.

1.3. ROA and EPS as the most important indicators of a company`s performance

Financial statements of a company are commonly analysed using ratio analysis. Due to this tool, good or bad circumstances or financial position of a company can be illustrated. Such type of analysis is highly dependent on information provided by financial statements which is one of the most important sources of information. According to Purnamasari (2015, citing Sundjaja and Barlian, 2003), the group's financial ratios are divided into five basic categories, namely: the liquidity ratios, activity ratios, leverage ratios, profitability ratios, and the ratio of the market.

This study will take into consideration one of the profitability ratios which is *return on assets*. The reason is that the ratio of profitability is considered as the most valid instrument for measuring the results of the implementation of the company's operations (Purnamasari, 2015). Akbar (2021) describes return on assets as the extent to which the investment that has been invested is able to provide a return of profit as expected. He also cites Kasmir (2015) determining two factors that influence return on assets which are net profit margins and total asset turnover. Rusdiyanto and Narsa (2020) provide another explanation of return on assets ratio. It is defined as the company`s ability to use total assets to generate corporate profits. The authors underline the importance of this ratio saying that using this ratio management of the company can evaluate the effectiveness and financial efficiency of a company in managing its total assets. Akbar (2021, citing Fahmi, 2015), also names return on assets ratio as return-on-investment ratio. In many studies, the same formula for return on assets (ROA) is provided:

$$ROA = \frac{Net\ income}{Total\ assets} \quad (3)$$

Rusdiyanto and Narsa (2020) concluded that the return on assets variable has a positive influence on earnings management since the greater return on assets the greater fluctuations in management`s ability to generate corporate profits influencing the investors` confidence in the company`s financial performance.

The second indicator that is very important when analysing company`s performance is *earnings per share.* Based on this indicator, most of the individual investors take their decisions regarding the investment. Islam et al. (2014) state that earnings per share is generally considered as the most important factor to determine share price and firm value and define it as the portion of a company's earnings, net of taxes and preferred stock dividends, that is allocated to each share of common stock. Since the number of outstanding can fluctuate, a weighted average of outstanding shares is used (Basely, 2006, cited by Islam et al., 2014). The formula for calculating the earnings per share (EPS) is following:

$$EPS = \frac{Net\ income - Dividends\ on\ preferred\ stock}{Average\ outstanding\ shares} \quad (4)$$

Cash flow from operating activities (CFO) is a part of a company`s cash flow statement representing the amount of money that a company earns and spends as a part of its regular business activities. Over some time, investors started focusing on the cash flow statement to assess the real earning power of the companies. According to Malik (2020), the section of cash flow from operating activities (CFO) is the most important, because it represents the cash earnings of the company for the year. He adds that it does not come as a surprise that companies try hard to show the best possible picture of CFO in their financial statements.

1.4. Operating cash-flow reporting method and its influence on earnings management

As it was discussed above, total accruals are defined as the difference between reported net income and net operating cash flow. Cash flow statement shows inflows and outflows of cash and cash equivalents resulting from various activities of a company which are generally divided into operating, investing and financing activities. To calculate total accruals, we need net operating cash flow that results from operating activities. They comprise main activities of a company during the specific period. There are two possible ways to report operating cash flow using either direct or indirect reporting method.

When calculating cash flow from operating activities using the *direct* method, all types of cash transactions including cash receipts and payments, cash expenses and interests, are determined. This method doesn't consider revenues and expenses which are not cash-related. In the case of the *indirect* method, we start with the net income and adjust it as per the changes in the balance sheet. It also adjusts the accrual net income including the items that didn't affect cash in the current period.

Which reporting method provides more useful information is a debatable subject. Huian et al. (2018, citing Bradbury, 2011), state that, on the one hand, the direct cash flow reporting format leads to better prediction of future firm performance and has a stronger association with share prices. Additionally, it leads to higher quality reporting lowering information asymmetry. Harrison and Horngren (2008, p. 280, cited by Huian et al., 2018)

consider that "direct method provides clearer information about the sources and uses of cash". It was found out by Mirouniuc (2006, cited by Huian et al., 2018) that the direct method is favoured by investors because: it is the starting point in predicting future cash-flows used to determine the firm's value; it provides intelligible and objective information, presenting the facts without leaving room for subjective interpretations.

Firms may prefer the indirect method if the use of the direct method discloses commercially sensitive information. It is easier to apply and preferred by managers who do not want to present to the external users the real picture of their business in terms of liquidity and solvability (Huian, 2018, citing Mironiuc, 2006).

According to Megan et al. (2009), cash flow is often considered to be one of the cleaner figures in the financial statements. Companies benefit from strong cash flow means being more attractive and getting a stronger rating. They state that the corporate muscle that would receive the cash flow accounting injection is OCF. Companies can bulk up their statements simply by changing the way they deal with the accounting recognition of their outstanding payments, or their accounts payable.

2. Research methodology
2.1. Development of the research questions

According to Huian et al. (2018, citing Roychowdhury, 2006), accruals are considered to be a convenient form of earnings management because it doesn't involve any cash flows. Generally, total accruals are defined as a difference between the reported net income and net operating cash flow. Discretionary part of accruals represents the level of earnings management practices in the company. Cash flows, in their turn, being a component of financial statements, provide users of financial information with a basis to assess the ability of the company to generate cash and cash equivalents. According to Megan et al. (2009), Romanian enterprises have a way to «pump up» their earnings through operating cash flow manipulation. Huian et al. (2018) state that it is more difficult to manipulate operating cash flow if it is determined under the direct method.

Consequently, the first research question, developed in two sub-questions, may be addressed:

RQ1: Are there more earnings management practices at companies that use the indirect CFO method?

RQ1.1: Are there more discretionary accruals at companies that use the indirect CFO method?

RQ1.2: Are there more total accruals at companies that use the indirect CFO method?

Corporate performance of any company may be analysed using the financial statements' information and applying ratio analysis. Since there is evidence that managers manipulate earnings to hide negative information from investors, Ashtab and Kordestani (2012) highlight that companies with more earnings growth are more likely to adjust earnings. Assuming, that companies using the indirect method of reporting the operating cash-flow are more likely to manipulate their earnings, the second research question is addressed, being developed in three sub-questions, each of which corresponds to the corporate performance variable:

RQ2: Is corporate performance better for companies applying the indirect CFO method?

RQ2.1: Is ROA better for companies applying the indirect CFO method?

RQ2.2: Is EPS better for companies applying the indirect CFO method?
RQ2.3: Is CFO better for companies applying the indirect CFO method?

2.2. Description of the variables

To evaluate earnings management, the Jones Model (1991) modified by Kothari et al. (2005) is used. The change in receivables from the Kothari et al. (2005) model was excluded due to statistical insignificance of this variable which makes the overall regression model statistically insignificant, too. Moreover, in their research Huian et al. (2018) haven't used this variable either. The additional control variable (ROA) dealing with the effect of performance on discretionary accruals was introduced.

$$\frac{TA_{it}}{A_{it-1}} = \alpha_0 \frac{1}{A_{it-1}} + \alpha_1 \frac{\triangle REV_{it}}{A_{it-1}} + \alpha_2 \frac{PPE_{it}}{A_{it-1}} + \alpha_3 \ ROA_{t-1} + \varepsilon_{it} \ (5)$$

Where:

A_{it-1}- total assets in year t -1 for company I;

$\triangle REV_{it}$ – annual change in revenues in year t for company I;

PPE_{it}- gross property, plant and equipment in year t for company I;

ROA_{it-1} – return on assets in year t-1 for company I;

ε - the error term.

Additionally, the assumption whether earnings management could be one of the factors that influences the main indicators of the company's performance is made. In other words, it is tested whether the performance indicators are higher for companies that use the indirect method for reporting the operating cash flow meaning that they are engaged more in earnings management procedures using accounting options that increase their earnings. For this test, three performance indicators are chosen: cash flow from operations as a measure of operating performance (CFO), return on assets (ROA) and earnings per share (EPS) as indicators of profitability and stock market performance.

The initial set of variables for each company included the identifier of the company namely *CUI* (a unique code of the company), *fiscal year*, *method used*, *net income*, *operating cash flow*, *total assets*, *revenues*, *property, plant and equipment, return on assets (ROA) and earnings per share (EPS)*. The indirect method is defined by «0» while the direct one by «1».

All the other variables needed for the Jones Model (1991) modified by Kothari et al. (2005) and performance measurement were calculated using the SPSS based on the information collected (table 2 and table 3). All the variables were calculated in the general database and ultimately the database was divided into two databases: 2019 and 2020 to analyse these years separately. *Appendix 1* presents the print screen of the general database from the SPSS program containing the observations for both years.

Table no. 2. Variables for Jones Model (1991) modified by Kothari et al. (2005)

Variables	Definition	Measure
A_{it-1}	Total assets in year t-1 for company i	The value of total assets from the previous year
TA_{it}	Total accruals in year t for company i	The difference between net income in year t and operating cash flow in year t
ΔREV_{it}	Annual change in revenues in year t for company i	The difference between revenues from current year and revenues from previous year
PPE_{it}	Property, plant & equipment in year t for company i	The value of PPE in the current year
ROA_{it-1}	Return on assets ratio in year t-1 for company i	Net income from previous year divided by total assets from previous year
ε_{it}	The error term, residual	Residuals taken from the model meaning the discretionary accruals

Source: author's contribution

Table no. 3. Variables for the corporate performance measurement

Variables	Definition	Measure
ROA_{it}	Return on assets ratio in year t for company i	$$ROA = \frac{Net\ income}{Total\ assets}$$
EPS_{it}	Earnings per share in year t for company i	$$EPS = \frac{Net\ income - Dividends\ on\ preferred\ stock}{Average\ outstanding\ shares}$$
CFO_{it}	Cash flow from operations in year t for company i	Extracted directly from the Cash Flow Statement

Source: author's contribution

2.3. Description of the collected data, sampling and financial information

Sample consists of Romanian listed companies on the Bucharest Stock Exchange on the Regulated market for a 2-year span: 2019-2020. Financial companies are excluded because of their different operations and specific regulations. Accounting information was extracted from the annual financial statements of the companies to compute all the necessary variables. Initial sample included 70 companies; after eliminating the companies which have incomplete financial data, 57 companies remained resulting in 114 observations in total.

Based on the Statement of Cash Flows, the reporting method is identified. It resulted in a number of 38 companies applying the indirect method (67% of all companies), and 19 companies using the direct method (33% of all companies). It confirms the findings of Huian et al. (2018) and shows that in 2019-2020 Romanian companies used more the indirect method for reporting the cash flows than the direct one. Furthermore, the sample is divided into two sub-samples. One of them is called INDIR for companies reported according to the indirect method, and another one is DIR for companies applying the direct method. *Appendix 2* shows more precisely what companies are included in each sub-sample, and what companies were excluded from the research due to either their financial activity or incomplete data.

3. Results and discussions

3.1. Descriptive statistics for earnings management practices and performance measures of Romanian companies

First, the earnings management was analyzed in terms of descriptive statistics (table 4) for each of the two years (2019, 2020) and two sub-samples (INDIR, representing the companies applying the indirect method and DIR, representing the companies applying the direct method). Two measures were used: total accruals scaled by lagged total assets (difference between net income and operating cash flow) and discretionary accruals (the unstandardized residuals generated by the Jones Model (1991) modified by Kothari et al. (2005)). Total accruals represent the total accruals of the company while discretionary accruals are a part of total accruals representing the level of the earnings management practices.

Table no. 4. Descriptive statistics of total and discretionary accruals

Indicators		2019		2020	
		Indirect (0)	Direct (1)	Indirect (0)	Direct (1)
Total accruals					
	Mean	-0.0309	0.0054	-0.0651	-0.0310
	Std. Deviation	0.0909	0.0635	0.0770	0.0873
	Std. Error Mean	0.0147	0.0146	0.0125	0.0200
Discretionary accruals					
	Mean	-0.0124	0.0247	-0.0075	0.0151
	Std. Deviation	0.0803	0.0635	0.0680	0.0771
	Std. Error Mean	0.0130	0.0146	0.0110	0.0177
Observations		38	19	38	19

Source: author's contribution

It is noticeable in the descriptive statistics that in 2019 observations of the companies using the direct method have a positive mean of total accruals of 0.0054 while in 2020 the mean is negative having the value of -0.0310. In 2020 the situation has changed: both sub-samples have negative means of total accruals (table 4) However, the variable of interest that shows the level of earnings management practices is discretionary accruals. In both years' observations from DIR sample, consisting of the companies that use the direct method for reporting the operating cash flow, produce the higher level of discretionary accruals. It means that the positive mean of discretionary accruals indicates the evidence of attempts to opportunistically manipulate or increase company`s earnings. These results contradict the results of Huian et al. (2018), which showed the opposite situation. Next, companies applying the indirect method for the reporting of operating cash flow have a negative mean of discretionary accruals in both years.

Comparing discretionary accruals in 2019 and 2020, we can identify some differences in the means which could be due to the COVID-19 pandemic. In the research of Da Silva et al. (2023), findings showed that Brazil companies managed their earnings through accruals more during the crisis. Moreover, during the COVID-19 crisis, earnings management has been overall greater than during other crises in Brazil and the USA. Results of our study show the opposite situation presenting the overall decrease in discretionary accruals from 2019 to 2020. Therefore, we may conclude that both groups of companies didn't try to manage their earnings through accruals more during the crisis.

Afterwards, the two-sub samples (INDIR and DIR) for the two years (2019, 2020) were analyzed in terms of performance measures (table 5). In the study of Huian et al. (2018), it was shown that both cash-based and accrual-based performance were, on average, higher for the companies using the indirect method for the reporting of operating cash flow. This made us to verify whether earnings management may be one of the factors explaining a higher level of performance for the companies using the indirect method. Therefore, three important variables of performance such as return on assets, earnings per share (accrual-based indicators) and cash flows from operations scaled by lagged assets (cash-based indicator) were calculated for each sub-sample (INDIR, representing the companies using the indirect method, and DIR representing the companies applying the direct method).

Table no. 5. Descriptive statistics of performance variables for 2019 and 2020

Indicators		2019		2020	
		Indirect (0)	Direct (1)	Indirect (0)	Direct (1)
ROA					
	Mean	0.0329	0.0461	0.0087	0.0299
	Std. Deviation	0.0687	0.0523	0.0800	0.0811
	Std. Error Mean	0.0111	0.0120	0.0130	0.0186
EPS					
	Mean	1.0857	0.5805	0.4655	0.7363
	Std. Deviation	4.7071	1.5666	2.3955	1.8163
	Std. Error Mean	0.7636	0.3594	0.3886	0.4167
CFO					
	Mean	0.0696	0.0495	0.0785	0.0665
	Std. Deviation	0.1027	0.0814	0.0776	0.0765
	Std. Error Mean	0.0167	0.0187	0.0126	0.0176
Observations		38	19	38	19

Source: author's contribution

What is noticeable for both years is that return on assets is higher for companies using the direct method. It contradicts the findings of Huian et al. (2018) whose work showed the higher accrual-based performance for the INDIR sample. However, earnings per share being the second indicator of the accrual-based performance are, on average, higher for the companies using the indirect method. As to the cash flow from operating activities, findings also show the higher cash-based performance for the companies using the indirect method for reporting the operating cash flow.

3.2. The earnings management and corporate performance testing
3.2.1. Earnings management testing

To answer to the first research question, whether there are more earnings management practices at companies that use the indirect CFO method, we will consider two sub-questions developed in relation to total accruals and discretionary accruals.

The earnings management testing was carried out in the SPSS using the independent samples T-test which compares the two means of two independent groups to determine whether there are statistical differences between the means of two groups (table 6). Using the T-test for two independent samples, we aimed to find out whether the level of earnings management practices for companies applying the indirect method and the direct

one is significantly different. *Appendix 3* shows the print screen of the output of the independent sample test from the SPSS software performed for 2019.

Table no. 6. Independent Samples T-test for 2019

		Levene's Test for Equality of Variances		T-test for Equality of Means			
		F	Sig.	t	df.	Sig. (2-tailed)	Mean difference
Discretionary accruals	Equal variances assumed	0.379	0.541	-1.754	55	0.085	-0.0371
Total accruals	Equal variances assumed	0.673	0.416	-1.559	55	0.125	-0.0363

Source: author's contribution

As to the discretionary accruals, the p-value of the Levene's test for 2019 is 0.541 which is really big compared to the $\alpha = 5\%$. This makes us accept the null hypothesis of the Levene's test and conclude that the variance in the discretionary accruals of companies applying the indirect method isn't significantly different than that of companies applying the direct method. Therefore, this conclusion provides the reason to look at «Equal variances assumed» output for the T-test which provides the results for the actual independent samples T-test. If we accept a significance level of 5%, the results show that the mean score of discretionary accruals between the group is not statistically significant. The mean difference is calculated by subtracting the mean of the second group from the mean of the first group. The sign of the mean difference corresponds to the sign of the t-value, which is negative in this case, and indicates that the mean discretionary accruals for companies applying the indirect method is insignificantly lower than the mean for the second group of companies applying the direct method. Therefore, the research question *RQ1.1 can`t be validated*: there are no more earnings management practices at companies applying the indirect method.

As to the total accruals, the p-value of the Levene`s test for 2019 is 0.416 which is also really big compared to the $\alpha = 5\%$. Therefore, the null hypothesis of the Levene`s test is accepted and it is concluded that the variance in the total accruals of companies applying the indirect method isn't significantly different than that of companies applying the direct method. Consequently, *RQ1.2 can`t be validated* because differences between two samples are statistically insignificant.

Approximately the same situation can be noticed in 2020 (table 7). The p-value of the Levene`s test is even higher than in 2019 for both discretionary and total accruals and, hence, higher than $\alpha = 5\%$. Thus, the null hypothesis of the Levene`s test is not rejected and it is concluded that the variance in the discretionary accruals of companies applying the indirect method isn't significantly different than that of companies applying the direct method.

Table no. 7. Independent Samples T-test for 2020

		Levene's Test for Equality of Variances		T-test for Equality of Means			
		F	Sig.	t	df.	Sig. (2-tailed)	Mean difference
Discretionary accruals	Equal variances assumed	0.031	0.862	-1.133	55	0.262	-0.0226
Total accruals	Equal variances assumed	0.003	0.954	-1.505	55	0.138	-0.0341

The mean difference is also negative indicating that the mean discretionary accruals for companies applying the indirect method is insignificantly lower than the mean for the second group of companies applying the direct method or, in other words, the level of earnings management is insignificantly higher for the companies applying the direct method for the reporting of operating cash flow.

The results didn't confirm that companies using the indirect reporting method are more tempted to use the techniques that increase their earnings. Therefore, the research question can`t be validated. Moreover, their overall better performance in terms of cash flows might not be explained by the earnings management practices. Opposite to this, better results of ROA and EPS indicators for companies applying the direct reporting method may be explained using earnings manipulation techniques.

3.2.2. Corporate performance testing

To answer to the second research question *RQ2*, whether corporate performance is better for companies applying the indirect CFO method, developed in three sub-questions *RQ2.1, RQ2.2* and *RQ2.3* related to the performance variables, the corporate performance testing was carried out in the same way using the independent sample T-test in the SPSS software. The test was aimed to compare the means of two groups of companies: companies using the indirect and direct methods for reporting the CFO, and to determine whether there are any statistical differences between them. The output of the T-test for 2019 and for 2020 provides the information about the Levene`s Test for equality of variances and T-test for equality of means (table 8 and table 9). *Appendix 4* shows how the independent sample T-test was executed: ROA, EPS and CFO were selected as test variables and reporting method as grouping variable.

Since the p-value of the Levene`s Test for ROA and EPS indicators is higher than $\alpha = 5\%$ being equal to 0.59 and 0.391 respectively, it indicates that the variances are equal across the two groups of companies. Therefore, we rely on the SPSS output for the «Equal variances assumed» for the T-Test for Equality of Means. In case of CFO indicator, the p-value of the Levene`s Test is small compared to the $\alpha = 5\%$ being equal to 0.024 and meaning that the variances are not equal across the two groups in 2019. Therefore, the results from «Equal variances not assumed» output have been taken for the independent sample T-test.

Table no. 8. Independent Samples T-test for 2019

		Levene's Test for Equality of Variances		T-test for Equality of Means			
		F	Sig.	t	df.	Sig. (2-tailed)	Mean difference
ROA	Equal variances assumed	0.293	0.590	-0.736	55	0.465	-0.0132
EPS	Equal variances assumed	0.747	0.391	0.454	55	0.652	0.5052
CFO	Equal variances not assumed	5.364	0.024	1.887	37.1	0.067	360941946.7

Source: author's contribution

The mean difference for ROA is negative indicating that the mean return on assets for companies applying the indirect method is insignificantly lower than the mean for the second group of companies applying the direct method. The opposite situation is for EPS and CFO, where the mean difference is positive, meaning that the level of EPS and CFO indicators is higher for the second group meaning the companies applying the direct method. Therefore, *research sub-question RQ2.1 couldn't be validated because* corporate performance situation in terms of ROA is lower for the companies applying the indirect method. Contrary to the previous research sub-question, *RQ2.2 and RQ2.3 can be validated*, because the results showed that the corporate performance level in terms of CFO and EPS is higher for the companies applying the indirect method.

Table no. 9. Independent Samples T-test for 2020

		Levene's Test for Equality of Variances		T-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean difference
ROA	Equal variances assumed	0.007	0.933	-0.942	55	0.350	-0.0213
EPS	Equal variances assumed	0.025	0.876	-0.434	55	0.666	-0.2708
CFO	Equal variances not assumed	6.510	0.014	2.129	37.5	0.040	344160789

Source: author's contribution

The output shows that in 2020 the corporate performance in terms of EPS decreased for companies applying the indirect method, since the mean difference became negative (table 9). It indicates that the earnings per share reported by the companies applying the direct method were higher in 2020 than those reported by the first group of companies applying the indirect method. Summarizing the results for 2020, *we can`t validate research sub-questions RQ2.1 and RQ2.2*, because the corporate performance indicators for companies applying the indirect method for reporting the CFO are lower giving the negative mean difference. However, earnings per share are higher for the first group of companies, showing the positive mean difference and *validating the research sub-question RQ2.3.*

Conclusions

This paper aims to evaluate earnings management and corporate performance of the companies in the context of two cash-flow reporting methods using the Jones Model (1991) modified by Kothari et al. (2005) on the Romanian capital market for a sample of 114 observations resulted from 57 companies listed on the Bucharest Stock Exchange for a 2-year span: 2019-2020.

First of all, it was tested whether firms applying the indirect method for reporting operating cash flow tend more to use earnings management practices than companies applying the direct method. Results of the descriptive statistics showed that in both years' observations companies that use the direct method for reporting the operating cash flow produce the higher level of discretionary accruals. It means that the positive mean of discretionary accruals indicates the evidence of attempts to opportunistically manipulate or increase company`s earnings. The results of the T-test confirm that the variance in the discretionary accruals of companies applying the indirect method isn't significantly different than that of companies applying the direct method.

After evaluating the earnings management, the companies were analyzed in terms of performance measures assuming that earnings management may be one of the factors explaining a higher level of performance for the companies using the indirect method. The results don't confirm the higher performance in terms of return on assets showing that it is higher for companies using the direct method. However, earnings per share being the indicator of the accrual-based performance are, on average, higher in 2019 for the companies using the indirect method along with the cash flow from operating activities showing the higher cash-based performance for the companies using the indirect method for reporting the operating cash flow. As to 2020, earnings per share is higher for the companies applying the direct method. Therefore, we can conclude that earnings management cannot be considered one of the factors explaining a higher level of performance for the companies using the indirect method, since they are engaged in EM practices less according to the results for 2019 and 2020.

As to the research contribution, there is evidence that managers manipulate earnings to hide negative information from investors. Therefore, these findings are relevant for investors who should pay attention to the CFO reporting method that might explain to some extent the reported performance level.

Limitations of the paper consist of the small number of observations that have been used due to the lack of information for 13 companies. Additionally, research reflects the level of earnings management only because of using the Jones Model (1991) modified by Kothari et al. (2005) and it could give different results if another model would have been applied. As future research, it would be useful to analyze earnings management for the same sample of companies using the same model, but a different period – the post pandemic period, and to compare the results.

References

[1]   Akbar J.S., *The effect of return on assets and return on equity on price to book value on banking companies listed on the Indonesia stock exchange,* 2021

[2]   Ashtab A., and Kordestani G., *Predicting earnings management based on adjusted EPS,* 2012

[3]   Callao S., Jarne J., and Wroblewski D., *Detecting earnings management investigation on different models measuring earnings management for emerging eastern European countries*, International journal of research-Granthaalayah, pages 222-259, 2017

[4]   Da Silva E., Sampaio O., Beiruth X., Brugni V., *Earnings management during the COVID-19 crisis: evidence from the Brazilian and American capital markets*, Journal of Accounting in Emerging Economies, 2023

[5]   Huian C., Mironiuc M., Chiriac M., *Study on the association between earnings management and value relevance based on the reporting method used for operating cash flows*, The Audit Financiar journal, Chamber of Financial Auditors of Romania, vol. 16(149), pages 101-101, 2018

[6]   Islam R., Khan T.R., Choudhury T.T., and Adnan A.M., *How earnings per share affects on share price and firm value,* 2014

[7]   Kumawat N., and Soral G., *Detecting earnings management: a comparative study of accrual-based models,* 2020

[8]   Larson C., Sloan R., and Giedt J., *Defining, measuring and modeling accruals: a guide for researchers, 2017*

[9]   Megan O., Hategan C., Caciuc L. and Cotlet B., *The Cash-flow Statement - between true and manipulation,* Annals of the University of Petroşani, Economics, 9(2), 2009, p.127-136

[10]   Malik V., *How companies manipulate cash flow from operating activities*, 2020

[11]   Purnamasari D., *The effect of changes in return on assets, return on equity, and economic value added to the stock price changes and its impact on earnings per share,* 2015

[12]   Ronen J., and Yaari V., *Earnings management: emerging insights in theory, practice, and research,* 2008

[13]   Rusdiyanto, and Narsa I., *The effect of company size, leverage and return on asset on earnings management: case study Indonesian,* 2020

[14]   Svabova L., *Detecting the manipulation of earnings in the company: triangulation of methods,* 2021

[15]   Siekelova, A., *Historical development of earnings management models,* 2021

Appendices

Appendix 1. General database for detecting EM for 2019 and 2020

	CUI	FiscalY...	Methodused	NetIncome	CFO	TotalAssets	Revenue	PPE	ROA	EPS	TotalAccru...	LagAssets	CFOLagAssets	ROALag	PPELagAssets
1	1590082	2018	0	4077790000	7385080000	43784140000	22523240000	26749090000	.0931	.07200	-3307290000				
2	1590082	2019	0	3634680000	6802520000	47495230000	25485470000	27944720000	.0765	.06420	-3167840000	43784140000.00	.16	.09	64
3	1590082	2020	0	1291010000	5555730000	47620820000	19716980000	27802200000	.0271	.02280	-4264720000	47495230000.00	.12	.08	59
4	14056826	2018	0	1366168000	2143187000	9134899000	5004197000	6279748000	.1496	.00350	-777019000				
5	14056826	2019	0	1089623000	2432323000	8253173000	5080482000	5543177000	.1320	.00280	-1342700000	9134899000.00	.27	.15	61
6	14056826	2020	0	1247904000	2036764000	9261167000	4074893000	5613122000	.1347	.00320	-788860000	8253173000.00	.25	.13	68
7	13267221	2018	0	230395000	696404000	7529072000	5612784000	601178000	.0306	.68000	-466009000				
8	13267221	2019	0	206677000	697586000	7817272000	6279834000	544098000	.0264	.61000	-490909000	7529072000.00	.09	.03	07
9	13267221	2020	0	387543000	667868000	8061818000	6501100000	508130000	.0481	1.14000	-280325000	7817272000.00	.09	.03	07
10	10874881	2018	0	410565969	1023858046	8866264158	2128660533	6507789378	.0463	1.36000	-613292077				
11	10874881	2019	0	535563109	992501618	8810771555	2377764623	6201492171	.0608	1.78000	-456938509	8866264158.00	.11	.05	70
12	10874881	2020	0	699211355	1237323222	8844245240	2446003087	5940495002	.0791	2.32000	-538111867	8810771555.00	.14	.06	67
13	3094980	2018	0	22638706	7886493	642246468	804512197	214194882	.0352	.02500	14752213.00				
14	3094980	2019	0	38907530	75499640	693380246	342816083	280815152	.0561	.00900	-36592110.0	642246468.00	.12	.04	44
15	3094980	2020	0	77500798	158763768	731797312	396180378	164230946	.1059	.02000	-81262970.0	693380246.00	.23	.06	24
16	8422035	2018	0	16782637	51765731	900530142	794562861	458033010	.0186	.76000	-34983094.0				
17	8422035	2019	0	16785485	106553551	1054354343	967380307	491151660	.0159	.10000	-89768066.0	900530142.00	.12	.02	55
18	8422035	2020	0	63763684	128663835	1183493863	1077448351	535672488	.0539	.43000	-64900151.0	1054354343.00	.12	.02	51
19	1916198	2018	0	2207683	8143089	271754801	78968726	215485070	.0081	.04608	-5935406.00				
20	1916198	2019	0	1412684	16391152	270890026	69255354	215740013	.0052	.02316	-14978468.0	271754801.00	.06	.01	79

Appendix 2. Allocation of the companies for detecting the EM

Accepted companies	Excluded companies
o **INDIRECT METHOD**	o **FINANCIAL COMPANIES**
1. OMV PETROM S.A.	1. BANCA TRANSILVANIA S.A.
2. S.N.G.N. ROMGAZ S.A.	2. BRD – GROUPE SOCIETE GENERALE S.A.
3. SOCIETATEA ENERGETICA ELECTRICA S.A.	3. BURSA DE VALORI BUCURESTI S.A.
4. S.N. NUCLEARELECTRICA S.A.	4. FONDUL PROPRIETATEA
5. TERAPLAST S.A.	5. SSIF BRK FINANCIAL GROUP SA
6. MEDLIFE S.A.	6. SIF MUNTENIA S.A.
7. PREFAB S.A.	7. SIF OLTENIA S.A.
8. ALRO S.A.	8. TRANSILVANIA INVESTMENTS ALLIANCE S.A.
9. TURBOMECANICA S.A.	9. ERSTE GROUP BANK AG
10. SPHERA FRANCHISE GROUP S.A.	10. TRANSILVANIA BROKER DE ASIGURARE SA
11. S.N.T.G.N. TRANSGAS S.A.	11. SIF BANAT CRISANA S.A.
12. IAR SA BRASOV	12. EVERGENT INVESTMENTS S.A.
13. DIGI COMMUNICATIONS N.V.	13. PATRIA BANK S.A.
14. C.N.T.E.E. TRANSELECTRICA	o **INCOMPLETE DATA**
15. BITTNET SYSTEMS S.A.	14. AQUILA PART PROD COM
16. TURISM, HOTELURI, RESTAURANTE MAREA NEAGRA S.A.	15. CHIMCOMPLEX BORZESTI SA ONESTI
17. ROMCARBON S.A.	16. ONE UNITED PROPERTIES
18. ELECTROARGES SA CURTEA DE ARGES	17. TTS (TRANSPORT TRADE SERVICES) S.A.

Accepted companies	Excluded companies
19. COMPA S.A.	18. UAMT S.A.
20. CASA DE BUCOVINA-CLUB DE MUNTE	19. SOCIETATE DE CONSTRUCTII NAPOCA S.A.
21. OIL TERMINAL S.A.	20. ELECTROAPARATAJ S.A.
22. ALUMIL ROM INDUSTRY S.A.	21. PURCARI WINERIES PUBLIC COMPANY LIMITED
23. BIOFARM S.A.	22. ROMCAB S.A.
24. ROMPETROL WELL SERVICES S.A.	23. UCM RESITA S.A.
25. ZENTIVA S.A.	24. CONDMAG S.A.
26. ROPHARMA S.A.	25. COMCM S.A. CONSTANTA
27. ROMPETROL RAFINARE S.A.	26. COS TARGOVISTE S.A.
28. IMPACT DEVELOPER&CONTRACTOR S.A.	
29. MECANICA FINA S.A.	
30. DAFORA S.A.	
31. SANTIERUL NAVAL ORSOVA S.A.	
32. UZTEL S.A.	
33. TURISM FELIX S.A.	
34. COMELF S.A.	
35. SIF HOTELURI S.A.	
36. VES S.A.	
37. ARMATURA S.A.	
38. COMPANIA ENERGOPETROL S.A.	
o **DIRECT METHOD**	
39. CONTED S.A.	
40. MECANICA CEAHLAU S.A.	
41. ALTUR S.A.	
42. GRUPUL INDUSTRIAL ELECTROCONTACT S.A.	
43. SINTEZA S.A.	
44. SOCEP S.A.	
45. CARBOCHIM S.A.	
46. ARTEGO S.A.	
47. VRANCART S.A.	
48. PROMATERIS S.A.	
49. AEROSTAR S.A.	
50. FARMACEUTICA REMEDIA S.A.	
51. S.C. AAGES S.A.	
52. BERMAS S.A.	
53. ANTIBIOTICE S.A.	
54. PREBET SA AIUD	
55. CEMACON S.A.	
56. CONPET S.A.	
57. ELECTROMAGNETICA S.A.	

Appendix 3. The SPSS output of the independent sample test for 2019

Appendix 4. Independent Sample T-Test