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ACCRUAL-BASED EARNINGS MANAGEMENT BEFORE AND AFTER THE COVID-19 SHOCK: CROSS-COUNTRY EVIDENCE FROM EU MANUFACTURING FIRMS

Received: 27. 3. 2026.
Accepted: 15. 7. 2026.
DOI https://doi.org/10.30924/mjcmi.31.2.1

Original scientific paper

ABSTRACT

This study explores accrual-based earnings management during the COVID-19 shock (2020) and the early recovery period (2021). The research sample includes data on publicly listed manufacturing firms from 17 selected EU countries, while the event period covers 2019, 2020 and 2021. The baseline models estimate discretionary accruals using the performance-matching approach. For a more nuanced results, separate FE panel models were estimated for total, income-decreasing, and income-increasing discretionary accruals. The estimated FE panel models include year dummy variables, lagged firm-level variables and country-level variables. The empirical findings reveal that the COVID-19 crisis in 2020 was associated with an increase in overall and income-decreasing discretionary accruals, while it was negatively associated with income-increasing discretionary accruals. The observed pattern changed in 2021, when total and income-decreasing discretionary accruals declined and income-increasing discretionary accruals increased. The main research findings remain broadly robust to alternative treatment of extreme observations, estimation of discretionary accruals with the Modified Jones model and institutional and industry subsamples. The research contributes to the existing literature by providing more nuanced evidence for income-increasing and income-decreasing earnings management during periods of economic turmoil. Empirical findings reinforce the view that earnings management is not static, but rather dynamic, adapting to changing incentives during different stages of economic disruptions.

KEYWORDS: *earnings management, accruals, COVID-19, EU countries*

1. INTRODUCTION

The topic of earnings management has been widely debated for decades following major corporate scandals in the 2000s (Enron, AOL, Nicor, AIG, etc.), as it alters reported performance and reduces the reliability of financial statements (Healy & Wahlen, 1999; Chen et al., 2023). Despite extensive research on this accounting phenomenon findings are ambiguous, especially during periods of economic turmoil. Crisis periods are characterized by changes in financial reporting incentives and constraints regarding managerial decisions (Lizinska & Czapiewski, 2023). Economic crises have different impacts on managerial behavior,

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as they increase uncertainty, intensify existing agency conflicts, and place firms under financial and reputational pressure. Earnings management can be realized through discretionary accruals or real activity adjustments (Roychowdhury, 2006). Accrual-based earnings management (AEM) requires selecting accounting estimates/policies to align with management's expectations, causing an increase or decrease in the accrual component of earnings (Aljughaiman et al., 2023). An alternative is real earnings management (REM), which refers to changes in business strategies and decisions to achieve managerial financial reporting objectives (Dang & Dung, 2024).

The existing earnings management literature reveals mixed results regarding firms' responses during crisis. One set of studies reveals that firms intensify earnings management during periods of crisis to reduce decline in reported profits, maintain investor confidence, or meet the existing debt covenants thresholds (Lisboa & Kacharava, 2018; Lassoued & Khanchel, 2021; Chen et al., 2023; Lizińska & Czapiewski, 2023). In contrast, a second set of papers reports a decline in managerial discretion over earnings during crisis (Gorgan et al., 2012; Filip & Raffournier, 2014; Cimini, 2015; Garfatta et al., 2023; Kim et al., 2024) suggesting that stricter monitoring and lower performance expectations reduce managers' incentives to manipulate earnings. Despite extensive literature, some research gaps remain unexplored. Firstly, the majority of papers on earnings management during crisis relate to large developed countries and single-country datasets. Cross-country studies, especially those covering EU member countries during COVID-19, are still limited. Secondly, studies focus only on the crisis year, while behavior during early recovery period remains unexplored. Finally, the majority of previous papers explore absolute accrual-based earnings management, without distinguishing income-increasing from income-decreasing earnings management. Separately analyzing income-increasing and income-decreasing discretionary accruals provides a more nuanced understanding of firms' behavior during different phases of the crisis.

Research on a sample from the manufacturing industry provides an ideal setting to examine accrual-based earnings management due to its relatively homogeneous cost structure, sensitivity to crisis, and exposure to COVID-19 effects. The selected research window, covering the years 2019–2021, offers an experimental setting to capture both the immediate effects of the COVID-19 shock and early recovery adjustments. Hence, the primary objective of this research is to examine whether accrual-based earnings management differed during the COVID-19 crisis year (2020) and the early recovery period (2021) relative to the pre-pandemic year (2019). As a secondary objective, the research examines the associations between selected firm-level characteristics and country-level factors and accrual-based earnings management. Including these explanatory variables enables the effects of firm-specific and country-level features to be captured, thereby reducing the possibility that the observed associations for the COVID-19 period reflect only inherent cross-firm or cross-country heterogeneity.

The empirical evidence reveals that the COVID-19 period was associated with substantial changes in accrual-based earnings management. While the COVID-19 crisis year (2020) was associated with an increased magnitude of income-decreasing discretionary accruals, the early recovery period (2021) was associated with an increased magnitude of income-increasing discretionary accruals. These associations remain broadly robust across several robustness and heterogeneity analyses. This study contributes to the existing accrual-based earnings management literature from several perspectives. It provides rare cross-country evidence on accrual-based earnings management among EU manufacturing firms during the COVID-19 period, covering both the crisis and early-recovery periods. It advances the existing literature by distinguishing between income-increasing and income-decreasing earnings management and reinforcing the evidence that earnings management is not static but rather dynamic and adaptive to changing incentives during different stages of a crisis. The findings from this research provide some practical guidelines for major users of financial statements. The empirical evidence suggests that financial statement users should take into account that earnings management incentives may differ across periods of severe crisis and subsequent recovery. Consequently, reported financial statements should be interpreted together with changes in accounting policies/estimates.

The paper is divided into five sections. After the introduction, the second section presents major findings from the existing literature. The third section of the paper describes the data selection procedure, the research sample structure by country, and research variables. The main empirical findings are discussed in the fourth section, which is followed by the concluding remarks.

1. LITERATURE REVIEW

Earnings management is often defined as managers' intervention in financial reports to achieve a desired level of reported profits (Healy & Wahlen, 1999). This managerial strategy can be realized through two main mechanisms, accrual-based earnings manage-

TABLE 1. Expected Signs of the Associations Between Explanatory Variables and Income-Increasing and Income-Decreasing Discretionary Accruals

Variable	Expected sign with $\|DA^{+}\|$	Expected sign with $\|DA^{-}\|$
COVID-19 crisis year (2020)	–	+
Early recovery period (2021)	+	–
Profitability	+/–	+/–
Leverage	+/–	+/–
Firm size	–	+
Operating cash flow	+/–	–
GDP growth	–	–
Rule of Law	–	–

Source: Authors

ment and real activities earnings management. Accrual-based earnings management involves manipulating earnings through accounting items, such as provisions, depreciation, and working capital, while real earnings management involves altering actual business decisions related to sales timing, production, or discretionary expenses (Graham et al., 2005). Zang (2012) argues and empirically demonstrates that firms choose and switch between accrual-based earnings management and real earnings management according to their relative costs. In EU manufacturing firms during the COVID-19 crisis, the decline in demand, the large portion of fixed costs, disruptions to supply chains and production processes probably increased the costs of real earnings management (accelerating sales, selling at discount prices, investing in long term assets, etc.), making accrual-based earnings management a relatively more feasible alternative. Consequently, accrual-based earnings management represented a relatively more feasible mechanism for influencing reported accounting numbers during the COVID-19 pandemic. Therefore, this study focuses on accrual-based earnings management. A key methodological issue in this type of accounting research is the measurement of discretionary accruals. The literature traditionally relies on the models of Jones (1991), Dechow et al. (1995), and Kothari et al. (2005). In most previous research in this field, discretionary accruals are observed as absolute values, capturing the magnitude of manipulation. The distinction between income-increasing and income-decreasing discretionary accruals, however, remains underexplored, especially in the context of crisis periods. Income-increasing earnings management is usually associated with signaling or contracting motives, while income-decreasing earnings management is related to Big-Bath and Political Cost hypotheses.

Previous empirical findings regarding accrual-based earnings management during economic turmoil are largely ambiguous. Some studies examining the Global Financial Crisis (GFC) report decline in earnings management, attributed to stricter creditor monitoring and more conservative reporting (Gorgan et al., 2012; Filip & Raffournier, 2014; Cimini, 2015; Al-Mughrabi, 2020). However, other studies provide evidence of increasing earnings management resulting from stronger incentives to report better financial performance (Lisboa, 2016; Lisboa & Kacharava, 2018). We find similar mixed results in the COVID-19-related earnings management literature. Although many studies report increased accrual-based earnings management during COVID-19 (Lassoued & Khanchel, 2021; Yan et al., 2022; Hsu & Yang, 2022; Aljughaiman et al., 2023; Xiao & Xi, 2023; Lizińska & Czapiewski, 2023), other studies report stable or even declining earnings management (Ali et al., 2022; Garfatta et al., 2023; Kim et al., 2024). Agency theory suggests that economic crises increase information asymmetry between managers and external stakeholders, thereby expanding managerial discretion over financial reporting (Jensen & Meckling, 1976). At the same time, the direction of earnings management is expected to vary across different stages of economic turmoil. During the initial phase of the COVID-19 pandemic, managers may have stronger incentives to recognize losses and adopt more conservative accounting. Namely, the decline of financial results is already anticipated by investors, creditors and other stakeholders. Such firm behavior is consistent with the Big-Bath hypothesis (Healy, 1985; Scott, 2015), according to which managers exploit exceptionally adverse economic conditions to recognize larger losses that may facilitate improved future performance. Conversely, as the economic environment gradually recovers; signaling theory (Scott, 2015) suggests that managers may have stronger incentives to communicate favorable private information regarding firms' financial resilience and recovery

prospects through accounting discretion. Accordingly, the COVID-19 crisis year (2020) is expected to be associated with a greater magnitude of income-decreasing discretionary accruals, whereas the subsequent recovery period (2021) is expected to be associated with a greater magnitude of income-increasing discretionary accruals (Table 1).

Unlike the COVID-19-crisis-related variables, the majority of the remaining regressors are characterized by competing theoretical expectations. Firms that are more profitable generally have a greater level of accounting flexibility and may smooth reported accounting earnings to maintain stable financial performance or meet investors' expectations. In contrast, less profitable firms often experience stronger incentives to manipulate earnings in order to hide financial difficulties, avoid reporting losses or meet contractual obligations. Recent empirical studies (Lassoued & Khanchel, 2021; Aljughaiman et al., 2023; Yaşar & Yalçın, 2024; Yan et al., 2024) also provide inconsistent findings regarding the direction of this relationship. Consequently, although profitability is expected to be associated with accrual-based earnings management, no clear directional prediction is proposed. The debt covenant hypothesis (Watts & Zimmerman, 1986) predicts that highly leveraged firms have a stronger impetus to report higher accounting earnings to avoid breaching debt covenants and ensure access to debt financing. According to this hypothesis, leverage should be positively associated with income-increasing discretionary accruals. Many earnings management papers (Franz et al., 2014; Lazzem & Jilani, 2017; Garfatta et al., 2023; Pervan et al., 2024) empirically confirm such a positive relationship between leverage and accrual-based earnings management. In contrast, the creditor-monitoring hypothesis argues that more indebted firms are subject to more intensive scrutiny by creditors (Lisboa & Kacharava, 2018; Yan et al. 2022; Aljughaiman et al., 2023; Siagian & Handika 2024). Strict oversight by creditors reduces managerial discretion over accounting policies/estimates and limits earnings management. Because the net effect depends on the relative strength of contracting incentives and external monitoring, the expected association between leverage and discretionary accruals remains ambiguous.

The Political Cost Hypothesis from Positive Accounting Theory (Watts & Zimmerman, 1986) predicts that managers of larger firms have incentives to adopt income-decreasing accounting choices in order to reduce political visibility and avoid potential regulatory intervention. Larger firms generally operate under greater scrutiny from external auditors, financial analysts, institutional investors and regulators, while simultaneously using more developed internal control systems. These characteristics of larger firms may reduce opportunities for aggressive financial reporting and are expected to constrain income-increasing discretionary accruals. Empirical findings on firm size in accordance with Political Cost Hypothesis are reported by many recent papers (Lisboa & Kacharava, 2018; Paiva et al., 2019; Lassoued & Khanchel, 2021; Chen et al., 2023; Atayah et al., 2024; Yaşar & Yalçin 2024). Operating cash flow (OCF) performance may influence accrual-based earnings management through two theoretical approaches. From the perspective of agency theory, firms generating stronger OCF face reduced dependence on debt financing. Consequently, managers have reduced incentives to exploit aggressive accounting discretion, suggesting a negative association between OCF and both income-increasing and income-decreasing discretionary accruals. In contrast, signaling theory takes the position that managers of firms with strong OCF performance may use accounting policies/estimates to communicate favorable private information about future performance. These competing arguments suggest that OCF may influence both directions of discretionary accruals, without providing a clear ex ante prediction. Several empirical studies (Habib et al., 2013; Al-Mughrabi, 2020; Yan et al., 2022) report a negative association between OCF and accrual-based earnings management, suggesting that firms with stronger OCF have reduced incentives to manipulate reported earnings. However, studies by Lisboa (2016), Aljughaiman et al. (2023) and Yaşar & Yalçın (2024) report a positive association, indicating that the relationship remains ambiguous.

Our cross-country sample requires the inclusion of country-level variables to capture differences in firms' macroeconomic and institutional environments. Economic growth generally improves the business environment and reduces pressures for aggressive financial reporting. Stronger Rule of Law is expected to constrain managerial discretion through better contract enforcement, investor protection and regulatory oversight. However, the existing evidence suggests that institutional quality moderates rather than completely eliminates crisis-related and firm-related earnings management incentives. Consequently, country-level variables should be introduced primarily to isolate the associations between the COVID-19 period and discretionary accruals from broader macroeconomic and institutional influences. Taken together, the previously presented theoretical arguments suggest that the COVID-19 period is expected to exhibit differences in reporting behavior across the crisis year and the recovery year, whereas the remaining firm-level regressors are characterized by competing incentives that justify mainly non-directional hypotheses. This approach is consistent with the mixed empirical evidence reported in the previous literature and recognizes the com-

plexity of incentives related to accrual-based earnings management.

2. RESEARCH DATASET AND VARIABLES

The dataset for empirical research was retrieved from the Orbis database in September 2025. To ensure a higher level of consistency in the dataset, the focus was on listed firms from a single industry – manufacturing. More precisely, all EU manufacturing firms with codes 10-32 were selected in the Orbis database. An additional selection criterion was a minimum annual revenue of EUR 500,000 during the period 2015–2021. With these criteria, the initial research sample included 1,136 EU firms with available consolidated or unconsolidated financial statements (4,544 firm-year observations). EU countries with fewer than 10 firms per year were excluded from the sample. In this step, 10 EU member states and 55 related firms (220 observations) were removed from the sample. After this elimination, the research sample included 1,081 firms from 17 EU countries (Table 2) with 4,324 firm-year observations.

The first step of the analysis required estimating the beta parameters from Equations 2 and 3 during the estimation period (2015–2018). However, a significant portion of the sampled listed firms had missing data, so the number of firm-year observations was reduced from 4,324 to 3,433. A comparison of firm-year observations in the research sample used for beta parameter estimation and excluded firm-year observations (due to missing data) reveals some differences in the profile of observations. T-test revealed that firms with missing data are, on average, significantly smaller ($t = -26.7$; $p < 0.001$) and less profitable ($t = -5.9$; $p < 0.001$) than firms included in the research sample. Therefore, although the estimated panel models control for firm profitability and size, the empirical results should primarily be interpreted as reflecting the accrual-based earnings management behavior of relatively larger and more profitable EU manufacturing firms. The observed profile of firms with missing data points to the necessary caution when generalizing the results to smaller or less profitable manufacturing firms. Given the cross-country structure of our research sample, we estimated separate models for each country to obtain the beta coefficients from Equations 2 and 3. Namely, accrual-generating practices may differ across the selected EU countries because of variations in institutional quality, the effectiveness of law enforcement and audit quality. For this (first) part of the analysis, we employed fixed-effects (FE) panel regressions with year dummy variables and firm-level clustered standard errors to control for unobserved time-invariant firm-specific characteristic.

The proxy variable measuring accrual-based earnings management practices – discretionary accruals (DA_{it}) for each firm i in period t – is computed as the difference between actual accruals (AA_{it}) in the event period (2019–2021) and the non-discretionary accrual component (NDA_{it}) in the same period.

$$DA_{it} = AA_{it} - NDA_{it} \quad (1)$$

The non-discretionary component of accruals is calculated using the betas from the model developed by Kothari et al. (2005) – Equation 2 and Dechow et al. (1995) – Equation 3:

$$\frac{TAC_{it}}{TA_{it-1}} = \beta_0 + \beta_1 \frac{1}{TA_{it-1}} + \beta_2 \frac{\Delta RE_{it} - \Delta RC_{it}}{TA_{it-1}} + \beta_3 \frac{PPE_{it} - \Delta RC_{it}}{TA_{it-1}} + \beta_4 ROA_{it} \quad (2)$$

$$\frac{TAC_{it}}{TA_{(it-1)}} = \beta_0 + \beta_1 \frac{1}{TA_{it-1}} + \beta_2 \frac{\Delta RE_{it} - \Delta RC_{it}}{TA_{it-1}} + \beta_3 \frac{PPE_{it} - \Delta RC_{it}}{TA_{it-1}} \quad (3)$$

where TAC stands for total accruals, TA for total assets, RE for revenues, RC for receivables, PPE for property, plant, and equipment, and ROA for the ratio of net earnings to total assets. Finally, TAC is calculated using the balance sheet approach, which has been used in many previous studies (El Diri, 2018; Kliestik et al., 2020; Pervan et al., 2024):

$$TAC_{it} = \Delta RC_{it} + \Delta IN_{it} - \Delta AP_{it} - D\&A_{it} - \Delta PR_{it} \quad (4)$$

According to Equation 3, total accruals include change in receivables (ΔRC), change in inventory (ΔIN), change in accounts payable (ΔAP), depreciation & amortization (D&A), and change in provisions (ΔPR).

The second step of the analysis requires estimating models for the event period to capture the association between COVID-19 and discretionary accruals, while controlling for other firm-level and country-level variables. A broader review of the existing literature indicates that the accrual-based earnings management phenomenon might be influenced by variables other than the crisis. Therefore, other potentially relevant regressor variables from Table 3 are included in the model during the event period. Our event period includes data from the pre-COVID-19 period (2019), the COVID-19 shock (2020), and the early recovery period (2021). The year 2021 is characterized as the early recovery period, due to the gradual reopening of EU economies, improving macroeconomic conditions, and the continued presence of pandemic-related restric-

TABLE 2. Sample selection by EU countries

EU country	Number of firms	Number of observations (N)	Observations percentage
Austria	23	92	2.1%
Belgium	36	144	3.3%
Bulgaria	31	124	2.9%
Croatia	22	88	2.0%
Cyprus	12	48	1.1%
Denmark	36	144	3.3%
Finland	53	212	4.9%
France	167	668	15.4%
Germany	154	616	14.2%
Greece	41	164	3.8%
Ireland	26	104	2.4%
Italy	73	292	6.8%
Netherlands	37	148	3.4%
Poland	109	436	10.1%
Romania	82	328	7.6%
Spain	38	152	3.5%
Sweden	141	564	13.0%
Total sample	1,081	4,324	100%

SOURCE: Orbis database

tions. In this step of the analysis, we again employed fixed-effects (FE) panel regressions with firm-level clustered standard errors, according to Equation 5:

$$DA_{(i,t)}=\beta_0+\beta_1 ROA_{i,t-1}+\beta_2 LEV_{i,t-1}+\beta_3 SIZE_{i,t-1}+\beta 4 OCF_{i,t-1}+ \beta_5 GDP_AG_t+\beta_6 ROL_GS_t+\beta_7 2020+\beta_8 2021+\mu_i+\varepsilon_{i,t} \quad (5)$$

Bearing in mind that discretionary accruals (DA) are calculated using numerous elements from the balance sheet, there is a real possibility of endogeneity in the estimated model. Therefore, all influential firm-level variables (ROA, LEV, SIZE and OCF) are used with a one-period lag (t-1), while country-level variables are treated as exogenous.

3. EMPIRICAL RESULTS AND DISCUSSION

As mentioned earlier, the research dataset consists of 1,081 firms and 4,324 firm-year observations from 17 EU countries. Outliers for all continuous variables from Equation 5 were identified separately for each year in the event period (2019, 2020 and 2021) and in 2018 (due to lagged firm-level variables), rather than over the pooled panel. Year-based outlier detection (± 3 standard deviations) and removal preserve the original variation associated with COVID-19, while ensuring comparable treatment of outliers in each year. After eliminating 293 observations with a deviation greater than three standard deviations, the research sample was reduced to 4,031 observations. The entire statistical analysis was performed using STATA 13. Summary statistics (Table 4) indicate that the average value of the regressand variable (DA_K_t) from the baseline model is relatively close to zero (-0.0474), with a standard deviation of 0.1254. The ROA_{t-1} variable averages 2.76% but displays substantial dispersion, suggesting significant differences in profitability among observations. The average value of LEV_{t-1} is 50.17%, indicating moderate use of debt for financing. The mean value of firm size, measured as the ln of total assets, is 12.30, with considerable size variation across firms. The OCF variable has a mean of 0.070, indicating that sampled firms on average report positive operating cash flow. The average annual GDP growth rate of

TABLE 3. Variables included in the research

Variable	Label	Definition
Discretionary accruals	DA_K	Measured by the "Performance matching" earnings management model of Kothari et al. (2005)
	DA_MJ	Measured by "Modified Jones" earnings management model proposed by Dechow et al. (1995)
Profitability	ROA	$(\text{Net profit}_t/\text{Assets}_t)*100$
Leverage	LEV	$(\text{Liabilities}_t/\text{Assets}_t)*100$
Size	SIZE	Ln of assets
Operating cash flow	OCF	$\text{Operating Cash Flow}_t/\text{Assets}_t$
Annual growth of country GDP	GDP_AG	$(GDP_t - GDP_{t-1})/ GDP_{t-1}*100$
Country rule of law governance score	ROL_GS	The indicator (percentile score from 0 to 100) published by World bank incorporates perceptions of six elements: Contract enforcement, Property rights protection, Judicial effectiveness, Police effectiveness and Crime and violence
COVID-19 crisis	2020	1 for observations from the COVID-19 year 2020, 0 otherwise; 2019 dummy used as referent value
Early recovery period	2021	1 for observations from the early recovery year 2021, 0 otherwise; 2019 dummy used as referent value

SOURCES: Authors, https://www.worldbank.org/en/publication/worldwide-governance-indicators/interactive-data-access, https://databank.worldbank.org/source/world-development-indicators

1.29% is moderate, however it is ranging from a sharp decline in 2020 (-10.80%) to strong economic recovery in 2021 (12.63%). The average value of ROL_GS_t of 77.17 indicates a relatively strong institutional environment across the 17 selected EU countries, although the variation in the variable reveals cross-country differences in legal enforcement and institutional quality.

The correlations among the dependent and independent variables used in the modeling are presented in Table 5. The dependent variable (DA_K_t) is significantly correlated (at the 1% level) with most explanatory variables (except for ROA_{t-1} and LEV_{t-1}). Correlations among regressors are below 0.7, suggesting that multicollinearity is not a statistical problem, thereby supporting the suitability of the data for multivariate analysis.

Table 6 presents the FE panel results for three variants of the dependent variable in the baseline model: absolute discretionary accruals - IDA_KI, income-decreasing discretionary accruals - IDA_K^-I and income-increasing discretionary accruals - IDA_K^+I. The estimated coefficients of determination (R^2) range from 3.89% to 19.03%, representing a level of model fit comparable to that in previous similar studies (Aljughaiman et al., 2023; Yaşar & Yalçin, 2024; Kim et al., 2024). To explore the association between the COVID-19 pandemic and accrual-based earnings management, we applied an FE panel model which was selected through the standard procedure. Firstly, we conducted an F-test, which strongly rejected the pooled OLS model ($F = 151.69$, $p < 0.001$). Then, the Breusch–Pagan Lagrange Multiplier test indicated that a panel model was preferred over the pooled OLS model ($\chi^2 = 133.31$, $p < 0.001$). Finally, the Hausman test ($\chi^2 = 62.45$, $p < 0.001$) revealed that firm-specific effects were correlated with the independent variables, indicating that the FE panel model as the most appropriate for the analysis. To account for potential serial correlation and heteroskedasticity within firms, standard errors were clustered at the firm level.

The findings from Table 6 reveal that accrual-based earnings management differed between the COVID-19 crisis period (2020) and the early recovery period (2021), both in its overall magnitude and in the magnitudes of income-increasing and income-decreasing discretionary accruals. Estimating separate

TABLE 4. Descriptive statistics

Variable	Obs. (N)	Mean	Std. dev.	Min.	Max.
DA_K_t	2,434	-0.047403	0.125378	-0.790199	1.072404
ROA_{t-1}	2,917	2.760647	8.690202	-42.586	41.659
LEV_{t-1}	2,910	50.16907	20.73714	1.92	124.229
$SIZE_{t-1}$	2,919	12.29979	2.491358	5.971663	19.52739
OCF_{t-1}	2,656	0.0701859	0.085902	-0.4039142	0.4350601
GDP_AG_t	3,005	1.294572	5.003663	-10.94007	12.63222
ROL_GS_t	3,005	77.16837	10.80255	54.37	93.26

SOURCE: Author's calculations

TABLE 5. Correlation analysis

	DA_K_t	ROA_{t-1}	LEV_{t-1}	$SIZE_{t-1}$	OCF_{t-1}	GDP_AG_t	ROL_GS_t
DA_K_t	1.0000						
ROA_{t-1}	-0.0190	1.0000					
LEV_{t-1}	-0.0288	-0.2479***	1.0000				
$SIZE_{t-1}$	-0.1262***	0.0747***	0.0651***	1.0000			
OCF_{t-1}	-0.0686***	0.5888***	-0.0794***	0.0681***	1.0000		
GDP_AG_t	0.1669***	-0.0252	-0.0414**	-0.0648***	0.0215	1.0000	
ROL_GS_t	-0.1942***	0.0714***	0.1240***	0.1676***	0.1374***	-0.0703***	1.0000

Correlations significance: *** p < 0.01; ** p < 0.05; * p < 0.10
SOURCE: Author's calculations

models for lDA_Kl, lDA_K^-l, and lDA_K^+l enables a more nuanced analysis of manufacturing firm behavior compared with the classical approach using only absolute accruals. The obtained results indicate that both the overall magnitude and the pattern of income-increasing and income-decreasing discretionary accruals significantly changed between the COVID-19 crisis year and the early recovery year. Such findings are in line with prior studies (Kumar & Vij, 2017; Türegün, 2019), which suggest that earnings management behavior is not static but rather dynamic, depending on changing incentives. The positive coefficient on the 2020 dummy is statistically significant (at the 1% level) in the lDA_Kl model, revealing that the overall magnitude of accrual-based earnings management was relatively higher during the COVID-19 crisis shock (2020) than in the pre-pandemic year (2019). Such a finding is consistent with elements of agency theory (Jensen & Meckling, 1976), which posits that information asymmetry and conflicts of interest between firm managers and external stakeholders create opportunities for managers to act in their own interest. Increasing uncertainty regarding product demand, cash flows and firm survival may have strengthened incentives to exploit increased discretion over accounting numbers. Empirically, the finding of increased accrual-based earnings management is comparable to findings from recent studies related to COVID-19, including Lassoued & Khanchel (2021), Xiao & Xi (2021) and Yan et al. (2022). However, our findings conflict with the empirical results of some earlies studies, which reported a decrease in earnings management during the GFC (Gorgan et al., 2012; Filip & Raffournier, 2014; Cimini, 2015) and the COVID-19 crisis (Al-Mughrabi, 2020; Garfatta et al., 2023; Kim et al., 2024).

However, the early recovery period dummy - 2021 has the negative sign in the lDA_Kl model, indicating a substantial decrease in the magnitude of discretionary accruals in 2021. The reduction in lDA_Kl is consistent with reduced reliance on overall accrual manipulation as the macroeconomic environment stabilized and related risks gradually declined. Nevertheless, this decline in the overall level of discretionary accruals masks important differences between the income-decreas-

TABLE 6. FE panel results – dataset without outliers

Variables	IDA_KI	IDA_K⁻I	IDA_K⁺I
CONST.	0.491846*** (0.187057)	0.287140 (0.249194)	0.740916* (0.385630)
2020	0.018488*** (0.005961)	0.041962*** (0.006897)	-0.031340*** (0.010189)
2021	-0.025399*** (0.005194)	-0.054320*** (0.006696)	0.022332*** (0.008317)
ROA_{t-1}	0.000857** (0.000405)	0.001088** (0.000459)	0.000549 (0.000836)
LEV_{t-1}	-0.000707* (0.000406)	-0.000744 (0.000511)	-0.000759 (0.000762)
$SIZE_{t-1}$	-0.001140 (0.000804)	0.000027 (0.000989)	-0.003040* (0.001716)
OCF_{t-1}	0.012101 (0.044284)	-0.124780*** (0.047683)	0.223858*** (0.078419)
GDP_AG_t	0.002898*** (0.000702)	0.005629*** (0.000808)	-0.002643** (0.001195)
ROL_GS_t	-0.004448* (0.002357)	-0.001649 (0.003074)	-0.007905 (0.004957)
N	2,186	1,378	808
Within R^2	0.0389	0.1903	0.1668
F stat.	6.09***	21.61***	6.29***

Variable significance: *** p < 0.01; ** p < 0.05; * p < 0.10
Standard errors are reported in parentheses.
SOURCE: author's calculations

ing and income-increasing models. The IDA_K⁻I model indicates that the COVID-19 crisis year (2020) is associated with a substantial increase in the magnitude of income-decreasing discretionary accruals, while the early recovery year (2021) is associated with a strong decrease. The observed pattern is consistent with the Big-Bath hypothesis. During the initial COVID-19 shock, firms appear to have reduced reported earnings more aggressively, taking advantage of the unique pandemic situation to attribute poor performance to the exogenous shock. Recognizing accounting losses during the COVID-19 pandemic may also enable improved accounting performance in future recovery periods (Healy, 1985; Elliott & Shaw, 1988). In contrast, the IDA_K⁺I specification reveals that the COVID-19 crisis in 2020 is accompanied by a significantly reduced magnitude of income-increasing accruals, while in the early recovery period (2021) there was a significant increase. The observed pattern in the magnitude of income-increasing accruals is in line with signaling theory. During the peak of the COVID-19 shock in 2020, firms may have perceived aggressive income-increasing discretionary accruals as insufficiently credible because the decline in reported earnings was widely expected. As the economic environment gradually improved in 2021, firms may have faced stronger incentives to report better results, to restore investor confidence and signal adaptability in such an economic environment.

How do firm-level and country-level characteristics relate to accrual-based earnings management

during the event period? Firm financial performance measured by ROA is positively associated with |DA_K| and |DA_K$^-$|, while remaining insignificant for |DA_K$^+$|. Such results indicate that more profitable firms have greater financial reporting flexibility and can recognize discretionary losses without jeopardizing their financial position. Similar findings on ROA are reported by Xiao & Xi (2021) and Yan et al. (2022). The negative sign on the LEV variable reveals that more leveraged firms are associated with lower accrual-based earnings management. This finding does not support the predictions of the classical debt-covenant hypothesis of Positive accounting theory (Watts, Zimmerman, 1986), suggesting that creditor monitoring dominated debt covenant-related incentives in our sample. Similar results on leverage have been reported by Lisboa & Kacharava (2018), Yan et al. (2022), Aljughaiman et al. (2023), and Siagian & Handika (2024). Contrary to our findings, some studies (Franz et al., 2014; Lazzem & Jilani, 2017; Garfatta et al., 2023; Pervan et al. 2024) document a positive relationship between leverage and earnings management, consistent with the debt-covenant hypothesis. The SIZE variable shows a negative association with |DA_K$^+$|, while it remains insignificant in the other two model specifications. This finding is consistent with the political cost hypothesis. According to the political cost hypothesis, larger firms face greater interest and scrutiny from regulators, investors, and analysts. A similar empirical finding has been reported by Lisboa & Kacharava (2018), Paiva et al. (2019) and Yaşar & Yalçin (2024). The obtained signs with OCF variable reveal that firms with strong cash flow performance had little need to recognize additional losses during the crisis but possessed greater flexibility to communicate recovery through positive accruals. The findings are consistent with signaling theory. The positive coefficient on the GDP_AG variable in the |DA_K| and |DA_K$^-$| models indicates that improvements in the macroeconomic environment coincided with greater accounting discretion, whereas the negative coefficient in the |DA_K$^+$| model indicates reduced incentives to increase reported earnings during periods of better economic performance. Similar findings have been documented by Lassoued & Khanchel (2021). The rule of law proxy variable is negatively associated with the |DA_K| model, supporting the importance of controlling for the institutional environment. In line with institutional theory stronger law enforcement, judicial effectiveness and investor protection appear to constrain the magnitude of accrual-based earnings management. ROL_GS was insignificant in the directional models |DA$^-$| and |DA$^+$|.

To check the robustness of the estimated findings, the baseline models are first compared with alternative models estimated on the full sample using winsorized data. Table 7 reports results for all observations, but with winsorization of the baseline dependent variable and firm-level independent variables (denoted with $_w$). Selected variables were winsorized at the 1st and 99th percentiles by replacing observations below (above) these thresholds with the corresponding percentile values. This approach retained all observations, while at the same time limiting the impact of extreme values that could bias the estimated beta coefficients. The empirical findings for the winsorized dataset closely mirror the baseline results. Across all three specifications of the dependent variable, the estimated coefficients on the 2020 and 2021 dummy variables retain their signs and significance. Such findings indicate that the observed patterns of accrual-based earnings management during the COVID-19 crisis (2020) and the early recovery period (2021) are not driven by the treatment of outliers. More precisely, the positive (negative) association of the 2020 (2021) dummy with |DA_K$_w$| and |DA_K$_w^-$| remains unchanged, while the opposite pattern persists for |DA_K$_w^+$| model. The coefficients on the firm-level independent variables also remain largely consistent with the baseline specifications, while only leverage becomes insignificant in the |DA_K$_w$| model. The ROA variable continues to be positively associated with total and income-decreasing discretionary accruals, while the OCF variable preserves its opposite effects across the directional specifications. The SIZE variable remains negative in the |DA_K$_w^+$| model, while both country-level variables (GDP_AG$_w$ and ROL_GS$_w$) maintain their signs and significance. In general, the estimated models using the winsorized dataset confirm that the baseline findings are robust to an alternative treatment of outlier firm-observations.

The additional robustness check (Table 8) replaces the dependent, discretionary-accruals proxy variable from the baseline model (DA_K) with the Modified Jones discretionary-accruals proxy variable (DA_MJ). The findings with DA_MJ as a proxy for discretionary-accruals are highly comparable to the main findings from the baseline model. The COVID-19 crisis dummy (2020) remains positive and significant in the |DA_MJ| and |DA_MJ$^-$| models, while negatively significant in the |DA_MJ$^+$| model. Also, the early recovery period dummy (2021) remains negative and significant in the |DA_MJ| and |DA_MJ$^-$| models and positive and significant in the |DA_MJ$^+$| model. These results confirm that the main findings are not dependent on the Kothari et al. (2005) performance-matching model and remain valid when discretionary accruals are estimated using the Modified Jones model as proposed by Dechow et al. (1995). The signs and significance of

TABLE 7. FE panel results – winsorized dataset

Variables	$IDA_K_w I$	$IDA_K_w^- I$	$IDA_K_w^+ I$
CONST.	0.447316*** (0.172613)	0.236430 (0.239831)	0.336874 (0.322389)
2020	0.015738*** (0.005421)	0.039658*** (0.006733)	-0.026164** (0.010813)
2021	-0.021664*** (0.004834)	-0.051948*** (0.006438)	0.020962*** (0.007934)
ROA_{wt-1}	0.000668** (0.000277)	0.000788** (0.000335)	0.000037 (0.000650)
LEV_{wt-1}	-0.000453 (0.000298)	-0.000430 (0.000432)	-0.000001 (0.000579)
$SIZE_{wt-1}$	-0.000819 (0.000771)	0.000633 (0.000976)	-0.003537** (0.001593)
OCF_{wt-1}	-0.035919 (0.035686)	-0.133227*** (0.041224)	0.157682** (0.078339)
GDP_AG_t	0.002203*** (0.000630)	0.005178*** (0.000790)	-0.002531** (0.001154)
ROL_GS_t	-0.004009* (0.002172)	-0.001267 (0.002945)	-0.002959 (0.004204)
N	2,397	1,484	913
Within R^2	0.0332	0.1792	0.0963
F stat.	5.73***	22.42***	6.10***

Variable significance: *** p < 0.01; ** p < 0.05; * p < 0.10
Standard errors are reported in parentheses.
SOURCE: author's calculations

firm-level and country-level regressors remain largely consistent with the baseline findings. LEV and SIZE show only minor changes in significance, while ROL_GS becomes insignificant.

To explore the heterogeneity of the findings from the baseline models across different institutional settings we estimated separate FE panel models (Table 9) for EU countries with above- and below-median values of ROL_GS variable. The above-median subgroup comprises nine EU countries (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, the Netherlands and Sweden). The below-median subgroup comprises eight EU countries (Bulgaria, Croatia, Cyprus, Greece, Italy, Poland, Romania, and Spain). Such an analysis enables testing whether the observed association between the COVID-19 pandemic and accrual-based earnings management varies with institutional quality. In EU countries with higher ROL_GS scores, the sign and significance of beta coefficients on the 2020 and 2021 dummies follow exactly the same pattern as in the baseline models. Such results indicate that above median quality institutional environment did not prevent the observed pattern of accrual-based earnings management in 2020 and 2021. In EU countries with lower ROL_GS scores results are less uniform compared with baseline models. Namely, the COVID-19 crisis dummy (2020) becomes insignificant in the IDA_KI model, while it remains positive for $IDA_K^- I$ and negative for $IDA_K^+ I$, but only at a marginal level of significance. In other words, the associations between the COVID-19 crisis and overall accrual-based earnings management, relative to the pre-pandemic period (2019), are less pronounced in countries with a lower-quality institutional environment. The early re-

TABLE 8. FE panel results – Modified DA variable (DA_MJ)

Variables	| DA_MJ |	| DA_MJ$^-$ |	| DA_MJ$^+$ |
CONST.	0.4179** (0.1862)	0.2428 (0.2637)	0.2722 (0.3313)
2020	0.0171*** (0.0061)	0.0373*** (0.0076)	-0.0299*** (0.0090)
2021	-0.0199*** (0.0052)	-0.0526*** (0.0071)	0.0241*** (0.0079)
ROA_{t-1}	0.0010** (0.0004)	0.0010* (0.0005)	-0.0003 (0.0007)
LEV_{t-1}	-0.0007* (0.0004)	-0.0009* (0.0005)	-0.0007 (0.0007)
$SIZE_{t-1}$	-0.0013* (0.0008)	-0.0004 (0.0009)	-0.0038** (0.0016)
OCF_{t-1}	0.0171 (0.0447)	-0.1191*** (0.0450)	0.2298*** (0.0780)
GDP_AG_t	0.0025*** (0.0007)	0.0047*** (0.0008)	-0.0023** (0.0011)
ROL_GS_t	-0.0035 (0.0023)	-0.0009 (0.0033)	-0.0017 (0.0042)
N	2,198	1,313	885
Within R^2	0.034	0.193	0.145

Variable significance: *** p < 0.01; ** p < 0.05; * p < 0.10
Standard errors are reported in parentheses.
SOURCE: author's calculations

covery period dummy (2021) changes its sign to positive in the |DA_KI| model and retains its signs in the |DA_K$^+$I| and |DA_K$^-$I| models. Such a finding indicates that in a weaker institutional setting, the early recovery year is associated with more pronounced income-increasing accruals, strong enough to increase overall accruals. Overall, the institutional heterogeneity analysis only partially fits the theoretical expectations. A stronger rule of law did not prevent an increase in accrual-based earnings management during the COVID-19 crisis shock in 2020. In contrast, the findings for countries with a weaker rule of law suggest that a weaker institutional setting may be associated with more pronounced income-increasing accruals during the early recovery period (2021).

An additional heterogeneity analysis distinguishes higher-technology industries from lower-technology manufacturing industries. This sample separation is done in accordance with the OECD industry classification (Galindo-Rueda & Verger, 2016), with the higher-tech subsample incorporating observations from high-tech and medium-high-tech industries. The lower-tech subsample included observations from medium-low-tech and low-tech industries. Findings from Table 10 reveal that in the subsample of higher-technology industries, the COVID-19 crisis dummy (2020) is not statistically significant in the |DA_KI| specification, while it retains its significance and signs in the |DA_K$^-$I| and |DA_K$^+$I| specifications. The early recovery period dummy (2021) remains significant and negative in the |DA_KI| and |DA_K$^-$I| models, while becoming insignificant in the |DA_K$^+$I| model. The unchanged mag-

TABLE 9. FE panel results – EU countries with above-median vs. below-median ROL_GS

Variables	Subsample - EU countries with above median ROL_GS			Subsample - EU countries with below median ROL_GS		
	IDA_KI	IDA_K⁻I	IDA_K⁺I	IDA_KI	IDA_K⁻I	IDA_K⁺I
CONST.	0.133587*** (0.028040)	0.145024*** (0.036480)	0.072140 (0.047298)	0.174524*** (0.044174)	0.180536*** (0.050251)	0.296021*** (0.085043)
2020	0.024580*** (0.007770)	0.040408*** (0.008528)	-0.042059*** (0.012638)	-0.019867 (0.014780)	0.033361* (0.018211)	-0.042965* (0.022746)
2021	-0.034748*** (0.005728)	-0.061281*** (0.006809)	0.018838* (0.010708)	0.026141** (0.011187)	-0.017398* (0.010580)	0.054158*** (0.018322)
ROA_{t-1}	0.001356*** (0.000511)	0.001340** (0.000564)	0.000999 (0.000911)	-0.000699 (0.000576)	0.000349 (0.000553)	-0.000685 (0.001688)
LEV_{t-1}	-0.000209 (0.000452)	-0.000038 (0.000602)	0.000464 (0.000722)	-0.001503** (0.000703)	-0.002232** (0.000945)	-0.002264** (0.001088)
$SIZE_{t-1}$	-0.001475* (0.000879)	-0.000674 (0.001077)	-0.003073* (0.001661)	-0.002030 (0.001896)	0.001056 (0.002608)	-0.010336** (0.004835)
OCF_{t-1}	-0.024245 (0.049927)	-0.113284** (0.053925)	0.172465* (0.093714)	0.086884 (0.078716)	-0.148417* (0.089987)	0.278716** (0.126254)
GDP_AG_t	0.003772*** (0.001047)	0.005976*** (0.001105)	-0.003528** (0.001749)	-0.001998 (0.001445)	0.003182** (0.001571)	-0.004560** (0.002298)
N	1,473	965	508	713	413	300
Within R^2	0.0918	0.2459	0.1642	0.0505	0.0858	0.2375
F stat.	11.01***	24.30***	5.64***	1.75*	1.90*	2.96***

Variable significance: *** p < 0.01; ** p < 0.05; * p < 0.10
Standard errors are reported in parentheses.
SOURCE: author's calculations

nitude of overall accrual-based earnings management in 2020 relative to the pre-pandemic period (2019) among higher-tech firms may be the result of their higher level of resilience (stabile or growing demand) and adaptability (working from home, online work, etc.) to the economic consequences of COVID-19. In addition, higher-tech firms may also attract greater attention from analysts and investors and, consequently, be subject to greater external scrutiny. Results for the subsample of lower-technology industries are closer to the baseline findings. The only difference from the baseline findings is that the COVID-19 crisis dummy (2020) becomes insignificant in the IDA_K⁺I model. Lower-tech firms were probably more exposed to production disruptions due to lockdowns, problems in supply chains, and a decline in demand during the COVID-19 period. Consequently, their reporting behavior remained broadly consistent with the baseline results, suggesting that operational disruptions translated into accrual-based reporting incentives similar to those observed in the full sample. In general, the technology-based heterogeneity analysis indicates that the associations observed for the COVID-19 period are consistent across the two technological subsamples, although some differences in statistical significance are evident.

Overall, the conducted robustness and heterogeneity analyses provide broad support for the baseline model findings. The main pattern of findings remains broadly consistent across alternative extreme observations treatment, alternative discretionary accrual measurement, institutional quality-based country

TABLE 10. FE panel results – higher tech vs. lower tech manufacturing industries

Variables	Subsample - higher tech manufacturing industries			Subsample - lower tech manufacturing industries		
	I DA_K I	I DA_K$^-$ I	I DA_K$^+$ I	I DA_K I	I DA_K$^-$ I	I DA_K$^+$ I
CONST.	0.79024***	0.50388	1.08388**	0.27244	0.16706	0.65659
	(2.83)	(1.35)	(2.18)	(1.10)	(0.50)	(0.91)
2020	0.01250	0.04273***	-0.04535***	0.02523***	0.04034***	-0.01580
	(1.54)	(4.11)	(-3.34)	(2.97)	(4.45)	(-1.03)
2021	-0.02506***	-0.06034***	0.01316	-0.02738***	-0.04845***	0.02856**
	(-3.07)	(-5.70)	(1.07)	(-4.07)	(-5.62)	(2.12)
ROA_{t-1}	0.00143**	0.00156**	0.00019	0.00003	0.00050	0.00156
	(2.58)	(2.30)	(0.19)	(0.07)	(0.85)	(0.82)
LEV_{t-1}	-0.00058	-0.00075	-0.00034	-0.00100	-0.00088	-0.00136
	(-1.10)	(-0.84)	(-0.40)	(-1.61)	(-1.46)	(-0.94)
$SIZE_{t-1}$	-0.00181	-0.00114	-0.00348*	-0.00029	0.00124	-0.00212
	(-1.59)	(-0.76)	(-1.69)	(-0.26)	(0.98)	(-0.57)
OCF_{t-1}	-0.01901	-0.12452**	0.17105*	0.07163	-0.13620**	0.33664***
	(-0.35)	(-1.98)	(1.87)	(0.99)	(-2.28)	(2.62)
GDP_AG_t	0.00252**	0.00620***	-0.00351**	0.00343***	0.00505***	-0.00153
	(2.28)	(4.31)	(-2.06)	(3.87)	(5.52)	(-0.85)
ROL_GS_t	-0.00807**	-0.00412	-0.01206*	-0.00169	-0.00027	-0.00709
	(-2.30)	(-0.91)	(-1.92)	(-0.55)	(-0.06)	(-0.75)
N	1,166	704	462	1,020	674	346
Within R^2	0.0459	0.1872	0.1817	0.0437	0.2094	0.1958
F stat.	3.58***	10.44***	4.32***	3.63***	12.92***	4.40***

Variable significance: *** p < 0.01; ** p < 0.05; * p < 0.10
Standard errors are reported in parentheses.
SOURCE: author's calculations

subsamples, and technology-based industry subsamples. Although institutional quality and technology intensity affect the magnitude and stability of several coefficients, they do not overturn the main conclusions.

4. CONCLUDING REMARKS

This paper explores the association between the COVID-19 period and accrual-based earnings management in a sample of listed manufacturing firms from 17 EU countries. After distinguishing between absolute - IDAI, income-decreasing -IDA$^-$I, and income-increasing -IDA$^+$I discretionary accruals, we provide evidence on how firm behavior differed across the COVID-19 cri-

sis (2020) and the early recovery period (2021). The empirical findings reveal that the COVID-19 pandemic was associated with significant changes not only in the overall magnitude of discretionary accruals but also in the magnitudes of discretionary accruals conditional on their direction. While the COVID-19 crisis year (2020) was associated with greater income-decreasing discretionary accruals, the early recovery period (2021) was associated with relatively stronger income-increasing discretionary accruals. The results further indicate that selected firm-level and country-level variables explain part of the cross-sectional variation in accrual-based earnings management, confirming the relevance of controlling for firms' economic characteristics and the broader institutional environment. The major baseline findings are confirmed across several robustness and heterogeneity analyses. Although some variables vary in significance across specifications, the overall findings on the association between the COVID-19 period and accrual-based earnings management remain broadly stable. The research results may also have practical implications for major stakeholders. Investors and creditors may benefit from recognizing that earnings management incentives can differ between periods of a strong economic shock and a later recovery period. In such a turbulent economic setting the interpretation of reported accounting numbers should be accompanied by a careful analysis of changes in accounting policies and estimates. Also, external auditors and financial analysts may pay additional attention to the direction of discretionary accruals when analyzing accounting numbers prepared in periods of a volatile economic environment.

This research also has several limitations, which should be taken into account when interpreting the results. The first limitation relates to the sample itself, as it includes only manufacturing firms, which restricts the generalizability of the empirical findings. Due to missing data, the empirical results should primarily be interpreted as reflecting the accrual-based earnings management behavior of relatively larger and more profitable EU manufacturing firms. The observed profile of firms with missing data points to the necessary caution when generalizing the results to smaller or less profitable firms. Future research should extend the scope of analysis to other industries to enable broader generalization and to identify sector-specific accrual-based earnings management patterns during crises. Additionally, research could explore real earnings management to ensure a more thorough understanding of firms' behavior. The inclusion of additional firm-level and country-level variables that capture the effects of financial constraints, monitoring mechanisms, institutional quality, and pandemic-related government responses may shed additional light on crisis-related earnings management.

Note

This article was produced as part of the project "Digital Transformation of Accounting and Auditing for Sustainable Business and Performance Measurement (DIOR)", funded under institutional research projects from Source 581 – Recovery and Resilience Mechanism. The views and opinions expressed are those of the authors only and do not necessarily reflect those of the European Union or the European Commission. Neither the European Union nor the European Commission can be held responsible for them.

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UPRAVLJANJE DOBITI PUTEM OBRAČUNSKIH KATEGORIJA PRIJE I NAKON ŠOKA UZROKOVANOG PANDEMIJOM BOLESTI COVID-19: MEĐUNARODNI DOKAZI ZA PROIZVODNA PODUZEĆA IZ EU

SAŽETAK

Ovo istraživanje analizira upravljanje dobiti putem obračunskih kategorija tijekom šoka uzrokovanog pandemijom bolesti COVID-19 (2020.) i razdoblja ranog oporavka (2021.). Istraživački uzorak obuhvaća podatke o javno uvrštenim proizvodnim poduzećima iz 17 odabranih zemalja EU-a, dok razdoblje događaja obuhvaća 2019., 2020. i 2021. godinu. U temeljnim modelima diskrecijske obračunske kategorije procjenjuju se primjenom pristupa usklađivanja prema uspješnosti poslovanja. Radi dobivanja detaljnijeg uvida u rezultate, zasebni panel-modeli s fiksnim učincima (FE) procijenjeni su za ukupne diskrecijske obračunske kategorije te za diskrecijske obračunske kategorije usmjerene na smanjenje i povećanje dobiti. Procijenjeni FE panel-modeli uključuju dummy varijable za godine, vremenski pomaknute varijable na razini poduzeća te varijable na razini države. Empirijski nalazi pokazuju da je kriza uzrokovana pandemijom bolesti COVID-19 u 2020. godini bila povezana s povećanjem ukupnih diskrecijskih obračuna i diskrecijskih obračuna usmjerenih na smanjenje dobiti, dok je bila negativno povezana s diskrecijskim obračunima usmjerenima na povećanje dobiti. Uočeni obrazac promijenio se 2021. godine, kada su se ukupni diskrecijski obračuni i diskrecijski obračuni usmjereni na smanjenje dobiti smanjili, dok su se diskrecijski obračuni usmjereni na povećanje dobiti povećali. Glavni rezultati istraživanja ostaju uglavnom robusni na alternativni tretman ekstremnih vrijednosti, procjenu diskrecijskih obračuna primjenom modificiranog Jones modela te analize na institucionalnim i industrijskim poduzorcima. Istraživanje doprinosi postojećoj literaturi pružanjem detaljnijih dokaza o upravljanju dobiti usmjerenom na njezino povećanje i smanjenje tijekom razdoblja gospodarskih poremećaja. Empirijski nalazi dodatno podupiru stajalište da upravljanje dobiti nije statično, već dinamično te se prilagođava promjenjivim poticajima tijekom različitih faza gospodarskih poremećaja.

KLJUČNE RIJEČI: *upravljanje dobiti, obračunske kategorije, COVID-19, zemlje EU-a*