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ASSESSING THE IMPACT OF THE SARS-COV-2 PANDEMIC ON EARNINGS MANAGEMENT BEHAVIOUR IN POLAND

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Abstract. The *purpose* of this paper is to investigate the impact of the SARS-CoV-2 pandemic turbulence on the extent and intensity of earnings management practices according to the opinions of representatives of non-financial companies listed on the Warsaw Stock Exchange (WSE). *Methodology*. This study is based on the method of standardised computer-assisted questionnaire interviews (CATI). The research sample consisted of 37.1% of all companies indexed on the WSE Main Market that do not operate in the banking, insurance or capital market services sectors. The target respondents were managers, employees of financial and accounting services and other persons authorised by the company's managerial staff representatives. *Results*. The survey findings showed that the economic turbulence caused by the SARS-CoV-2 pandemic contributed to an increase in earnings management activities in public companies. Respondents who reported that the companies they represented deliberately manipulated earnings were much more confident about the negative impact of the pandemic crisis on the quality of reported data. An interesting finding of the research is that respondents who had experienced earnings management in their professional practice were more likely to believe that the pandemic had distorted the credibility of reported earnings. Finally, the study provided statistical evidence that respondents from larger companies were more likely than respondents from smaller companies to say that the economic crisis related to the SARS-CoV-2 pandemic contributed to an increase in earnings management activities. *Practical implications.* This investigation may draw the attention of market participants to the deterioration in the financial reporting of non-financial public companies during the SARS-CoV-2 pandemic. The intensification of profit manipulation may not only distort the current perception of the company's economic performance, but also deteriorate the future value of companies. In addition, the findings provide valuable information for statutory auditors, as they highlight potential audit risks that may arise with the onset of the SARS-CoV-2 pandemic. *Value/originality*. Unlike most studies on the subject, this research does not focus on the estimated values of discretionary accruals, but on the knowledge and experience of financial professionals who are familiar with the specifics of the Polish capital market. An original contribution to the literature is the inclusion in the study of potential factors that could influence the respondents' perception of the impact of the consequences of the SARS-CoV-2 turbulence on the pattern and intensity of the earnings management phenomenon.

Keywords: profit management, profit quality, SARS-CoV-2 pandemic, listed companies, financial crisis, questionnaire survey.

JEL Classification: G10, G32, M41

1. Introduction

Although accounting standards in all countries require the objective and impartial presentation of reported data (Zeff, 2007), earnings management practices have been a temptation and a real opportunity for managers to deliberately disclose financial results (Geiger et al., 2010). Apart from the ethical aspects of its implementation, earnings manipulation can lead to the avoidance of negative actions by financial market regulators, the avoidance of potential violations of the terms of contracts concluded between the company and lenders, the influence of changes in investors' expectations regarding the level of profits generated in subsequent periods, the deliberate interference in the dividend payment policy implemented, the bonuses paid to management based

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on the economic results achieved, the increase in the attractiveness of the company at the time of the initial or subsequent share issue (Xie et al., 2003; Geiger et al., 2007). The multiplicity of different objectives of earnings management makes the issues of identifying incentives and recognising the mechanisms and conditions for earnings manipulation a current area of research that needs to be further explored. This is particularly important for market participants when assessing the informative value of financial reporting during a turbulent financial crisis. The economic consequences of the outbreak of the SARS-CoV-2 pandemic may have provided a particular incentive or impetus for managers to change current patterns of earnings management behaviour in listed companies.

This paper examines the opinions of 124 economists regarding the impact of the SARS-CoV-2 pandemic on the extent and intensity of earnings management practices in non-financial companies listed on the Warsaw Stock Exchange (WSE). The empirical analyses presented in the paper refer to the results of questionnaire surveys conducted among managers and employees of financial and accounting services of public companies, which differs from most studies on a similar point, which mainly focus on changes in discretionary accruals before and after the pandemic outbreak. An original contribution to the literature is the inclusion in the study of potential factors that could influence respondents' perceptions of the impact of the consequences of the SARS-CoV-2 outbreak on the pattern and intensity of the earnings management phenomenon. The proposed research approach made it possible to statistically test whether determinants such as firm-specific parameters (including company size, industry sector and type of auditor verifying the reliability and credibility of reported data), respondents' previous experience with earnings management practices in their professional lives, as well as the earnings manipulation strategies employed by the represented listed companies to date, could have influenced the participants' attitudes towards the impact of the SARS-CoV-2 pandemic on the quality of earnings on the Polish capital market.

2. Earnings Management – General Overview of the Issue

Earnings management practices include a wide range of activities related to the selection of specific estimates used to value assets or liabilities, revenues and costs because they cannot be quoted, as well as the structuring and timing of operational or investment decisions that will make it possible to move reported earnings up or down towards the desired target. Depending on the adopted theories explaining the application of earnings management in economic practice (Kothari et al., 2016; Commerford et al., 2018; Mendoza et al., 2021; Habib et al., 2022), earnings manipulation can be characterised in different ways – starting from the view that the mentioned activities have a strictly opportunistic dimension and are aimed at misleading some groups of company stakeholders about the true economic performance of the company (Kaplan, 2001), by viewing them through the prism of the (legally permitted) flexibility in shaping accounting values (Prior et al., 2008), and ending with the statement that these practices can be used to improve the quality of reported information (Sankar, Subramanyam, 2001).

Current accounting rules provide a wide range of accounting instruments to reduce, increase or smooth financial results. Based on accounting estimates (such as the setting of bad debt allowances, inventory write-downs and the manipulation of depreciation), managers can deliberately understate reported earnings in prosperous periods. When estimating accounting years in which earnings are higher than expected, a firm's managers may choose an estimate at the high end of the range of possible costs (expenses), thereby increasing them in the fiscal year in question (McKee, 2006). In subsequent periods, when it is necessary to increase the reported financial result, managers could seek to reverse provisions or write-offs in order to increase earnings. On the other hand, if circumstances are bad and it is impossible to avoid reporting large losses, managers could use the big bath technique, which consists in gradually further reducing the unsatisfactory level of the financial result in order to allow its artificial increase in the future by generating exceptionally high costs (e.g., "one-off" recording of the entire ceiling of costs related to restructuring provisions or restructuring of problematic debts) in the current period, while at the same time seeking to reduce the level of costs in subsequent years.

Earnings management motives may be integrally related to the desire to meet the expectations of financial market analysts and have connotations with the threshold theory, which emphasises the importance of analysts' forecasts in corporate governance. From a psychological point of view, reporting earnings above expectations may be an impulse to increase stakeholders' trust in the firm. In addition, greater predictability of financial results reduces the risk premium and the market responds positively to steadily growing, stable profits. However, too much upward revision of earnings can be damaging to the company, as investors' future expectations will exceed the company's actual growth potential. Earnings smoothing is the deliberate elimination of the "peaks" and "troughs" in a company's normal earnings by reducing and retaining profits in good years and using them in bad years. It is based on manipulating the time profile of earnings to make the stream of reported earnings less volatile. At the same time, the intention of management is to prevent excessive increases in the company's financial results over the long term.

As business practice shows, profit management takes the form of accounting-type practices implemented at the end of the financial year to artificially improve the image of the company's economic performance using the assumptions of the "window dressing" technique. It involves different measures to manage financial liquidity, such as utilizing available credit lines and actively collecting receivables. Additionally, it includes actions to enhance profitability, such as adjusting financial records by including them in the previous or upcoming period. Furthermore, it aims to reduce the cost of economic activity. According to Newman et al. (1992), companies can manipulate their financial statements by adjusting discretionary costs, delaying write-downs, allowing impairment of fixed assets, refraining from creating provisions for probable future costs, and other means. In addition, to change reported earnings in a particular direction, managers may engage in substantive earnings management activities, which refer to departures from normal business activities and changes in the timing or structure of the firm's operations (Sellami, 2015). These activities differ from accrual-based earnings manipulation and include, among others, overproduction of inventory to reduce the cost of goods sold, reduction of discretionary expenses (i.e., advertising, research and development, selling, general and administrative expenses) to improve reported margins, repurchase and redemption of own shares, flushing of the investment portfolio, and acquisition or sale of subsidiaries (Grullon, Ikenberry, 2010).

3. Earnings Management Models during the SARS-CoV-2 Pandemic

Although the number of studies on the impact of the SARS-CoV-2 pandemic on the finances of modern companies is increasing every year, this issue still needs to be explored, especially as the results obtained so far point to very different conclusions. The existing literature suggests that SARS-CoV-2 increased the financial pressure on firms, leading managers to deliberately influence the value of reported earnings. Xiao and Xi (2021) found that firms engaged in more accounting earnings management during the pandemic, but less real earnings management. Yan et al. (2022) found that the economic problems caused by the SARS-CoV-2 pandemic intensified accrual-based earnings management behaviour. They found that companies facing severe financial constraints had a more pronounced negative impact of SARS-CoV-2 on their earnings management activities. Taylor et al. (2023) also found that the SARS-CoV-2 outbreak led to an increase in earnings manipulation activities. Hsu and Yang (2022) show that earnings quality is lower during the pandemic period, and they find evidence of the implementation of real earnings management to a greater extent than in the years before the financial crisis caused by the pandemic. Lassoued and Khanchel (2021) showed that EU firms tended to produce lower quality financial reports during the SARS-CoV-2 pandemic. The evidence collected suggests that public firms were more likely to use income-enhancing discretionary accruals to manage earnings upwards and to present the firms' economic performance in a better light to their stakeholders.

On the other hand, Liu and Sun (2022) found that US companies reduced the value of discretionary accruals, while the absolute value of discretionary accruals increased significantly from 2019 to 2020. They stated that the firms in their study used discretionary accruals, which reduce earnings in the pandemic year, to inflate earnings in subsequent periods. Ali et al. (2022), who tested public companies from the G-12, found that public companies were less likely to engage in earnings management practices during the SARS-CoV-2 pandemic. They also showed that firms in countries severely affected by the pandemic did not report a significant decrease in earnings manipulation through accruals. Focusing on the Polish market, Lizińska and Czaplewski (2023) showed the evolution of accrual-based and real earnings management during the financial crisis caused by SARS-CoV-2 in companies listed on the WSE. They demonstrate that in 2020 there was a noticeable decrease in discretionary accruals among non-financial public companies and a weakening of the tendency to overstate earnings by intervening in the financial reporting process. They also found that the tested companies appeared to be more willing to adopt a big bath strategy to increase their ability to overstate earnings in the future.

4. Research Methodology

The empirical research was conducted among representatives of 124 non-financial public companies listed on the Main Market of the WSE, using the method of standardised computer-assisted questionnaire interviews (CATI). Thus, the research sample provided represented 37.1% of all companies indexed on the Main Market of the WSE that do not operate in the banking, insurance, real estate, financial intermediation or capital market services sectors. The target group of respondents were financial managers, employees of financial and accounting services and persons authorised by representatives of the company's management in the rank of owner, president/vice president, member of the board of directors or general director. The survey was conducted by a specialised external company in June-August 2023.

The survey was conducted in two stages. In the first step, respondents were asked to provide their subjective assessment of the impact of the SARS-CoV-2 pandemic on the extent and intensity of earnings management practices in public companies listed on the WSE. Participants then answered supplementary questions about their previous experience with the phenomenon of earnings manipulation in business practice, the prevailing strategies of earnings management activities in the public companies they represent, and the characteristics of the company in which they were employed during the research (Table 1).

The second stage of the study consisted in comparing the significance of differences in the perception of the impact of the SARS-CoV-2 pandemic on the quality of earnings on the Polish capital market through the prism of factors describing the respondents' previous experience with the implementation of earnings manipulation activities in business life (Q2-Q4) and the characteristics of the companies represented by the participants (Q5-Q7). Due to the dominance of qualitative variables in the empirical studies, this research is based on the non-parametric chi-square test. The chi-square independence test is used to check whether there is a relationship between the nominal variables analysed. It tests the null hypothesis (H0) that the two variables studied are independent (Kendal, Stuart, 1979). The statistical tests presented in the paper were calculated using PS Imago PRO software.

The study tested the following hypotheses:

Hypothesis 1. The outbreak of the SARS-CoV-2 pandemic contributed to the intensification of earnings management practices in non-financial public companies listed on the WSE.

Hypothesis 2. There are statistical differences in the perception of the impact of the pandemic crisis on the phenomenon of earnings management between respondents who do and do not report having engaged in earnings manipulation in the companies they represent.

Hypothesis 3. Respondents' perceptions of the impact of the pandemic on earnings management behaviour are statistically different according to the size of the public company represented.

Hypothesis 4. Respondents' perceptions of the impact of the pandemic on the intensity of earnings manipulation differ statistically according to the industry in which the represented company operates.

Table 1
List of key questions used in the survey

No.	Question content	Possible answers with the assigned points
Main question		
Q1	How is the SARS-CoV-2 pandemic affecting the intensity of earnings management in public companies, with a particular focus on the companies you represent and competitors in the same industry?	*Nominal scale*: (1) the pandemic contributed to the intensification of EM practices; (2) the pandemic contributed to the reduction of EM practices; (3) the pandemic had no impact on EM practices; (4) no opinion.
Supplementary questions		
Q2	In your business practice, have you encountered any activities related to the use of balance sheet discretion to create a misleading view of the financial position of an entity?	*Nominal scale*: (1) yes, often; (2) yes, but in rare cases; (3) never (no experience); (4) no opinion.
Q3	How would you assess the current intensity of the implementation of earnings management (EM) practices in the public company you represent?	*Nominal scale*: (1) EM practices are widely applied in each financial year; (2) EM practices are applied sporadically in some financial years; (3) EM practices are not applied; (4) no opinion.
Q4	What prerequisites (strategies) for implementing profit management practices prevail in the presented enterprise?	*Nominal scale*: (1) increase revenues; (2) decrease revenues; (3) equalise revenues; (4) ambiguous goals (depending on the financial year); (5) no opinion.
Q5	What was your total sales revenue for the last financial year?	*Interval scale*: (1) up to 25 million PLN*; (2) from 25 to 100 million PLN; (3) from 100 to 250 million PLN; (4) over 250 million PLN.
Q6	What industry does the company operate in?	*Nominal scale*: (1) fuel and energy, chemical, and raw materials industries; (2) industrial and construction and assembly production; (3) consumer goods; (4) trade and services; (5) modern technologies and healthcare.
Q7	Lead statutory auditor	*Nominal scale*: (1) the Big Four; (2) another auditor.
** EUR/PLN exchange rate – 4.32 (as of February 9, 2024)*		

Source: authors' own developments

5. Results

The first step of the empirical research was to examine the impact of the SARS-CoV-2 pandemic on the nature of the earnings management phenomenon in public companies listed on the WSE. The results shown in Figure 1 indicate that the vast majority of respondents (64.5%) believe that the pandemic contributed to the intensification of earnings manipulation in public companies listed on the Polish capital market. One in five respondents believed that the SARS-CoV-2 pandemic had reduced earnings management practices, while 11.3% of experts stated that the pandemic had not affected earnings management practices. The empirical results presented allow a positive verification of the first research hypothesis, which claims that the outbreak of the SARS-CoV-2 pandemic contributed to the intensification of earnings management practices in non-financial public companies listed on the WSE, confirming the previous observations of Xiao and Xi (2021), Yan et al. (2022) or Taylor et al. (2023). More broadly, regarding the issue of the informativeness of financial reporting in turbulent periods, the obtained results are in line with the observations of Habib et al. (2013), Kumar and Vij (2017) and Lisboa and Kacharava (2018), who proved that the economic crisis should encourage managers to adopt different earnings management strategies, but the directions of earnings manipulation may be diversified. Saleh and Ahmed (2005) also found that firms that were not particularly affected by the financial crisis may, in a given context, engage extensively in earnings-oriented activities. Jahmani et al. (2016), on the other hand, showed that public companies managed their earnings much more during the recession period, which may be due to a desire to avoid or mitigate the negative consequences of the crisis.

The next part of the empirical research concerns the statistical test of the factors determining the participants' judgement of the impact of the pandemic on earnings manipulation behaviour on the Polish capital market (Table 2). On the basis of the Chi-square test (list of significant predictors) it was proved that the perception of the SARS-CoV-2 pandemic as a significant driver of changes in earnings management patterns could be statistically related to such variables as the respondents' previous experience with earnings manipulation activities (Q2), the current intensity of earnings management in the represented companies (Q3) and the size of the companies as measured by sales revenues (Q5). Detailed characteristics of the above relationships are discussed later. On the other hand, this research did not show that the perception of the pandemic crisis as a factor in modifying existing models of earnings management behaviour was statistically related to the earnings manipulation strategies adopted (e.g., earnings management up or down), the industry in which the firm operates (Q6) and the auditor's main affiliation to the Big Four (Q7).

The in-depth empirical results obtained lead to the conclusion that the more often participants

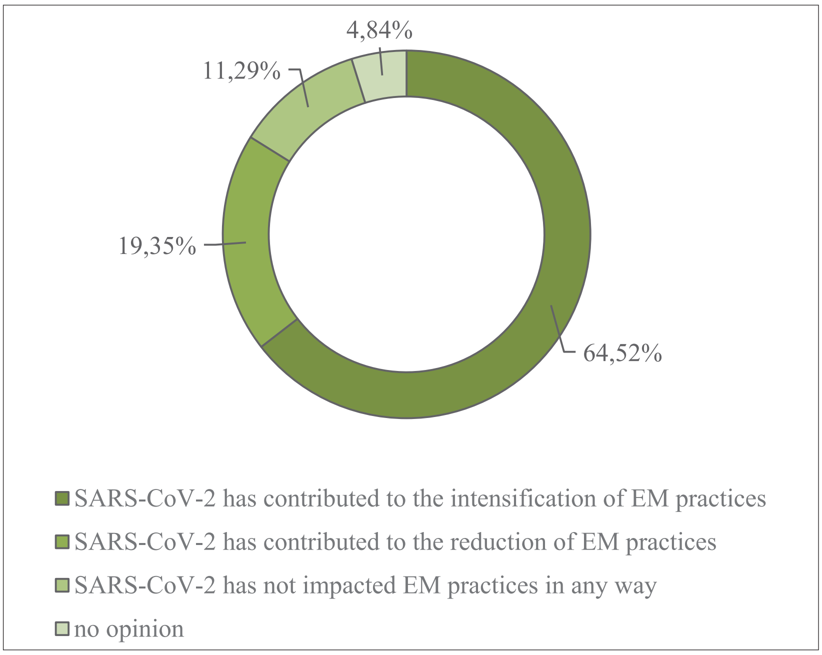

Figure 1. Respondents' answers about the impact of the SARS-CoV-2 pandemic on the intensity of profit management practices

Source: authors' own developments

Table 2
List of variables that influence the perception of the pandemic as a factor of changes in earnings management behaviour

List of significant predictors – Chi-square test					
Reference	Significant	Independent variable	Asymptotic significance (2-sided)	df	Value
Respondents' experience in earnings management (EM)	**Yes**	**Q2**	**0.000**	**6**	**134.031**
	Yes	**Q3**	**0.043**	**6**	**13.027**
	No	Q4	0.316	9	10.443
Specifics of the represented public company	**Yes**	**Q5**	**0.028**	**9**	**18.721**
	No	Q6	0.881	12	6.626
	No	Q7	0.328	3	3.443

Source: authors' own developments

experienced the phenomenon of earnings management in their professional practice, the more often they expressed their belief in the intensification of earnings manipulation activities due to the crisis caused by the outbreak of the SARS-CoV-2 pandemic (Figure 2). It is worth noting that respondents who stated that they had not encountered intentional earnings manipulation in their working lives were more likely to choose neutral responses to the question.

Respondents who explicitly stated that the companies they represent deliberately manipulate the reported profit (loss) were much more confident about the negative impact of the pandemic crisis on the quality of reported earnings on the Polish capital market (Figure 3). It is worth noting that of the 29% of participants who admitted to engaging in earnings management practices, only a small percentage of them stated that they changed their earnings every financial year. However, the presented results of the study allow us to positively verify the second hypothesis, namely, that in the studied population there are statistical differences in the perception of the impact of the pandemic crisis on the phenomenon of earnings management between participants who declare the implementation of earnings manipulation practices and those who do not. This study confirms the conclusions of Baskaran et al. (2020), who pointed out that the extent to which managers influence the reported accounting data interacts with the perception of the practice of intentionally influencing the company's financial results. This observation also emphasises that research demonstrating the dependence of perception on context (background) in the analysis of economic

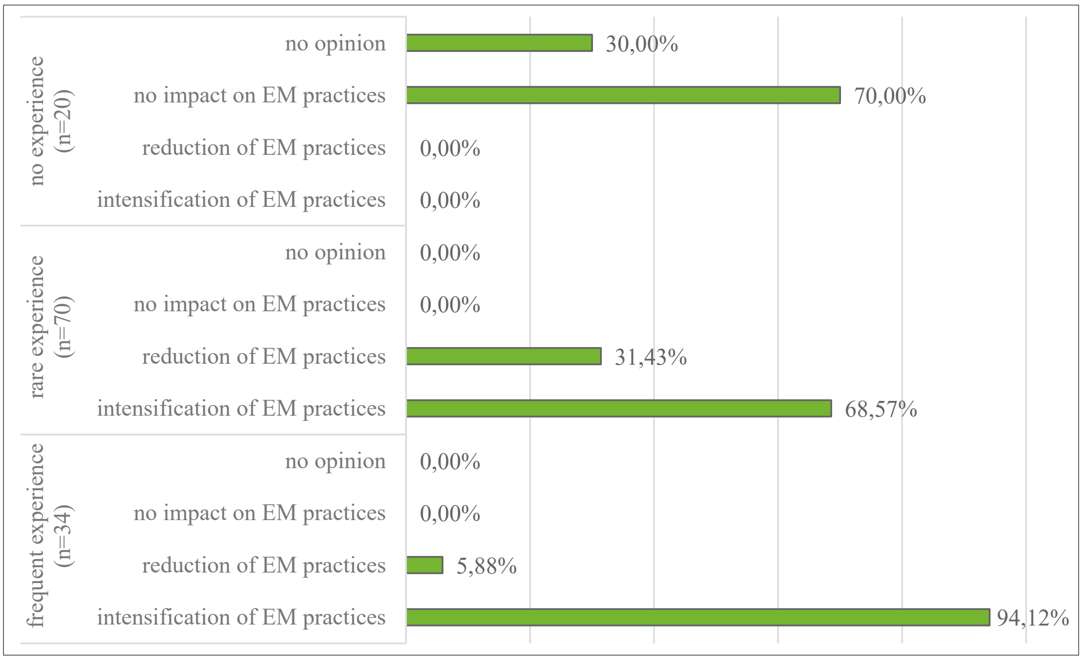

Figure 2. The perception of the impact of the SARS-CoV-2 pandemic on earnings management behaviour depends on the respondents' previous experience with earnings manipulation

Source: authors' own developments

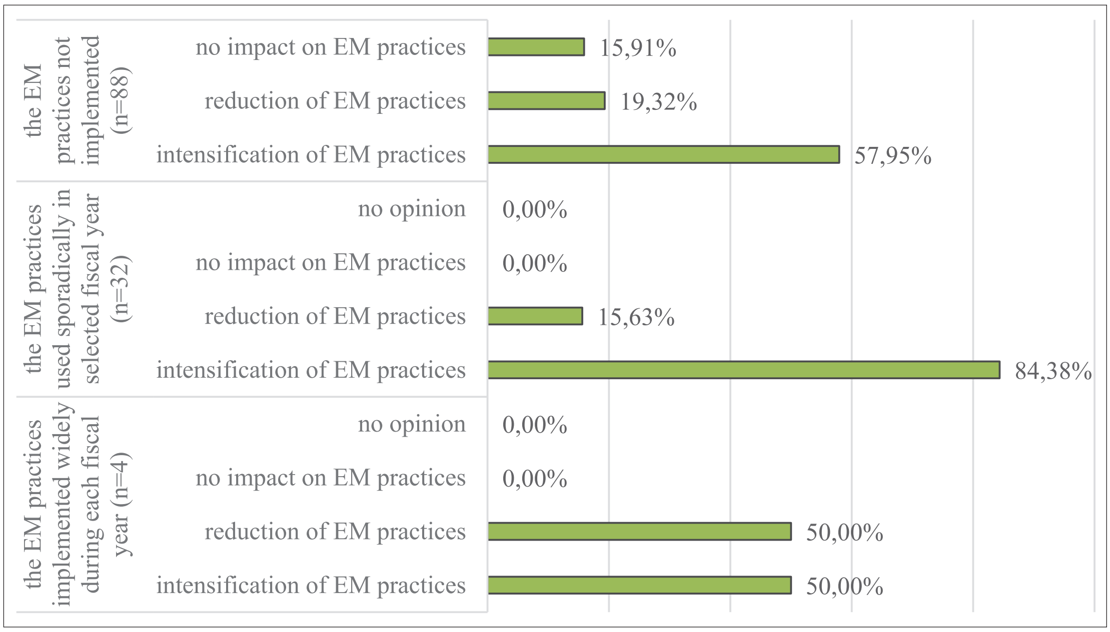

Figure 3. Perception of the impact of SARS-CoV-2 on earnings management behaviours depends on the current intensity of earnings manipulation in the companies represented by the respondents

Source: authors' own developments

behaviour seems interesting, as contextual changes may influence how respondents judge the same object (phenomenon).

The survey revealed that participants representing companies with lower revenues (up to 25 million PLN) had a different perception of the impact of the SARS-CoV-2 pandemic on the phenomenon of earnings management in the Polish capital market than other respondents (Figure 4). The predominant percentage of respondents (about 37%) from smaller companies stated that in their opinion the pandemic had not influenced the change in earnings management patterns. However, among the remaining respondents representing companies with higher revenues from core operating activities, there is a clear dominance of participants (around 70% in each of the sub-populations tested) who are convinced that the pandemic has led to an increase in the intensity of earnings management practices, and thus to a deterioration in the quality of reported data. This study is in line with the findings of Bassiouny (2016), who noted that large firms may incur higher agency costs, which may encourage them to intensify earnings management activities. Similar observations were presented by Barton and Simko (2002), who proved that large companies are under greater pressure to change earnings in order to maintain a positive image of the organisation. Similar conclusions are also presented in the studies of Charfeddine et al. (2013) and Siekelova et al. In the course of the research, the third hypothesis, which states that the respondents' perceptions of the impact of the pandemic crisis on earnings management behaviour differ according to the size of the public company represented, was positively confirmed.

As mentioned above, this research did not find any statistical relationships between respondents' perceptions of the impact of the pandemic on earnings manipulation and the industry in which the represented company operates, leading to a rejection of the fourth hypothesis. However, existing research in this area is inconclusive. While De Almeida et al. (2005) and Wasiuzzaman (2018) collected evidence that industry classification does not explain the variance in earnings management activities, Durana et al. (2022) presented quite different results, arguing that industry competitiveness can reveal the volatility of earnings management across industries. In turn, Dilger and Graschitz (2015) found that the assessment of the differentiation of earnings management behaviour across industries depends on the scaling variable used to extract individual industries.

6. Conclusions

Earnings play an important role in assessing the financial performance and future prospects of companies (Lizińska, Czapiewski, 2023). Due to its accrual nature, reported financial income is susceptible to deliberate manipulation in line with managers' prior intentions. Hence, studies on specific incentives that cause changes in the current patterns of earnings

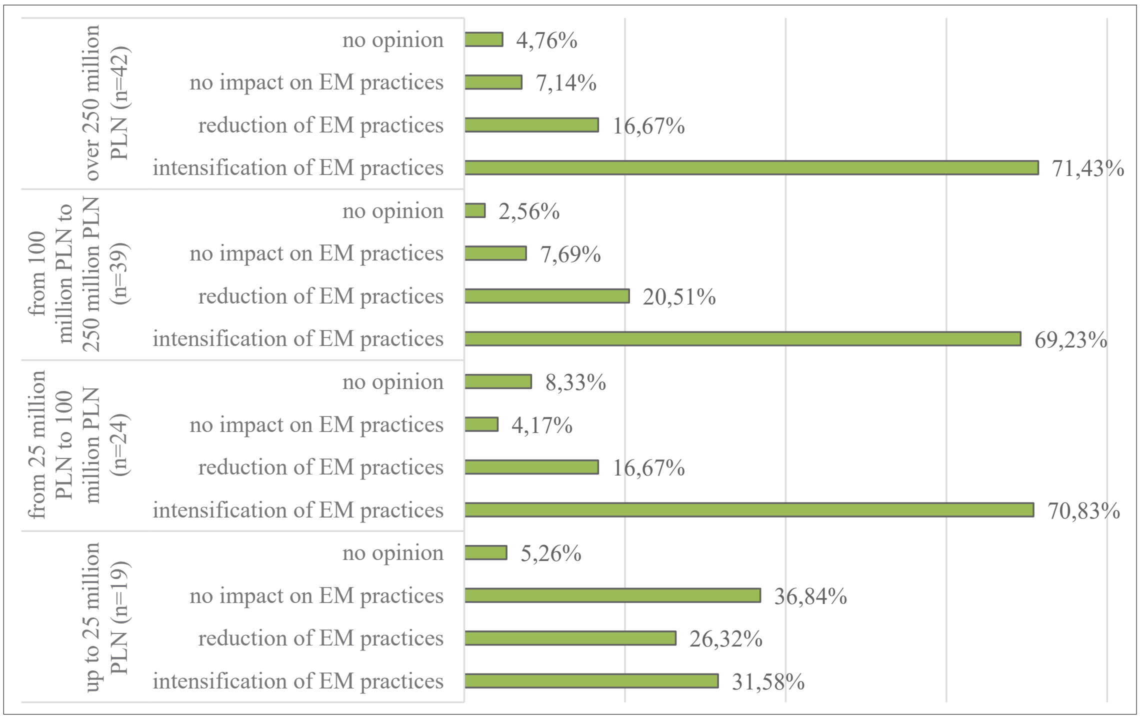

Figure 4. The perceived impact of SARS-CoV-2 on earnings management behaviour depends on the size of the public company represented (calculated by sales revenue)

Source: authors' own developments

management are part of the mainstream of earnings quality research in public companies.

This paper examines the impact of the SARS-CoV-2 pandemic turbulence on the extent and intensity of earnings management practices according to the opinions of finance and accounting specialists representing non-financial companies listed on the Warsaw Stock Exchange. Contrary to most of the existing research on the subject, this research is not based on the assessment of the estimated values of discretionary accruals separated by various econometric models, but refers to the experience of specialists who understand the specificity of the Polish capital market. The results of the research showed that most respondents believed that the SARS-CoV-2 pandemic contributed to an increase in earnings management activities in listed companies. In addition, respondents who stated that the companies they represented deliberately manipulated the reported profit (loss) were much more confident about the negative impact of the pandemic crisis on the quality of reported earnings. An interesting conclusion from the research is that respondents who had experienced earnings manipulation in their professional practice were more likely to believe that the pandemic had distorted the credibility of reported data. This observation opens the field for further research into the impact of contextual changes on perceptions of economic behaviour. This study also provided statistical evidence that representatives of larger companies were more likely than respondents from smaller companies to report that the economic turbulence associated with the SARS-CoV-2 pandemic contributed to an intensification of earnings management. Nevertheless, the variable indicating the size of the company was only considered through the prism of the turnover generated, which may represent a certain limitation.

This study has several implications for capital market participants. Primarily, this investigation draws investors' attention to the deterioration of public companies' financial reporting during the SARS-CoV-2 pandemic. The intensification of earnings manipulation can contribute not only to distorting the current perception of a company's economic performance, but also to deteriorating the future value of companies, especially when managers decide to alter earnings through real earnings management measures. On the other hand, the empirical results presented here provide valuable information for statutory auditors, as they highlight potential audit risks in public companies that may arise after the outbreak of the SARS-CoV-2 pandemic. However, this study also had certain limitations. The sample of 37.1% of all potential public companies participating in the study allowed to obtain results with a maximum margin of error of 7% (assuming a confidence level of 0.95 and a sample size of 0.5). Furthermore, the issue of revenue manipulation is still considered sensitive in the business community. As Szyjewski and Szyjewski (2017) point out, a large number of respondents, when confronted with a difficult or awkward question in the survey questionnaire, may give a random answer that is inconsistent with the factual situation, which will distort the results of the survey – even if the research remains completely anonymous.

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