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EARNINGS MANAGEMENT AND DIVIDEND PAYMENTS DURING THE COVID-19 PANDEMIC

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ABSTRACT

The recent outbreak of coronavirus has caused the worst global economic crisis in the last few decades. A substantial number of companies have experienced severe economic difficulties and were tempted to adjust their financial figures in order to reach certain business thresholds. Maintaining an existing level of dividend payments is a powerful incentive to engage in such activities.

The aim of this article was to estimate the effect of the economic crisis caused by the COVID-19 pandemic on the relationship between the estimated level of earnings management and dividend payments made by companies.

Research models were estimated using panel analysis. The Modified Jones model was utilized to assess the level of earnings management. A total of 56 companies listed on the Zagreb Stock Exchange in the Republic of Croatia with their financial data from 2015 to 2020 were included in the research sample.

Unlike in the case of absolute and income-decreasing discretionary accruals, results indicated that the economic crisis caused by the COVID-19 pandemic positively affected the relationship between earnings management and dividend payments in the case of income-increasing accruals regarding companies that made regular dividend payments.

In conclusion, the economic crisis caused by the COVID-19 pandemic was an additional incentive for certain companies to perform income-increasing earnings management to reach the desired level of dividend payments.

KEY WORDS

Coronavirus, COVID-19, crisis, dividend, earnings management

CLASSIFICATION

JEL: G01, G35, M41

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INTRODUCTION

Not long after national economies had recovered from the global financial crisis which had started in 2008, they were severely affected by a recent "black swan" event [1], that is the outbreak of coronavirus (SARS-COV2) which led to the recent global financial crisis that "resulted in levels of economic distress unprecedented since the 1930s" [2; p.2]. The "largest pandemic in the modern globalized era" [3; p.3] has caused economic repercussions in numerous areas, e.g. "sales, purchases of inputs, employment, the firm's financial situation, online sales, and remote work" [3; p.4].

The focus of this research was directed towards the financial performance of companies, which had also been negatively affected by the COVID-19 pandemic [4, 5]. Generated net profits are considered as the primary source of dividend payments – at the end of financial year management of a company decides on a number of profits that will be allocated for such payments. Considering the positive impact of corporate financial performance on dividends and dividend-signalling theory [6], it is presumable that dividend payments could be considered as an indicator of the company's financial health, and are related to the future profitability [7].

In this regard, companies are simultaneously faced with the repercussions of the COVID-19 crisis and high pressure to maintain the desired level of dividend payments because managers are not willing to decrease dividends easily [8]. Consequentially, management is tempted to resort to earnings management practices. Earnings management, which can be considered as one of the most important topics in economic research in the last decades, can be defined as "the insider's attempt to manipulate earnings against the interest of outsiders" [9; p.302]. Furthermore, da Silva et al. [10; p.269] state earnings management "is characterized as an opportunistic manager's practice that aims to deceive the external user ... using the permissibility in selecting accounting principles for recognition and measurement of elements (assets, liabilities, and revenues and expenses) within the limits of rules to deliberately inform misleading results".

The purpose of this article was to determine the effect of the economic crisis caused by the COVID-19 pandemic on the relationship between earnings management and dividend payments using empirical data of Croatian companies. Although unfortunate, the COVID-19 pandemic has provided numerous opportunities for scientific research and the intention of this article was to contribute by examining the relationship of two extremely important variables, earnings management, and dividend payments, which were frequently researched (e.g. [11-15]). Because an ongoing pandemic generates economic uncertainty, every additional insight into behaviour of companies is valuable for investors and other stakeholders. The research on the relationship between earnings management and the COVID-19 crisis [16] is extremely scarce and this article contributes to the existing literature since it examines the relationship between earnings management and dividend payment in an emerging market during the economic crisis caused by the COVID-19 pandemic as an extremely rare and highly specific event in business history and, to the authors' best knowledge, no such study was still performed.

The article was organized as follows – the second section provides a review of research relevant for the subject of this article and development of research hypotheses, the third section comprises explanations on statistical techniques applied in research for model development, methods used for estimation of the dependent variable and research models with additional explanations of variables included, the fourth section presents results of conducted statistical analysis, in the fifth and final section contributions of the research are explained, relations to previous findings made, as well as recommendations for future research.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

In this part of the article authors focus on researches that investigated earnings management practices and dividend payments in periods of crisis. It is expected that financial and economic crises will influence earnings management practices. This effect can be either positive or negative depending on management's goals and earnings management purpose.

Research related to earnings management practices in crises period was popular after the global financial crisis in 2008, but findings are inconclusive. For example, Da Silva et al. [10], Flores et al. [17], and Koowattanatianchai [18] document an increase in earnings management during financial and economic crises. On the other side Chintrakarn et al. [19], Kumar and Vij [20], and Cimini [9] document a decrease in earnings management during financial crises.

Ahmad-Zaluki et al. [21] state how during the crisis market is more tolerant of lower performance reported by companies since low results are reported by most of the companies. Consequently, Kumar and Vij notice how "firms have less incentive to engage earnings management during the crisis" [20; p.89]. Türegün [22] also points out how "the presence of lower manipulation of earnings during the crisis period may be credited to certain motivation, for example, lower incentive for management for manipulating the earnings, higher market acceptance toward lower performance by the firms and increased surveillance of government authorities, auditors and exchange boards during such periods of economic distress" [22; p.70]. Authors also note how crises may serve as an excuse for a company's poor performance and therefore managers are less motivated for earnings management behaviour [19].

One of the rare researches that examined the impact of COVID-19 on earnings management was performed by Xiao and Xi [16] on a sample of 2 029 Chinese listed firms. Research results indicated "an increase in accrual-based earnings management (AEM) and a significant decline in real activity-based earnings management (REM), in firms in the most severely affected regions" [16; p.59]. Authors pointed out that earnings management was less expressed in firms with higher performance than in those with lower performance. Also, earnings management was less pronounced in firms audited by Big 10 audit firms.

Türegün [22] examined the impact of the financial crisis in 2008 on the earnings management practices of Turkish firms in period 2007-2012. The author analysed earnings management behavior in three periods: pre-crisis period (2007 and 2008), crisis period (2009 and 2010), and the post-crisis period (2011 and 2012). The sample included 138 companies or 828 firm-year observations. Results showed that earnings management practices were lower in the crisis period and then increased in the post-crisis period.

Chintrakarn et al. [19] examined the impact of the 2008 financial crisis on earnings management practices on a sample of 14 000 observations in the 15-year period. Research results revealed how earnings management practices decreased during the crises. Authors point out how "during the crisis firm performance was so far below the target that no amount of earnings management would have been sufficient to reverse the poor earnings picture" [19; p.477].

Kumar and Vij [20] analysed earnings management practices for Indian firms in the period 2007-2012. They examined changes in earnings management in periods of crisis, periods before crisis, and periods after crises. Results indicate the presence of earnings management in the pre-crisis period, a decrease in earnings management practices in the crisis period and again increase after the crisis period. Also, the authors examined earnings management practices by dividing companies into two sub-samples: those with positive and those with negative discretionary accruals. Results show that earnings management behaviour in both sub-samples declined in the crisis period and increased after the crisis for firms with negative discretionary accruals.

Flores et al. [17] examined earnings management practices for companies listed in the capital markets of Brazil and the USA. The research sample consisted of 7 932 firm-quarter observations for Brazilian firms and 99 931 from listed US firms. The observation period was 1998-2010. According to research results in periods of crisis earnings management practices are more pronounced both in Brazil and in the USA.

Cimini [9] evidenced a decrease in earnings management practices after the financial crisis in 2008. Authors performed cross-country analysis on a sample of 11 844 firm-year observations listed in the EU for the period 2006-2012. Earnings management practices were analysed by event study approach, i.e. "comparing abnormal accruals before and after an event, which is, in this case, the burst of the financial crisis since the fiscal year 2008" [9; p.303].

Filip and Raffournier [23] performed a cross-country analysis and examined earnings management behaviour in 16 European countries in the 2008 financial crisis. Results indicated a decline in earnings management in the crisis period and this tendency was observed for all analysed countries. Furthermore, the authors reported a connection between earnings management behaviour and economic growth rate.

Da Silva et al. [10] examined earnings management practices on the Brazilian market in the period 1997-2009 on a sample of 445 companies (3 941 firm-year observations). They found a significant relation between earnings management and economic crises.

Ahmad-Zaluki et al. [21] analysed earnings management practices of Malaysian IPOs. According to their results income-earnings management practices increased in Malaysian IPOs and this effect is especially pronounced for IPOs during a period of crisis.

Another stream of research related to our hypothesis is related to the impact of earnings management on a dividend policy. Different authors (for example [11-15]) examined the connection between earnings management and dividend payout since "the level of reported earnings is an important determinant of dividends" [12; p.3]. It should be pointed out how research results are different meaning that some authors [11-13] evidenced positive relation between variable earnings management and dividend policy while others found no significant impact of earnings management on dividend policy [24-26].

Association between earnings management behaviour and dividend payout on a sample of 37 Finnish companies was performed by Kasanen et al. [11]. According to research results, companies use earnings management techniques to increase earnings as a response to pressure coming from the side of large institutional investors for dividends payout.

Daniel et al. [12] examined whether companies perform earnings management practices in situations when "pre-managed" earnings are expected to be lower than expected dividend payments. Their research was conducted on a sample of 1500 American companies in the period 1992-2005. According to research results "firms are significantly more likely to manage earnings upward when pre-managed earnings are below expected dividend level than when they are not" [12; p.3].

Atieh and Hussain [13] questioned the association between earnings management and dividend payout on a sample of large companies listed on the London Stock Exchange in the period 1994-2004. Results show how those companies that pay dividends are more prone to manage earnings upwards in comparison to dividend non-payers.

International research on the link between dividend payout and earnings management was performed by He et al. [14]. A study was conducted on a sample of 23 429 companies from 29 countries and research results show that "dividend payers manage earnings less than dividend non-payers, and that this evidence is stronger in countries with weak investor protection and high opacity" [14; p.267].

Evidence from France also shows a positive link between earnings management and dividend policy. More precisely, Amar et al. [15] surveyed 280 companies, i.e. 2 108 firm-year observations in period 2008-2015 according to research results dividend policy of French companies is positively related to earnings management.

It is interesting to point out a study conducted by Abbadi et al. [26], who examined the relation between earnings management and dividend policy in Kuwait. However, the study performed on a sample of 46 companies in the period 2011-2016 found no significant relation between earnings management and dividend payout.

Similar results were obtained by Shah et al. [24]. They performed comparative analysis on a sample of 120 Pakistani firms in the period 2003-2007 and 55 Chinese firms in the period 2001-2007. According to research results, earnings management practices were not significantly associated with dividend policy.

Furthermore, Abbasi et al. [25] performed research on a sample of 214 companies listed on the Teheran Stock Exchange in the period from 2008-2012. Their results also found no statistically significant relation between earnings management and dividend policy.

Finally, the relationship between dividend policy and financial crisis should also be considered. Abdulkadir et al. [27; p.103], who pointed out this relationship as "relatively underexplored", stated that "markets attach a high valuation to firms that are able to pay during the crisis period". Thus, "some managers strive to maintain stable dividends during the crisis period" [27; p.103] and this can be considered as an incentive for earnings management practices.

Laing et al. [28; p.145] had conducted their research in Malaysia and stated that "dividend policies that will increase firms' valuation are adopted" what was "reflected in the signalling theory with evidence that higher profitability exerts a positive influence on firms' propensity to increase and/or maintain dividends over different study periods, implying that markets attach a high valuation to firms that can pay, especially during the crisis period".

Ankudinov and Lebedev [29; p.384] have found that "amid the global financial crisis, the dividend payments of state-owned companies decrease more significantly than those of privately owned companies", but also that "the generous dividend policies of public companies suffer greater 'adjustments' during the crisis period". They pointed out that "even companies with liquidity constraints do their best to keep dividend payments at least at the pre-crisis level" [29].

Reddeman et al. [30; p.53] have noticed that during the crisis "dividend cuts have been suggested to preserve capital" but that "some observers seem to fear that investors could interpret a reduction of dividends as a sign of future problem". Despite those interpretations, they asserted that results of their research did not "indicate that dividend smoothing or dividend signalling are relevant economic phenomena examining the dividend policy of the European insurance industry" [30; p.53].

This article aimed to examine the effect of the economic crisis caused by COVID-19 on the relationship between earnings management and dividend payments. Given the specificities of the ongoing global economic crisis caused by COVID-19 as an extremely rare event, as well as the Republic of Croatia as a small European bank-centric country with an insufficiently developed capital market, similar research was not previously conducted. Considering the results of previous research presented in this section and since this article examines a very complex relationship, the direction of effect that the economic crisis caused by COVID-19 had on the relationship between earnings management and dividend payments was not defined. Thus, the following research hypotheses were established:

H_1: There is a statistically significant effect of the economic crisis caused by COVID-19 on the relationship between earnings management and dividend payments to shareholders.

H_2: There is a statistically significant effect of the economic crisis caused by COVID-19 on the relationship between income-increasing earnings management and dividend payments to shareholders.

H_3: There is a statistically significant effect of the economic crisis caused by COVID-19 on the relationship between income-decreasing earnings management and dividend payments to shareholders.

METHODOLOGY

SAMPLE DESCRIPTION

The entire population of public limited companies listed on the Zagreb Stock Exchange on 30th September 2020 was taken into consideration for the creation of the research sample, i.e. 103 companies. Due to their particularities, financial companies such as financial banks, insurance companies, and funds were excluded (13 companies), as well as companies belonging to industries that did not have sufficient data for calculation of discretionary accruals with the Modified Jones model, i.e. minimum of six observations [31]. Also, companies with missing data were eliminated from the research sample, as well as companies that published financial statements before 11th March 2020, when the minister of health announced the epidemic of the COVID-19 [32] and the global pandemic was announced [33, 34].

After implementation of above-mentioned adjustments, the final sample comprised 56 companies whose data was analysed in the period from 2015 to 2019. This period was analysed because in 2015 the growth of the gross domestic product in the Republic of Croatia was recorded [35], indicating a more favourable trend after a prolonged period of the global economic crisis, and financial statements for the financial year 2019 were the first ones published during the COVID-19 pandemic. The financial year 2020 was not taken into consideration because financial information and information on dividend payout were not completely available at the time this research was finalized.

Financial data as well as data on a number of shares listed on the Zagreb Stock Exchange was collected from annual reports available at Zagreb Stock Exchange official website. The RGFI Public Posting website was used as a complementary source for companies that had not published necessary data on a number of shares listed. The portal MojeDionice.com was used to determine the amount of dividend payments companies made to their shareholders.

EARNINGS MANAGEMENT MEASUREMENT

To estimate the level of earnings management, the Modified Jones model which divides total accruals into non-discretionary and discretionary accruals was applied: "normal accruals are estimated from a simple statistical model based on firm assets, property, plant, and equipment, and change in sales" [36; p.174] and "abnormal or discretionary accruals are the residuals between actual accruals and the predicted accruals from the modified Jones model" [36; p.174]. Regression residual was used as a measure of discretionary accruals [37]:

$$\frac{\mathrm{TAC}_{i,t}}{\mathrm{TASS}_{i,t-1}} = a\cdot\frac{1}{\mathrm{TASS}_{i,t-1}} + b\cdot\left(\Delta\mathrm{REV}_{i,t} - \frac{\Delta\mathrm{REC}}{\mathrm{TASS}_{i,t-1}}\right) + c\cdot\frac{\mathrm{PPE}}{\mathrm{TASS}_{i,t-1}} + e_{\mathrm{i,t}}, \quad (1)$$

where $\mathrm{TAC}_{\mathrm{i,t}}$ is total accruals for year t for firm i, $\mathrm{TASS}_{\mathrm{i,t-1}}$ a lagged total assets, $\Delta\mathrm{REV}_{\mathrm{i,t}}$ revenues of year t minus revenues of firm i in year $t-1$. ΔREC denotes receivables for firm i

in year t minus receivables in year $t-1$, $PPE_{i,t}$ is property, plant, and equipment of firm i in gross in year t and $e_{i,t}$ is error term in year t for firm i [37; p.21].

Companies "with consistently large discretionary accruals are deemed more likely to be manipulating earnings, or at the very least, have less transparent financial statements" [36; p.174]. The following formula was used for total accruals [37]:

$$TAC_{i,t} = \text{earnings} - CFO, \tag{2}$$

where CFO denotes cash flows from operations [37; p.21].

Three measures of discretionary accruals were used. Firstly, absolute discretionary accruals which "measure the extent of … discretionary behavior instead of its direction" [8; p.2743]. Given that the behavior of a company regarding earnings management can differ due to its motivations [12], a more detailed analysis was conducted using income-increasing and income-decreasing accruals to determine if there was a difference between different types of earnings management.

STATISTICAL METHODS

Random effects panel model and fixed effects panel model were used to estimate regression models required for hypothesis testing. To determine "whether fixed or random effects regression model will be accepted" the Hausman test was conducted [38; p.316]. R language and environment for statistical computing [39] were used for statistical analysis and estimation of models. Also, some additional R packages were applied, such as The *plm* package [40] necessary for estimation of panel data models, the *stargazer* [41] for regression tables formatting, and the *car* package [42] for multicollinearity testing. Research conducted by Pavić Kramarić, Aleksić, and Pejić-Bach [43] can be mentioned as the example of the panel research in the Republic of Croatia in the field of finance.

RESEARCH MODELS

Considering previous research on the relationship between earnings management and dividend policy, certain control variables with potential impact on the level of earnings management were included to increase the reliability of statistical models: company size [8, 12-14, 43, 44], leverage [12-14, 43, 44], profitability [8, 14, 44], retained earnings [12, 13, 43], an affiliation of audit company to Big Four [14].

Additionally, retained earnings were taken into account in this context given that they are "legitimate source of cash dividends" and due to the fact, that "higher retained earnings lead to the fewer needs of earnings management" [43; p.208]. Results of the research conducted by Daniel et al. [12; p.10] indicate that "accruals are negatively associated with retained earnings" and corroborate statement that retained earnings are "a proxy for the inventory of earnings from which dividends can legally be paid".

After considering the variables used in previous research, the following regression models were formed:

$$aDACC_{i,t} = \beta_0 + \beta_1 \cdot \frac{D}{P_{i,t}} + \beta_2 \cdot \frac{D}{P} \cdot COVID_{i,t} + \beta_3 \cdot RET_{i,t} + \beta_4 \cdot BF_{i,t} + \beta_5 \cdot CS_{i,t} + \beta_6 \cdot PROF_{i,t} + \beta_7 \cdot LVG_{i,t} + e_{i,t}, \tag{3}$$

$$uwDACC_{i,t} = \beta_0 + \beta_1 \cdot \frac{D}{P_{i,t}} + \beta_2 \cdot \frac{D}{P} \cdot COVID_{i,t} + \beta_3 \cdot RET_{i,t} + \beta_4 \cdot BF_{i,t} + \beta_5 \cdot CS_{i,t} + \beta_6 \cdot PROF_{i,t} + \beta_7 \cdot LVG_{i,t} + e_{i,t}, \tag{4}$$

$$dwDACC_{i,t} = \beta_0 + \beta_1 \cdot \frac{D}{P_{i,t}} + \beta_2 \cdot \frac{D}{P} \cdot COVID_{i,t} + \beta_3 \cdot RET_{i,t} + \beta_4 \cdot BF_{i,t} + \beta_5 \cdot CS_{i,t} + \beta_6 \cdot PROF_{i,t} + \beta_7 \cdot LVG_{i,t} + e_{i,t}, \tag{5}$$

where dependent variables measuring the level of earnings management are aDACC – absolute value of discretionary accruals; uwDACC – income-increasing discretionary accruals which indicates upward earnings management and dwDACC – income-decreasing discretionary accruals which indicates downward earnings management. Test variables are D/P – a number of dividends that company paid to its shareholders divided by net profit in previous financial year (identical variables had been used by Saona and Muro [7] and He et al. [13]); COVID = financial year for which annual financial statements were not disclosed before the declaration of the global COVID-19 pandemic and the COVID-19 epidemic in the Republic of Croatia. That variable is a binary variable with values 0 – financial years before declaration of the COVID-19 pandemic, or 1 – year in which the global COVID-19 pandemic was declared.

Multiplication of the ratio of dividends that company paid to its shareholders and net profit in previous financial year with the binary variable COVID ($\frac{D}{P} \cdot COVID_{i,t}$) is used for measuring the effect of the global COVID-19 pandemic on relationship between the level of earnings management and a number of dividends that company paid to its shareholders divided by net profit in previous financial year.

Control variables are: RET – retained earnings divided by total income; BF – affiliation of audit company to Big Four, that was specified as a binary variable (with value 0 – audit company not classified as a part of Big Four, or 1 – audit company classified as a part of Big Four); CS – natural logarithm of total assets which was used as proxy variable for size of a company; PROF – return on assets (calculated as a ratio between net income and total assets) which was used for measuring level of profitability; LVG – ratio between total liabilities and total assets which was used for measuring leverage. Finally, β_0 is regression intercept, β_n ($n > 0$) are regression coefficients and e is regression error term.

RESULTS

The descriptive statistics related to the variables included in the research models are presented in Table 1, which comprises the six measures (minimum, 1st quartile, median, mean, 3rd quartile, maximum) of the numeric variables included in the research models. The affiliation of statutory auditors to the group of Big Four audit companies was not incorporated in Table 1, given that it is a dichotomous variable – 131 audit companies (47 %) were classified as a part of the Big Four, while 118 companies (42 %) were not classified as a part of the Big Four. The data was not available for 31 companies (11 %).

Table 1. Descriptive statistics – numeric variables included in the model (aDACC is absolute value of discretionary accruals; uwDACC the income-increasing discretionary accruals; dwDACC the income-decreasing discretionary accruals; D/P the dividends divided by net profit in previous financial year; RET is retained earnings/total income; CS denotes natural logarithm of total assets (proxy variable for size of a company); PROF is return on assets (net income/total assets); LVG denotes total liabilities/total assets).

Variable	Min	1st Q.	Median	Mean	3rd Q.	Max
aDACC	0,0001	0,0136	0,0306	0,0481	0,061	0,465
uwDACC	0,0006	0,0131	0,0311	0,0446	0,0597	0,2191
dwDACC	–0,466	–0,0613	–0,0303	–0,0522	–0,0143	–0,0001
D/P	0	0	0	0,13	0	2,09
RET	–43,91	–0,19	0,008	–0,94	0,13	0,73
CS	17,55	19,18	20,14	20,14	20,94	23,79
PROF	–2,44	–0,008	0,02	–0,007	0,05	0,22
LVG	0,04	0,28	0,28	0,44	0,56	2,01

The variance inflation factor (VIF) test was conducted to "ensure that multicollinearity does not bias our results in the models' estimation" [8; p.2761]. The variance inflation factor values included in Table 2 are related to all six research models. The results of this test indicated that all values are lower than 3,02, thus there is no multicollinearity problem if a value of 10 is taken as a benchmark [45].

Table 2. Multicollinearity – Variance Inflation Factor (D/P is dividends/net profit in a previous financial year; COVID = financial year for which annual financial statements were not disclosed before the declaration of the global COVID-19 pandemic and the COVID-19 epidemic in the Republic of Croatia – it was specified as a binary variable (0 = financial years before the declaration of the COVID-19 pandemic; 1 = year in which the global COVID-19 pandemic was declared); RET = retained earnings/total income; BF = affiliation of an audit company to the Big Four (0 = an audit company not classified as a part of the Big Four; 1 = an audit company classified as a part of the Big Four); CS = natural logarithm of total assets (proxy variable for size of a company); PROF = return on assets (net income/total assets); LVG = total liabilities/total assets).

Variable/Model	(1)	(2)	(3)	(4)	(5)	(6)
D/P	1,3	1,3	1,42	1,47	1,28	1,36
COVID	1,02	1,11	1,04	1,21	1,03	1,48
RET	1,05	1,65	1,13	1,93	1,03	1,73
BF	1,38	1,62	1,33	1,59	1,49	1,72
CS	1,65	1,96	1,64	1,77	1,83	3,02
PROF	1,35	1,48	1,40	1,45	1,52	2,4
LVG	1,37	1,46	1,23	1,93	1,61	1,14

To determine if the fixed effects or random effects panel model is more suitable for the estimation of research models, the Hausman test was conducted. It indicated that in the case of Models 1-5 random effects panel model was more appropriate for analysis, while the fixed effects panel model was more appropriate for Model 6. The results of models estimation are presented in Table 3 where regression coefficients for independent variables, standard errors (in brackets below coefficients), number of observations, and R^2 are included for six models.

Models were estimated using absolute discretionary accruals (Model 1), income-increasing discretionary accruals (Model 3), and income-decreasing discretionary accruals (Model 5) as a dependent variable and a measure of earnings management. Also, models in which companies that have not made dividend payments over a five-year period were filtered out from the research sample are estimated using absolute discretionary accruals (Model 2), income-increasing discretionary accruals (Model 4), and income-decreasing discretionary accruals (Model 6).

The results in Table 3 indicated that the regression coefficient of moderating variable that represented the effect of the economic crisis caused by the COVID-19 pandemic on the relationship between the level of earnings management and the amount of dividends that the company paid to its shareholders was positive (0,017) but not statistically significant in case of absolute discretionary accruals. The same was inferred from models where income-increasing discretionary accruals and income-decreasing discretionary accruals were used as a dependent variable (0,047 and 0,009).

The situation changed after companies that have not made dividend payments over a five-year period were filtered out from the research sample given that the regression coefficient of moderating variable for income-increasing discretionary accruals was positive (0,076) and statistically significant, indicating that economic crisis caused by the COVID-19 pandemic contributed to higher income-increasing discretionary accruals (earnings management) in

case of companies which made dividend payments in the observed period. It follows that a D/P ratio growth of 0,1 leads to an average increase of the discretionary accruals by 0,0076.

Table 3. Regression Models 1-6 (aDACC is absolute value of discretionary accruals, uwDACC is income-increasing discretionary accruals, dwDACC is income-decreasing discretionary accruals, D/P is an amount of dividends that company paid to its shareholders divided by net profit in previous financial year, COVID is financial year for which annual financial statements were not disclosed before the declaration of the global COVID-19 pandemic and the COVID-19 epidemic in the Republic of Croatia – it was specified as a binary variable (0 = financial years before declaration of the COVID-19 pandemic; 1 = year in which the global COVID-19 pandemic was declared), D/P*COVID is variable used for measuring the effect of the global COVID-19 pandemic on relationship between the level of earnings management and an amount of dividends that company paid to its shareholders divided by net profit in previous financial year, RET is retained earnings/total income, BF is affiliation of an audit company to the Big Four (0 = an audit company not classified as part of the Big Four; 1 = an audit company classified as part of the Big Four), CS is natural logarithm of total assets (proxy variable for size of a company), PROF is return on assets (net income/total assets) and LVG is total liabilities/total assets.

	Dependent variable:					
	aDACC		**uwDACC**		**dwDACC**	
Model	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
D/P	0,004 (0,013)	0,01 (0,011)	–0,0002 (0,017)	0,030 (0,019)	–0,0004 (0,019)	0,017 (0,015)
D/P*COVID	0,017 (0,034)	0,019 (0,024)	0,047 (0,051)	0,076* (0,044)	0,009 (0,048)	0,0002 (0,033)
RET	0,001 (0,001)	–0,016 (0,035)	0,0003 (0,001)	0,022 (0,042)	–0,001 (0,001)	0,312 (0,180)
BF	0,008 (0,008)	0,006 (0,012)	0,024*** (0,008)	0,010 (0,013)	0,012 (0,014)	
CS	0,005 (0,003)	0,003 (0,006)	–0,002 (0,004)	–0,001 (0,007)	–0,011* (0,006)	–0,049 (0,106)
PROF	–0,147*** (0,019)	–0,039 (0,132)	0,048 (0,057)	–0,221 (0,151)	0,160*** (0,026)	0,321 (0,481)
LVG	0,031** (0,014)	–0,041 (0,045)	0,036** (0,016)	–0,007 (0,054)	–0,031 (0,024)	0,985* (0,470)
Constant	–0,066 (0,064)	–0,004 (0,126)	0,050 (0,073)	0,047 (0,142)	0,186* (0,110)	
Observations **R^2**	247 0,317	73 0,070	134 0,121	48 0,170	113 0,431	25 0,518

*significant at the level $p < 0,1$.
**significant at the level $p < 0,05$.
***significant at the level $p < 0,01$.

DISCUSSION AND CONCLUSION

THEORETICAL CONTRIBUTIONS AND PRACTICAL IMPLICATIONS

Earnings management and dividend payments are popular topics that have been intensively researched over the few past decades. One of the things they have in common is that research results in these fields are often inconclusive, causing debates and making consensus among researchers practically unreachable. Despite intensive research activities all over the world,

the research on earnings management in the Republic of Croatia is still in its infancy, leaving a lot of space for new scientific cognitions which will deepen knowledge on that matter.

On the other hand, there is a brand new stream of scientific research initiated by the dismal surroundings of the global economic crisis caused by the COVID-19 pandemic which involves practically all scientific fields, as well as economics. There is a considerable demand for new research to strengthen mechanisms for alleviating the consequences of the crisis caused by the COVID-19 pandemic.

That implies a unique opportunity for examining the relationship between the level of earnings management and dividend payments because similar research was not previously conducted. Research results showed that the impact of the economic crisis caused by the COVID-19 on the relationship between earnings management and dividend payments had not been statistically significant. But, when companies that had not made dividend payments over a five-year period had been filtered out of the sample, results showed that there was a statistically significant positive impact of the economic crisis caused by the COVID-19 on the relationship between dividend payments and earnings management.

Taking into account the assertions by Abdulkadir et al. [27] quoted in the Literature review section, discontinuation of dividend payments is not a desirable move for a company that has made dividend payments regularly over previous financial periods because it could signify financial difficulties and reduce interest for new investments. In that context, "companies may alter their payout policies in response to a financial crisis" [27; p.104].

Despite smaller sample of data available for this additional analysis, it provided higher precision of estimation because the distinction was made between companies that had not made dividend payments over a five-year period included in the research sample and companies which did not make dividend payments in the financial year when COVID-19 crisis started but previously had the practice of dividend payment. This implies that companies which suspended their long-lasting practice of dividend payments or decreased dividend payments in the financial year when the COVID-19 crisis started are probably not prone to earnings management practices, while companies that continued their practice of dividend payments during the crisis are.

Companies that decreased their dividend payments or were not able to make dividends payments most likely did so probably because they had presumed investors' tolerance for companies that did not make dividend payments due to the difficult circumstances they found themselves in, similar to what Ahmad-Zaluki et al. [21] and Türegün [22] stated for the financial performance of companies during a crisis. Thus, the economic crisis caused by the COVID-19 pandemic provided a solid excuse for companies that were seeking an opportunity to suspend their long-standing practice of securing part of their cash-flows for dividend payments.

Furthermore, lack of resources and economic difficulties characteristic for periods of economic downturn can cause a shift in stakeholders' behaviour in a way that they become more alert and scrutinize activities of a company they are interested in investing in more carefully than in a time of economic prosperity. Therefore, some companies are probably more inclined to lower dividends paid to their shareholders or completely abstain from dividend payments rather than engage in manipulative activities.

The results of this research could be useful for various groups of corporate stakeholders, but primarily for actual and potential investors. They could interpret actions that companies take within their dividend policies or, more precisely, they have to be cautious when companies continue the practice of dividend payments during the COVID-19 crisis because there is a possibility of increased earnings management in that scenario. On the other side, if a company suspends their dividend payments during the COVID-19 crisis, it could be evidence of its rational behaviour in terms of earnings management.

RELATIONS TO PREVIOUS FINDINGS

Research results indicate that the economic crisis caused by the COVID-19 pandemic had a positive effect on the relationship between earnings management and dividend payments in the case of income-increasing accruals regarding companies that made regular dividend payments. This is in line with researches conducted by Kasanen et al. [11], Daniel et al. [12] and Atieh and Hussain [13] regarding the relationship between earnings management and dividend payment, Ahmad-Zaluki et al. [21], Da Silva et al. [10], Flores et al. [17], Koowattanatianchai [18] and Xiao and Xi [16] regarding the effect of the economic crisis on earnings management, as well as statements made by Abdulkadir et al. [27] and Laing et al. [28] regarding dividend payments during a crisis.

On the other side, the research results for the effect of the economic crisis caused by the COVID-19 pandemic on the relationship between earnings management and dividend payments were not statistically significant considering absolute discretionary accruals and income-decreasing discretionary accruals, which is in line with researches of Shah et al. [24], Abbasi et al. [25] and Abbadi et al. [26].

FUTURE RESEARCH AND RESEARCH LIMITATIONS

Future research should consider a separate analysis of the companies which increased their dividend payments during the economic crisis caused by the COVID-19 from those which decreased their dividend payments or abstained from dividend payments during the economic crisis caused by the COVID-19. It would be interesting to determine if the latter companies made new modifications in their recently implemented dividend policies immediately after the first year of the COVID-19 economic crisis and to examine the level of earnings management in their financial statements.

Also, it would be interesting to examine investors' reactions to dividend policies companies had applied during the COVID-19 economic crisis. Did investors appreciate companies that have not resorted to manipulative practices to create an impression of a stable financial situation or did they completely focus on dividend payments that they received based on shares they own?

The size of the research sample was affected by the fact that the Croatian stock market comprises a relatively small number of companies. Therefore, future research should be conducted on capital markets with larger number of companies or should include companies listed in capital markets from several countries with similar characteristics.

Despite the unquestionable prevalence of the Modified Jones model as a measure of earnings management, its weaknesses should be considered and future research could apply different measures of the mentioned construct to provide additional assurance.

Given that the economic crisis caused by the COVID-19 pandemic is still ongoing, it offers vast opportunities for scientific activities. Hence, various economic variables should be considered in future research to enhance the understanding of its effect on the corporate environment [47], and to identify the means necessary for timely and effective response to its consequences [48].

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