CAN DIVIDEND PAYMENTS MITIGATE THE INFLUENCE OF COVID-19 CRISIS ON EARNINGS MANAGEMENT? EVIDENCE FROM BRAZIL

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▪ Received: 02/28/2022 ▪▪ Approved: 11/27/2022 ▪▪▪ Second Approved Version: 12/20/2022

ABSTRACT

This paper examines whether dividend payments mitigate the influence of COVID-19 crisis on earnings management practices in Brazil. For this purpose, we use a sample of 264 Brazilian public firms from 2010 to 2021, applying System Generalized Method of Moments (SYS-GMM) regressions. Our main results indicate that, although firms are more prone to engage in earnings management practices during the COVID-19 period, the dividend payout ratio mitigates this influence on earnings management level. Therefore, we show that dividend payment can act as a substitute corporate governance mechanism in times of crisis, since it can reduce the occurrence of earnings management. Additional analyses also support this view, showing that big levels of dividends play a role in minimizing agency conflicts by reducing the level of earnings management. Hence, we contribute to the literature on dividend policy and earnings management, which calls for research to better understand the influence of dividends on earnings management practices in financial crises periods. Further, we shed light on how firms can use dividend policies as a substitute corporate governance mechanism to maintain or establish its reputation during periods of financial crises, benefiting investors, boards, creditors, financial analysts, and policymakers due the increase on the financial reporting quality.

Keywords: Dividends Policy. Earnings Management. Accruals. Covid-19. Financial Crisis.

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O PAGAMENTO DE DIVIDENDOS PODE MITIGAR A INFLUÊNCIA DA CRISE DO COVID-19 NO GERENCIAMENTO DE RESULTADOS? EVIDÊNCIA DO BRASIL

RESUMO

Este artigo analisa se o pagamento de dividendos tem o papel de mitigar a influência da crise do COVID-19 na prática de gerenciamento de resultados no Brasil. Para tanto, utilizamos uma amostra de 264 empresas brasileiras de capital aberto no período de 2010 a 2021, por meio de regressões aplicando o Método dos Momentos Generalizados (SYS-GMM). Os principais resultados indicam que, embora as empresas estejam mais propensas a praticar o gerenciamento de resultados durante o período da COVID-19, o nível de payout atenua essa influência no nível de gerenciamento de resultados nas empresas analisadas. Portanto, o pagamento de dividendos pode atuar como um mecanismo substituto de governança corporativa em momentos de crise, uma vez que pode reduzir a ocorrência de gerenciamento de resultados. Análises adicionais também suportam essa visão, evidenciando que altos níveis de pagamento de dividendos desempenham um papel na minimização de conflitos de agência ao reduzirem o nível de gerenciamento de resultados. Assim, o presente artigo contribui com a literatura sobre política de dividendos e gerenciamento de resultados, a qual demanda pesquisas para melhor compreender a influência dos dividendos na prática de gerenciamento de resultados em períodos de crise financeira. Além disso, traz insights de como as empresas podem usar as políticas de dividendos como um mecanismo substituto de governança corporativa para manter ou estabelecer sua reputação durante períodos de crises financeiras, beneficiando investidores, conselhos, credores, analistas financeiros e reguladores devido ao aumento da qualidade dos relatórios financeiros.

Palavras-Chave: Política de Dividendos. Gerenciamento de resultados. *Accruals*. Covid-19. Crise financeira.

1 INTRODUCTION

Information asymmetries between managers and shareholders give rise to agency conflicts since managers have incentives to keep excess cash to obtain personal benefits (Jensen & Meckling, 1976). In this sense, the dividend payment can be viewed as a form to reduce manager's opportunistic behavior because dividend-paying firms have fewer resources available and are more subordinated to market monitoring (He, Ng, Zaiats & Zhang, 2017; Sirait & Siregar, 2014; Tong & Miao, 2011). Moreover, cash dividends based on profits that do not reflect the firm's performance tend not to be sustainable in the future, once managers need actual cash flow for the dividend payment (Sirait & Siregar, 2014).

Prior literature found evidence that dividend policies lead to increase the financial reporting quality both in developed and emerging countries (Chen, Shevlin & Tong, 2007; He et al., 2017; Lawson & Wang, 2015; Smith & Pennathur, 2017; Skinner & Soltes, 2011; Tong & Miao, 2011), supporting the view that dividend payments reduce the free cash flow available to managers and thus constrains the discretion over the financial reporting. Thus, these findings could shed light that

dividends could act as a substitute for other corporate governance mechanisms, including in crisis periods (Sawicki, 2009).

In crisis periods, such as the spread of COVID-19 pandemic, the literature shows that firms are more prone to engage in earnings management practices to alleviate the level of reported losses in order to rebuild the investor confidence, thereby, resulting in a reduced reliability of the financial reporting (Lassoued & Khanchel, 2021; Xiao & Xi, 2021; Oliveira & Modena, 2022). Hence, we consider that it is relevant to examine whether dividends can mitigate the influence of COVID-19 crisis on the earnings management practices, acting as a corporate governance substitute mechanism by increasing the financial reporting quality to several stakeholders (Rampershad & Villiers, 2019; Sawicki, 2009).

Therefore, this study examines whether dividend payment can mitigate the influence of COVID-19 crisis on earnings management practices in Brazilian public firms. We consider that Brazil offers an interesting setting to carry out this investigation due the scenario of weak shareholder protection, similar to other emerging markets, in which dividends could be one way to establish a good reputation, reducing the likelihood of retained earnings for managerial expropriation (La Porta, Lopez-de-Silanez, Shleifer, & Vishny, 2000).

To test our prediction, we estimated System Generalized Method of Moments (SYS-GMM) regressions due to the endogenous relationship between dividend payment and earnings management. Our sample includes 264 Brazilian public firms from 2010 to 2021.

Our main results show that, although firms are more prone to engage in earnings management practices during the COVID-19 crisis period, the dividend payout ratio can mitigate this influence on earnings management level in Brazil. This finding supports our hypothesis that during crisis periods, the dividend payment plays a role in reducing earnings management practices, signaling that dividends can act as a substitute for other corporate governance mechanisms, especially in crisis periods (Sawicki, 2009).

In additional analyses, we further explore the moderating role of big dividends and dividend persistence on the relationship between COVID-19 crisis and earnings management practices. Our additional analyses highlight that big dividends play a role in minimizing agency conflicts by reducing the level of earnings management, supporting the view that large dividend-paying firms have higher (lower) earnings quality (earnings management) than firms that distribute small dividends or do not pay dividends. Furthermore, although dividend persistence is not statistically significant, we also find that big dividends moderate negatively the association between COVID-19 crisis and earnings management, which is in line with our predictions.

Our contributions to the literature are threefold. First, we contribute to the recent literature on earnings management and COVID-19, which has not explored the moderating role of dividends in this relationship yet (Lassoued & Khanchel, 2021; Xiao & Xi, 2021; Oliveira & Modena, 2022). Thus, to the best of our knowledge, this is the first study to shed light on how dividends could shape earnings management behavior during crisis periods, such as the COVID-19 pandemic.

Second, we contribute to the literature on corporate governance that investigates dividend policies as substitute corporate governance mechanisms

during crisis periods, but do not explore its influence on reducing earnings management practices (Sawicki, 2009). This gap allows us to show potential benefits of dividend policy during crisis periods, especially in a scenario of poor investor protection, such as the Brazilian setting, in which is expected lower levels of financial reporting quality. Further, we also attend the suggestion to examine the effectiveness of dividend payout as a corporate governance mechanism in countries with weak shareholder protection (Sawicki, 2009), such as the Brazilian setting.

Third, we also contribute to the literature on dividends and earnings management, which calls for research to examine the relationship between dividend policy (e.g., dividend persistence) and earnings management in periods of specific financial crises, such as the COVID-19 crisis (Martins, Sousa, & Girão, 2022). Although our findings do not support the view that dividend persistence could lead to lower levels of earnings managements in the COVID-19 crisis period, they support the view that investors can expect higher financial reporting quality as dividend payout ratio increases, and for big dividend-paying firms.

Finally, this study has several practical implications. We shed light on how Brazilian public firms can use dividend policies as a mechanism to maintain or establish its reputation during periods of financial crises, which will act as a substitute corporate governance mechanism that benefits investors, boards, creditors, financial analysts, and policymakers due the reduction in the likelihood of earnings misstatements and, consequently, information asymmetries between managers and shareholders.

2 THEORETICAL BASIS AND HYPOTHESIS DEVELOPMENT

The informational content of dividends and its relationship with the firm's earnings is firstly explored by Lintner (1956), which shows that firms usually fix a target payout rate about the firm's earnings and that managers seek the stability of dividends, being reluctant to make reductions in the payout levels. According to Miller and Modigliani (1961), this occurs since shareholders are likely to interpret any change in the payout rate as a change in the management's views about the firm's future earnings prospects. Thus, an increase (a reduction) in the payout ratio may be interpreted by investors as a positive (negative) expectation about the firm's future performance.

Based on the informational content of dividends, the Signalling Theory has emerged to explain why firms pay dividends and avoid reducing their payout ratios. The Signalling Theory considers that insiders (managers and majority shareholders) are better informed than outsiders (minority and potential shareholders) in relation to the firm's future potential. In this sense, insiders can transmit signals to reduce the information asymmetry through adjustments in the dividend policies since an increase (a reduction) in the payout's levels indicates a promising (unfavorable) perspective of the firm (Amar, Salah & Jarboui, 2018).

The rationale behind dividend signalling is that paying dividends proves that a firm can generate cash rather than just accounting earnings. Further, managers have an incentive to perform well enough to maintain the dividend policy and avoid the adverse consequences of a dividend cut, reduction or any equity issue to replace the funds paid out (Asquith & Mullins, 1986). Consequently, it is expected

that dividends signal higher earnings quality because abnormal accruals cannot indefinitely hide inadequate cash flows required for consistent dividend payments (Rampershad & Villiers, 2019).

The role of dividend policies on reducing information asymmetry is also explored in the Agency Theory, which holds that reducing the levels of free cash flow mitigates manager's misappropriation practices and induces higher levels of firm's monitoring by the capital markets (Easterbrook 1984; Jensen 1986). Thus, dividends may play a role in minimizing agency conflicts between corporate managers and shareholders, reducing the agency costs of free cash flow, since managers with substantial free cash flows can increase dividends and thereby pay out current cash that would otherwise be invested in low-return projects (Jensen, 1986) or used to obtain personal benefits at the expense of shareholders (Boulton, Braga-Alves & Shastri, 2012).

Under this view that dividend payment reduces the free cash flow available to managers and thus constrains the discretion over the financial reporting by opportunistic management (Deng et al., 2017; Pinkowitz et al., 2006), firm managers who decide to pay dividends could be less likely to engage in earnings management practices (He et al., 2017).

Furthermore, the ability to pay dividends is dependent on the availability of cash, and significant differences between the levels of reported earnings and cash available for dividends would eventually be a red flag of potential problems. Consequently, it is expected that dividends increase the credibility of reported earnings because it is costly for managers to pay cash dividends on managed earnings that are not supported by underlying cash flows (Tong & Miao, 2011).

Recent studies examine empirically whether dividend policies influence on earnings management practices (Deng et al., 2017; He et al., 2017; Lawson & Wang, 2015; Pathak & Ranajee, 2018; Rampershad & Villiers, 2019 Rodrigues et al., 2014; Sirait & Siregar, 2014; Smith & Pennathur, 2019; Tong & Miao, 2011; Welker, Ye, & Zhang, 2017). Overall results show that dividends are negatively associated with the discretionary accruals, in line with the view that dividend payers have less cash available to manage accruals, which leads to authentic and sustainable earnings to support consistent dividend payments (Rampershad & Villiers, 2019).

However, whether and how dividend policies influence on earnings management practices during crisis periods, such as COVID-19 pandemic, is an open-ended question. In crisis periods, it is expected that firms are more prone to engage in earnings management practices to shape a positive image to market participants, especially, actual and potential investors.

Previous literature supports this view by showing that firms tend to manage earnings during the COVID-19. One of the first studies was conducted by Lassoued and Khanchel (2021) analyzed the impact of COVID-19 on earnings management practices in a sample of 2,031 listed firms in 15 European countries from 2017 to 2020. They found that firms tend to manage earnings during the period of COVID-19 crisis than during the preceding period and also found a significant income-increasing earnings management during the crisis. These findings suggest that firms manage earnings upward by alleviating the level of reported losses to rebuild the investor confidence, resulting in a reduced reliability of the financial reporting during the COVID-19 period.

In a similar way, Xiao and Xi (2021) investigated the relationship between the COVID-19 pandemic and the earnings management practices in Chinese listed firms. The results indicated an increase in accruals-based earnings management in firms in the most severely affected regions. Moreover, the authors found that firms audited by the Big 10 auditors were less likely to manage earnings during the pandemic.

Furthermore, Oliveira e Modena (2022) contributed to this discussion analyzing the context of Latin America. They analyzed 594 companies from 9 countries during 2017 to 2020. The findings pointed to a positive and significant influence of the pandemic on earnings management practices, corroborating with the results presented by international literature and suggesting that the pandemic motivated managers' discretionary practices.

Thus, although firms are more prone to engage in earnings manipulation during crisis periods (Lassoued & Khanchel, 2021; Xiao & Xi, 2021; Oliveira & Modena, 2022), we conjecture that the dividend policy could play a role in reducing the earnings management behavior during these periods. This view is supported by the notion that it is costly for managers to pay cash dividends on managed earnings that are not supported by underlying cash flows (Tong & Miao, 2011), therefore, firms with higher payout ratios tend to present lower levels of earnings management during periods of crisis since managers will need actual cash flow for the dividend payment.

Under this notion, we suggest that dividends could act as a substitute for other corporate governance mechanisms in crisis periods. This view is proposed by Sawicki (2009), which shows that dividend payout is a clear effective corporate governance mechanism in crisis periods, especially useful to firms lacking other sources of reputation. Based on the above discussion, we predict our research hypothesis as follows:

H1: The dividend payments played a role in reducing earnings management practices during the COVID-19 crisis.

3 RESEARCH METHODOLOGY

3.1 Data Description

Our initial sample comprises Brazilian public firms from 2011 to 2021. We consider the period post-IFRS adoption since the convergence process improves the accounting information quality (Pelucio-Grecco, Geron, Grecco & Lima, 2014; Sousa, Sousa & Demonier, 2016).

Consistent with prior literature (Liu & Espahbodi, 2014; Skinner & Soltes, 2011; Tong & Miao, 2011), we excluded the financial industry due to specific operational characteristics and particular regulation environment. We limited the sample to firms with available annual data to calculate the variables applied in the research model. We also excluded firms with negative equity to avoid misleading effects.

Our final sample comprises 264 Brazilian public firms from 2011 to 2021, in an unbalanced panel data with 2,368 firm-year observations. Table 1 shows the sample composition.

Table 1
Sample composition.

Brazilian public firms	575
(-) financial industry firms	220
(-) firms with missing values	79
(-) firms with negative equity	12
(=) final sample	**264**

Source: Prepared by the authors.

We obtain financial information from Thomson Reuters® database. After data collection, we applied winsorization data at 1% and 99% levels to mitigate the outliers. Table 2 shows descriptive statistics to characterize our final sample.

Table 2
Descriptive Statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
DA	2,368	0.063	0.071	0.000	0.839
Payout	2,368	0.302	2.138	-39.833	63.359
Covid	2,368	0.166	0.372	0.000	1.000
ROA	2,368	0.034	0.101	-1.064	0.362
Loss	2,368	0.220	0.414	0.000	1.000
Big	2,368	0.751	0.432	0.000	1.000
Size	2,368	21.864	1.762	16.430	25.697
Lev	2,368	0.273	0.177	0.000	0.809
Tang	2,368	0.218	0.217	0.000	0.826
Growth	2,368	0.143	0.437	-0.883	3.068
OPCF	2,368	0.062	0.085	-0.344	0.335
Conc	2,368	0.534	0.311	0.000	1.000

Source: Prepared by the authors.

The mean for the dependent variable of earnings management (absolute discretionary accruals) is 0.063 (6.3%), with a standard deviation of 0.071 (7.1%), which is comparable to developed and emerging markets (He et al., 2017) and also for Latin American context (Rathke, Santana, Lourenço & Dalmácio, 2016).

Regarding the level of dividend payments, Table 2shows that the mean payout is 3.2%, in which the highest value is 63.35%. Besides, the percentage of controlling shareholding is, on average, 53.4%, corroborating the scenario of ownership concentration in the Brazilian setting, which could influence dividend policy.

We proceed to the normality test in our data through the Shapiro-Wilk test. Due to the non-normality of the variables, we applied Spearman correlation coefficients (see Appendix A). Based on the correlation matrix coefficients, we find that there is no evidence of the presence of collinearity since there is no moderately high correlation between independent and control variables included in the econometric models, except for *Payout* and *ROA* (0.499) and *Payout* and *Loss* (-0.597).

However, the Variance Inflation Factor (VIF) test confirms that there is no multicollinearity problem across our models since for all models, the VIF numbers

(not reported) were below the suggested value of 4.0 (O'Brien, 2007), which does not require the exclusion of any variable.

3.2 Variables Definition

Our dependent variable is earnings management, which is measured by discretionary accruals from the performance-adjusted discretionary accruals model (Kothari, Leone & Wasley, 2005). In this model, return on assets (ROA) is included as an additional variable, because previous models could be misspecified for well-performing or poorly performing firms (Kothari et al., 2005; Tucker & Zarowin, 2006).

The discretionary accruals are calculated by the residual represented by the error term of the regression (1). Specifically, we applied the same estimation by Bao and Lewellyn (2017), which consists of estimating the regression (1) using ordinary least squares (OLS) for all firms and controlling for performance. We just performed robust standard errors in the OLS model, because the data presented evidence of heteroskedasticity (White's general test statistic = 579.070***).

$$\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{i,t-1}}\right) + \alpha_2 \left(\frac{\Delta SALES_{i,t}}{A_{i,t-1}}\right) + \alpha_3 \left(\frac{PPE_{i,t}}{A_{i,t-1}}\right) + \alpha_4 ROA_{i,t} + \varepsilon_{i,t} \quad (1)$$

where *TA* is total accruals defined as the difference between net income and operating cash flow. *A* is total assets. *ΔSALES* is the change in net sales and net accounting receivables. *PPE* is net property, plant, and equipment. *ROA* is the return on assets.

According to Kothari et al. (2005), there is no single accrual model that is free of the model misspecification problem. Under these circumstances, the performance-matched Jones model is recommended as the best choice among extant accrual models to estimate discretionary accruals (Lee & Vetter, 2015).

Finally, consistent with prior studies (e.g., Bao & Lewellyn, 2017; He et al., 2017; Pelucio-Grecco et al., 2014; Sirait & Siregar, 2014; Tong & Miao, 2011), we use the magnitude of discretionary accruals as a proxy for earnings management.

To capture the dividend policy, we use the payout ratio instead of a dummy variable that capture whether the firms pay dividends or not, considering the Brazilian dividend mandatory rules, in which profitable firms have to pay out, typically, 25% of the year's net income (Martins & Novaes, 2012). Following previous literature, we measure payout ratio as the ratio of dividends and interest on equity paid scaled by net income (Galvão et al., 2018; He et al., 2017; Liu & Espahbodi, 2014).

As mentioned, the payout ratio considers both dividends and interest on equity since Brazilian firms can also remunerate shareholders via interest on equity (Velez-Pareja & Benavides-Franco, 2011). The interest on equity became an important and attractive way to pay dividends for corporate tax reasons, that is, the net tax effect of interest on equity payments is lower once they are deductible at the corporate level (Boulton et al., 2012).

However, in line with the Law 6.404 (Brasil, 1976), it is important to highlight that although the payment of interest on equity to shareholders is discretionary in the Brazilian context, the dividend payment is mandatory and the amount must

be defined in the bylaws. Thus, managers could decide whether the company distributes higher (lower) dividend levels. When the dividend ratio is omitted in the bylaws, the public firms have to pay, at least, 50% of the adjusted net profit, for the purpose of improving protection for external shareholders (Hahn, Nossa, Teixeira & Nossa, 2010).

Empirical evidence shows that the majority of the public firms tend to adopt incremental dividend payments above the minimum amount defined in the bylaws and tend to maintain the form of remuneration and the payout level during the years (Galvão, Santos & Araújo, 2018).

Gomes, Takamatsu and Machado (2012) reported that the interest on equity payments have been shown to be more advantageous than traditional dividends as a way of distributing the excess of cash to shareholders. The interest on equity has become an interesting payment option to shareholders (Zani, Leites, Macagnan & Portal, 2014) and has presented a dramatic increase in the use of interest on equity in Brazilian firms over the years (Boulton et al., 2012).

We also included control variables that potentially could influence earnings management practices: size, leverage, profitability, tangibility, growth opportunities, operating cash flow, loss, ownership concentration, and big four. These variables are based on related studies (e.g., Deng et al., 2017; He et al., 2017; Lawson & Wang, 2015; Pathak & Ranajee, 2018; Rampershad & Villiers, 2019; Rodrigues et al., 2014; Sirait & Siregar, 2014; Smith & Pennathur, 2019; Tong & Miao, 2011; Welker et al., 2017).

Size is related to the perspective of larger firms are subjected to a higher level of monitoring, which could reduce the propensity to engage in earnings management practices (González & García-Meca, 2014). *Leverage* is related to the fact that firms with a high degree of financial leverage are more likely to higher levels of earnings management due to the possibility of potential losses, such as debt violation clauses (Chen & Zhang, 2014). *Profitability* is based on the view that managers are motivated to manipulate the results upward, increasing the profits obtained to make the company more attractive for stakeholders, and to improve top executive bonus plans, since the profitability is a measure to evaluate manager performance (Dechow, Sloan & Sweeney, 1995; Kothari et al., 2005; Machuga & Teitel, 2007). *Tangibility* is added based on the argument that tangible asset payoffs are easier to observe, leading to lower levels of information asymmetry (Al-Jaifi, 2017; Munisi, Hermes & Randoy, 2014).

Growth is related to the argument that growing companies tend to exhibit large accruals (Burgstahler, Hail & Leuz, 2006). *Operating Cash Flow* is also mentioned as a proxy for expected growth in the firm's operations (Rayburn, 1986; Larcker & Richardson, 2004). *Loss* is based on the view that the market tends to react negatively whether firms experience loss, thus motivating them to manage earnings (Callen, Robb & Segal, 2008). *Ownership Concentration* is included since increases in ownership concentration could lead to reduction in the payout levels (Dalmácio & Corrar, 2007). Finally, *Big Four* auditorship is related to the argument that big audit firms need to protect their reputation, affecting the propensity of firms audited by them to engage in fewer earnings management (Francis & Wang, 2008). Table 3 shows the summary of all variables included in this research.

Table 3
Variables definition.

Variable abbreviation	Variable name	Definition	Previous literature
DA	Absolute Discretionary Accruals	Measure of earnings management practices computed as absolute residual from Kothari et al. (2005) model.	Lawson and Wang (2015); Rampershad and Villiers (2018); Rodrigues et al. (2014); Sirait and Siregar (2014); Tong and Miao (2011).
Payout	Payout	Measure of dividends and interest on equity that a firm pays to its stockholders, computed as the ratio of dividends and interest on equity paid scaled by net income.	Galvão et al. (2018), He et al. (2017); Liu and Espahbodi (2014).
Covid	Covid Crisis	Measure of covid crisis, computed as a dummy variable that takes value of 1 in the period of COVID-19 crisis, and zero, otherwise.	Krieger, Mauck and Pruitt (2021).
Size	Size	Measure of firm size computed as natural log of total assets.	Deng et al. (2017); He et al. (2017); Liu and Espahbodi (2014); Rampershad and Villiers (2018); Rodrigues et al. (2014); Saona and Muro (2017); Tong and Miao (2011); Welker et al. (2017).
ROA	Profitability	Measure of profitability computed as the ratio of net income scaled by total assets.	Deng et al. (2017); Liu and Espahbodi (2014); Rampershad and Villiers (2018); Smith and Pennathur (2017); Tong and Miao (2011); Welker et al. (2017).
Lev	Leverage	Measure of leverage computed as the ratio of total debt scaled by total assets.	Deng et al. (2017); Lawson and Wang (2015); Liu and Espahbodi (2014); Rodrigues et al. (2014); Welker et al. (2017).
Tang	Tangibility	Measure of tangibility computed as the ratio of net property, plant and equipment scaled by total assets.	Al-Jaifi (2017).
Growth	Growth	Measure of sales growth computed as the change in net sales.	He et al. (2017); Lawson and Wang (2015); Rampershad and Villiers (2018); Rodrigues et al. (2014); Sirait and Siregar (2014); Tong and Miao (2011).
OPCF	Operating Cash Flow	Ratio of cash flow from operating activities scaled by total assets.	He et al. (2017); Pathak and Ranajee (2018).
Big	Big Four	Measure of audit quality computed as a dummy variable that takes value of	He et al. (2017); Lawson and Wang (2015).

		1 if the firm is audited by a Big4 auditorship (PwC, KPMG, EY or Deloitte) and zero, otherwise.	
Loss	Loss	Measure of net loss computed as a dummy variable that takes value of 1 if the firm reported negative net income and zero, otherwise.	Ali and Zhang (2015); Lawson and Wang (2015); Rampershad and Villiers (2018); Sirait and Siregar (2014); Tong and Miao (2011).
Conc	Ownership Concentration	Measure of ownership concentration computed as 1- free float of voting shares.	Dalmácio e Corrar (2007).

Source: Prepared by the authors.

3.3 Regression Specification

We analyze the moderating role of dividend payment on the relationship between COVID-19 crisis and earnings management by applying System Generalized Method of Moments (SYS-GMM) regressions due to the endogenous relationship between dividend payout and earnings management. Given the Absolute Discretionary Accruals, as the dependent variable, we propose the following model:

$$DA_{ij} = \alpha_{ij} + \beta_{1ij}Payout_{ij} + \beta_{2ij}Covid_{ij} + \beta_{3ij}Payout\ x\ Covid_{\ ij} + \sum_{i=4}^{n} Controls_{ij} + e_{ij} \quad (2)$$

where DA_{ij} represents the Absolute Discretionary Accruals dependent variable in the firm *i,* year *j*. *Payout* represents the payout independent variable in the firm *i,* year *j*. *Covid* represents the dummy of covid crisis in in the firm *i,* year *j.* Finally, the interaction term between *Payout* and *Covid* captures the effect of dividend payout on the relationship between COVID-19 crisis and earnings management, in order to test our Hypothesis H_1.

4 RESULTS AND DISCUSSION

4.1 Regression Results and Analyzes

Aiming to test our hypothesis (H1), which predicts that the dividend payments play a role in reducing earnings management practices during the COVID-19 crisis, we regressed the absolute value of discretionary accruals on dividend payout. The results are reported in Table 4.

Table 4
Influence of Payout on Earnings Management during the COVID-19 crisis.

Dependent variable	*DA*
Payout	-0.001 (0.001)
Covid	0.013*** (0.004)
Payout x Covid	-0.007*** (0.001)

ROA	-0.0319 (0.058)
Loss	-0.002 (0.005)
Big	-0.002 (0.009)
Size	0.001 (0.011)
Lev	0.010 (0.028)
Tang	-0.062** (0.029)
Growth	0.015** (0.006)
OPCF	-0.009 (0.064)
Conc	-0.004 (0.013)
Intercept	0.0287 (0.247)
Observations	1,832
Wald chi2	104,72***
Arellano-Bond test	-4,622***
Sargan test	59,484

Standard errors are reported in parentheses. *,***,*** indicate significance at the 10%, 5%, and 1% levels (two-tailed), respectively
Source: Prepared by the authors.

The above results (Table 4) show that firms engage in earnings management practices during the COVID-19 crisis. This finding corroborates with Lassoued and Khanchel (2021), that showed that European firms tend to manage earnings during COVID-19 than compared with the preceding period.

Although the *Payout* variable did not present a significant coefficient, the interaction variable *Payout* x *Covid* has a significant and negative coefficient. It indicates that, during the COVID-19, dividend payments can reduce the earnings management practices in the firms analyzed, avoiding the expropriation of corporate resources for managers personal interests. That is, the amount paid to shareholders cannot be used to opportunistic practices (Deng et al., 2017; Easterbrook 1984; Jensen 1986; Pinkowitz et al., 2006), signalling the credibility of reported earnings since they need to be supported by underlying cash flows to provide consistent dividend payments (Amar et al., 2018; Rampershad & Villiers, 2018; Tong & Miao, 2011).

This finding supports our hypothesis and provides evidence that dividend payments can act as a substitute for other corporate governance mechanisms in times of crises, reducing earnings management practices and increasing the financial reporting quality to several stakeholders (Rampershad & Villiers, 2019; Sawicki, 2009).

Regarding the control variables, our results show the *Tangibility* coefficient is negative and significant across the model. That is, tangible asset payoffs are easier to observe, leading to lower levels of information asymmetry (Al-Jaifi, 2017; Munisi et al., 2014). Additionally, our results show a positive and significant relationship

between *Growth* and *Absolute Discretionary Accruals*. That is, growing companies tend to exhibit large accruals (Burgstahler et al., 2006).

The other control variables did not present significant coefficients, implying that profitability, leverage, operating cash flow, loss and ownership concentration do not reduce earnings management practices in the sample analyzed. Moreover, there is no evidence that big audit firms reduce the propensity of firms to engage in lower earnings management practices (Francis & Wang, 2008) since the *Big Four* coefficient is not significant. One explanation for this non-significance may be attributed to a large number of Brazilian firms (approximately 75%) that are audited by big four auditorship, reducing the model's variability to capture this relationship.

4.2 Additional Analysis

To further understand the role of payout on earnings management practices during the COVID-19 crisis, we provide additional tests to verify the influence of big dividends and dividend persistence in the absolute discretionary accruals. The results are reported in Table 5 and 6, respectively.

Table 5
Influence of Big Dividends on Earnings Management during the COVID-19 crisis.

Dependent variable	*DA*
Big Div	-0.007**
	(0.003)
Covid	0.019***
	(0.006)
Big Div x Covid	-0.016**
	(0.008)
ROA	-0.030
	(0.059)
Loss	-0.004
	(0.005)
Big	-0.003
	(0.009)
Size	0.001
	(0.011)
Lev	0.0127
	(0.029)
Tang	-0.066**
	(0.031)
Growth	0.015**
	(0.006)
OPCF	-0.025
	(0.063)
Conc	-0.004
	(0.0131
Intercept	0.056
	(0.250)
Observations	1,832
Wald chi2	37,60***
Arellano-Bond test	4,711***
Sargan test	58,553

Standard errors are reported in parentheses. *,***,*** indicate significance at the 10%, 5%, and 1% levels (two-tailed), respectively
Source: Prepared by the authors.

The results from Table 5 show that big dividends play a role in minimizing agency conflicts by reducing the level of earnings management. That is, firms that pay a higher level of dividends are less likely to engage in earnings management practices, reducing the discretion over the financial reporting by opportunistic management (Deng et al., 2017; Pinkowitz et al., 2006; He et al., 2017).

The big dividend payments could be attributed as a form to exceed the mandatory level, playing a role in minimizing agency conflicts since higher levels of cash paid out to shareholders provide fewer opportunities for management misappropriation (Pinkowitz et al., 2016; Rampershad & Villiers, 2018). That is, big dividend-paying firms are certainly supported by cash, which is less likely to come from managed earnings that do not have a strong cash basis (Tong & Miao, 2011).

In relation to the *Covid* variable, the results show a positive coefficient, indicating that, during the COVID-19 period, the firms are more pronounced to engage in earnings managements practices. This finding corroborates with our previous result from Table 4 and the study from Lassoued and Khanchel (2021). When we analyze the interaction variable *Big Div* x *Covid,* the results show that large dividend-paying firms have higher (lower) earnings quality (earnings management) than firms that distribute small dividends or do not pay dividends.

The following table presents the results of the impact of dividend persistence on earnings management practices during the COVID-19 (Table 6).

Table 6
Influence of Dividend Persistence on Earnings Management during the COVID-19 crisis

Dependent variable	*DA*
Persistence	-0.004 (0.009)
Covid	0.017 (0.021)
Persistence x Covid	-0.005 (0.022)
ROA	-0.023 (0.074)
Loss	0.028*** (0.010)
Big	0.008 (0.014)
Size	0.002 (0.011)
Lev	0.001 (0.055)
Tang	-0.012 (0.044)
Growth	0.026** (0.011)

OPCF	-0.067 (0.104)
Conc	0.008 (0.027)
Intercept	-0.001 (0.254)
Observations	873
Wald chi2	37.52***
Arellano-Bond test	-2.977***
Sargan test	54.389

Standard errors are reported in parentheses. *,***,*** indicate significance at the 10%, 5%, and 1% levels (two-tailed), respectively
Source: Prepared by the authors.

Considering the dividend persistence, the results presented in Table 6 did not provide significant coefficients for our variables of interest. For the Brazilian firms analyzed, the dividend persistence does not seem to influence on earnings management practices, neither in time of crises, especially COVID-19.

5 CONCLUSION AND IMPLICATIONS

Under the view that dividend policy can act as a substitute corporate governance mechanism in crisis periods, we examine whether dividend payments can mitigate the influence of COVID-19 crisis on earnings management practices. For this purpose, we used a sample of 264 Brazilian public firms from 2010 to 2021, applying SYS-GMM regressions due to the endogenous relationship between dividend payment and earnings management.

Our main findings indicate that, although firms are more prone to engage in earnings management practices during the COVID-19 period, the dividend payout ratio can mitigate this influence on earnings management level, supporting our research hypothesis. Therefore, dividend payments can be viewed as a substitute corporate governance mechanism in crisis periods since they can reduce the occurrence of earnings management practices.

Additional analyses also support this view, showing that big levels of dividends play a role in minimizing agency conflicts by reducing the level of earnings management. In this sense, the view that it is costly for managers to pay cash dividends on managed earnings that are not supported by underlying cash flows explain our findings. Under this view, firms with higher payout ratios tend to present lower levels of earnings management during periods of crisis, since managers will need actual cash flow for the dividend payment.

Hence, our results contribute to the literature on dividend policy and earnings management, providing a better understand about the influence of dividends on earnings management practices in financial crises periods, especially COVID-19. Further, we also shed light on how firms can use dividend policy as a substitute corporate governance mechanism to maintain or establish its reputation during periods of financial crises, benefiting investors, boards, creditors, financial analysts and policymakers, due the increase on the financial reporting quality.

Finally, we highlight that further studies can examine other moderating effects that might explain the earnings management behavior during crisis

periods, such as stock price crash risk, CEO power or other CEO idiosyncratic characteristics, such as personality traits. In addition, they also can expand the analyses to other related countries and consider other proxies for earnings quality, as a way to verify the similarities or differences from our study.

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APPENDIX

Appendix A- Spearman Correlation Coefficients

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) DA	1.000											
(2) Payout	**-0.046**	1.000										
(3) Covid	**0.078**	-0.023	1.000									
(4) ROA	**0.117**	**0.500**	**0.078**	1.000								
(5) Loss	0.005	**-0.597**	-0.039	**-0.718**	1.000							
(6) Big	-0.034	**0.240**	**-0.051**	**0.120**	**-0.121**	1.000						
(7) Size	**-0.122**	**0.279**	**0.089**	0.020	**-0.133**	**0.437**	1.000					
(8) Lev	-0.012	-0.016	0.009	**-0.253**	**0.116**	**0.204**	**0.378**	1.000				
(9) Tang	**-0.061**	**-0.081**	-0.025	**-0.111**	**0.060**	**-0.114**	**-0.057**	**0.110**	1.000			
(10) Growth	**0.082**	**0.115**	**0.119**	**0.262**	**-0.216**	**0.047**	**0.080**	0.035	**0.072**	1.000		
(11) OPCF	0.016	**0.344**	-0.002	**0.465**	**-0.304**	**0.157**	**0.103**	**-0.041**	**0.067**	**0.044**	1.000	
(12) Conc	**0.097**	-0.028	**0.116**	0.007	-0.027	**-0.147**	**-0.153**	-0.039	0.013	-0.016	-0.006	1.000

Notes. Bolded coefficients are statistically significant at 5% level.
Source: Prepared by the authors.

AUTHORS' CONTRIBUTIONS

Contributions	Yuri Gomes Paiva Azevedo	Júlia Peres Tortoli	Lívia Maria Lopes Stanzani	Luiz Eduardo Gaio
1. Idealization and conception of the research subject and theme	✓	✓	✓	✓
2. Definition of the research problem	✓	✓	✓	✓
3. Development of Theoretical Platform	✓	✓	✓	
4. Design of the research methodological approach	✓	✓	✓	✓
5. Data collection	✓	✓		✓
6. Analyses and interpretations of collected data	✓	✓	✓	
7. Research conclusions	✓	✓	✓	
8. Critical review of the manuscript	✓	✓	✓	✓
9. Final writing of the manuscript, according to the rules established by the Journal.	✓	✓	✓	
10. Research supervision				✓