BASE – Revista de Administração e Contabilidade da Unisinos
20(3): julho/setembro, 2023
Unisinos - doi: 10.4013/base.2023.203.05
ISSN: 1984-8196

Does Debt Influence Earnings Management in Going Private Transactions in Brazil?

O Endividamento Influencia o Gerenciamento de Resultados nas Transações para o Fechamento de Capital no Brasil?

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Abstract: This paper aimed to analyze the influence of debt on earnings management of non-financial companies that were listed in the Brazilian capital market and went private by stock repurchase between 2002 and 2020. The companies that went private were matched by size and sector of activity with those that remained in the stock exchange market in the year prior to the offer announcement. Earnings management was estimated using discretionary accruals and debt was measured by the Debt-to-Equity ratio and Total Debt ratio. The results suggest that companies that went private by repurchasing shares tend present negative earnings management. Also, we found a negative and significant relationship between earnings management and Debt-to-Equity ratio, and company size. We understood that the intensification of the monitoring of the managers' actions, mainly due to the publicity of the process implies the restriction of discretionary practices.
Keywords: Earnings Management; Going Private Transactions; Debt.

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Resumo: Esta pesquisa objetivou analisar a influência da dívida no gerenciamento de resultados de todas as empresas não financeiras que estavam listadas no mercado de capitais brasileiro e fecharam o capital através da oferta pública de compra de ações entre os anos de 2002 e 2020. As empresas que saíram do mercado de capitais foram pareadas por tamanho e setor de atuação com aquelas que permaneceram com as ações em bolsa no ano anterior ao anúncio oferta. O gerenciamento de resultados foi estimado utilizando os *accruals* discricionários e a dívida foi mensurada através da razão entre o endividamento total e o patrimônio líquido, e através da razão entre os passivos e os ativos. As estimações feitas sugerem que as empresas que fecharam capital por recompra de ações tendem a piorar seus resultados. Também foi verificada uma relação negativa e significativa entre o gerenciamento de resultados e estrutura de capital e tamanho da empresa. Entende-se que a intensificação do monitoramento das ações dos gestores, principalmente devido à publicidade do processo implica na restrição de práticas discricionárias.
Palavras-chave – Gerenciamento de Resultados; Fechamento de Capital; Endividamento.

Introduction

The decision to leave the capital market refers to the revision of the capital structure in which public traded companies return to private ownership by acquiring all the shares remaining in trading. Therefore, the process is inverse to the going public process. In Brazil, according to Instruction No. 361 of *Comissão de Valores Mobiliários* (CVM), to cancel the publicly owned company registration, companies must have the authorization to make a public offer.

The going private transaction is considered a specific reason for companies to manage their earnings according to the literature about this matter (Souza, Costa, Almeida & Bortolon, 2013). Previous studies using U.S. data show that in the years before the company's capital market exit, earnings management presents distinct results: DeAngelo (1986) found no evidence of earnings management before Management Buyouts (MBO), which occurs when the company's managers are involved in the stock repurchase process, while Perry and Williams (1994) report significant evidence of the existence of negative earnings management to worsen the profits. Mao and Renneboog (2015) found that companies that left UK's capital market via MBO tend to manipulate earnings downward. In this case, as lower earnings harm the share price, the managers that remain in the company after the going private process would be motivated to cheaper the repurchase process and thus, spend less amount of money in the transaction.

Another possible motivation highlighted in the literature about earnings management before going private transaction is the need to raise funds from third parties to finance the stocks repurchase through debt. However, the theory points out two distinct consequences of the debt on managerial incentives to manipulate earnings. The first perspective given by Jensen (1986) suggests that the debt increase reduces the managers' opportunistic practices. In this scenario, creditors without access to the managers' accounting actions intensify the financial statements monitoring (Iturriaga & Hoffmann, 2005). The second perspective as reported by Watts and Zimmerman (1990), suggests that, according to the debt/equity hypothesis, highly leveraged companies, in the imminent possibility of breaking restrictive clauses in debt contracts, tend to adopt discretionary procedures to increase current profits and/or revenues. Costa, Matte and Monte-Mor (2018) reinforce that when companies have high levels of debt, the gains from reducing debt costs would be mitigated by the risks of not complying with covenant clauses, and thus, incentives arise to increase discretionary accruals because managers prefer to decrease the quality of profits than incur losses for contractual violations.

Despite the existence of incentives to manage earnings downward to reduce the purchase price in MBO transactions, these incentives can negatively impact the ability to obtain external financing. Thus, considering that usually, stock repurchase needs external financing at a favorable cost, there is a conflicting financial incentive to manage earnings upward. Therefore, it is relevant to understand the relationship between the need for external financing and the incentives for managing earnings in the going private scenario (Fischer & Louis, 2008; Matos, 2000). Matos (2000) explains that the stock repurchase transaction is usually made through a Leveraged Buyout (LBO), which occurs when the stock acquirers, regardless of whether they are from the company itself, are highly financed by debt. Thus, if the resources for the stock repurchase are obtained through external sources, that is, if the need for resources has a high leverage impact on the company, the presentation of low earnings can impact the conditions of the loans that the company borrows. With this, managers tend to increase their earnings, or at least manage them negatively to a lesser extent, so that they can obtain more favorable loan terms (Fischer & Louis, 2008).

Therefore, we assumed that before going private transactions, managers can manipulate the earnings through different accounting decisions which may vary depending on the company's debt level. In this context, this study intends to answer the following research question: does debt influence earnings management in companies that are going private in Brazil? Hence, the objective is to analyze the influence

of debt on earnings management of all Brazilian non-financial companies that were listed in the Brazilian capital market and went private through stock repurchases that occurred between 2002 and 2020.

Analyzing the debt influence on earnings management of going private companies contributes to the Brazilian literature by showing the distinct incentives on earnings management and the need for external financing can be a mitigating or encouraging factor. Moreover, this study is relevant because it aims to understand the relationship between debt and earnings management in going private transactions since the publication of CVM Instruction No. 361 of 2002, which made stock repurchase mandatory for closing capital.

From the results, it was found negative and significant evidence about the relationship between downward earnings management specific from companies that went private through stock repurchase the Debt-to-Equity ratio. Also, the results showed that the company's size is inversely related to abnormal levels of discretionary accruals. In consequence, one can infer that monitoring is a possible factor for mitigating the intentional accounting manipulation reports in case of going private transactions, mainly due to mandatory publicity requests by CVM.

Earnings Management in Going Private transactions context

Companies can return to their initial private status due to the high costs of maintaining public, and corporate restructuring, and because they might not need to raise funds anymore (Souza *et al*., 2013). In Brazil, CVM, through instruction no. 361 published on March 5, 2002, determines that for a company stop being publicly held, all its outstanding shares must be acquired through a public offering, and is therefore mandatory, except in case of explicit dismissal.

Bortolon and Silva Junior (2015), conducted a study addressed to identify the company's determining factors related to Brazilian capital market withdrawal. They found that the chances of the company's return to private ownership are impacted by the higher concentration of ownership and control, the lower the free float, the lower liquidity of the company's shares, the greater availability of cash, and the larger size of the organization. The authors concluded that a high concentration of ownership and control is the variable that most influences a company's decision related to closing their capital and from this factor, the others are gradually implemented until the process is completed.

With a similar objective, Saito and Padilha (2015) noticed that companies that left the capital market presented a higher controllers shareholding concentration, lower profitability (ROA), and lower level of dividend payments with a higher free cash flow, and lower level of financial leverage. The authors concluded that the controlling group power is an important factor for companies to exit the stock market, in agreement with Bortolon and Silva Junior (2015) studies.

The agency conflict raised from the separation of ownership and control may trigger reasons for managers to manipulate the earnings to maximize their welfare. In going private transactions, managers tend to act in such a way as to depreciate the stock price to spend less on the repurchase transaction, rather than offering a fair price to shareholders. This situation was evidenced by Perry and Williams (1994) by the analysis of American companies and by Mao and Renneboog (2015) using data from UK companies, who found strong evidence that companies that left the capital market through MBO tend to manipulate earnings downward.

Earnings management can be defined as the purposeful change in financial reports and the structuring of accounting transactions based on the managers' discretion, to deceive stakeholders about the accounting information disclosed and, consequently, impacting the perception of the company's economic performance and influencing contracts that depend on accounting numbers (Healy & Wahlen, 1999). Since the motivations for manipulation are diverse, studies indicate that before specific moments, companies are inclined to perform accounting manipulation as a way for managers to achieve personal goals, and the going private transaction is understood as a specific moment for the literature in question (Souza *et al.*, 2013). To complete the going private process by acquiring the shares in circulation, financing need is quite common (Matos, 2001). If the financing is obtained from external sources, managers may be encouraged to manipulate earnings positively to attract lenders and minimize the fees charged for loans. Fischer and Louis's (2008) study indicates that when the company needs high external resources to finance the capital market withdrawal, that is when the repurchase operation is highly leveraged, managers usually increase their earnings, or are encouraged to manage the earnings to a lesser extent so that they obtain more favorable terms of loans.

Thus, according to previous studies, in the context of capital market withdrawal, managers can respond to different incentives to manage earnings. The motivation to worsen the earnings to decrease the cost of repurchased shares conflicts with the motivation to improve the profits to reduce the cost of debt.

In the Brazilian capital market, the scarce studies on earnings management before going private transactions are not conclusive and present distinct evidence of different earnings management directions. Santos and Carvalho (2010) found that Brazilian companies manipulated their earnings approximately two years before the capital market exit. In addition, the authors found evidence of different directions of manipulation: companies that went private through stock repurchase, as well as those that were taken over by their controlled companies, would tend to manipulate their earnings down, while the other acquisitions would be characterized by having their earnings tampered upwards. Souza *et al.* (2013) presented evidence that going private transaction has a positive association with earnings management, however, the results do not show differences when analyzing the reasons for exiting (voluntary or incorporation).

Debt influence on earnings management

Investor Since companies' debt levels can trigger different incentives for accounting numbers manipulation (Costa *et. al*, 2018), the literature segregates the relationship between debt and earnings management into two distinct streams (Alsharairi & Salama, 2012).

One stream suggests that highly debt-financed companies present a positive relationship with upward earnings management because companies nearly to present debt covenants violation or risk of default, will have incentives to adopt discretionary procedures to increase current profits and/or revenues. In this circumstance, managers tend to choose to report lower quality accounting numbers (Alsharairi & Salama, 2012). According to the debt/equity hypothesis, companies with higher debt-to-equity ratios are closer to the constraints in debt covenants, so they are more likely to use discretionary practices to positively influence their income and thus, avoid the restrictions. Hence, earnings management allows the companies to relax the restrictions imposed by creditors and reduce insolvency costs (Watts & Zirmmerman, 1990).

Several studies corroborate the positive relationship between debt and upward earnings management in the circumstances described. Ghosh and Moon (2010) found that companies that rely mostly on debt financing tend to manipulate their earnings more and bear higher borrowing costs to avoid the cost of violating debt covenants. However, the relationship found between debt and the quality of the profit is curvy: there is a positive relationship at low levels of debt and negative at high levels.

Costa *et al.* (2018) applied Ghosh and Moon's (2010) study using Brazilian capital market data and obtained evidence that companies with high levels of debt tend to report profits with a higher discretionary component. The authors verified that the level of debt has a positive influence on earnings management. Also, Lazzem and Jilani (2018) found that for a set of French companies, leverage has a positive effect on earnings manipulation.

The opposite stream suggests a reduction in opportunistic practices when there is an increase in debt financing (Jensen, 1986). This strand states that high debt financing implies restricted managerial opportunistic and discretionary practices (Alsharairi & Salama, 2012). In this scenario, creditors without access to the managerial performance and actions, intensify the monitoring through the analysis of the accounting reports issued, and thus, the higher the debt financing, the greater the monitoring applied by creditors (Iturriaga & Hoffmann, 2005).

For this stream, the level of debt financing can negatively influence the earnings management, because creditors will require greater informational power of accounting reports, especially on profits, to verify the company's solvency (Costa *et al.*, 2018). Consequently, in highly debt-financed companies, there are lower incentives for earnings management and greater interest in monitoring the debt payment capacity from creditors. Therefore, high debt financing can trigger various mechanisms to minimize the company's discretionary and opportunistic practices (Iturriaga & Hoffmann, 2005).

From this perspective, Alsharairi and Salama (2012) found significant and robust evidence of a negative relationship between earnings management and debt financing. The authors ratify that the results found were consistent with Jensen's (1986) aspect, corroborating the idea that creditors, in this scenario, play fundamental roles in monitoring the company, which would increase the quality of accounting reports and restrict the use of discretionary criteria.

Afza and Rashid (2014) used a sample of Pakistani companies and found that in terms of short-term financing the earnings management is higher, as there is less monitoring by creditors. However, considering total and long-term debt, the authors found a lower incidence of discretionary practices, because creditors would impose greater monitoring practices, such as more restrictive debt covenants, to reduce the default likelihood. Vakilifard and Mortazavi (2016) research corroborated this stream by investigating data from companies listed on the Tehran Stock Exchange. The results indicated that

incentives for leveraged companies to manage earnings are low because, in addition to the pressures imposed by debt covenants, there are rigorous audits to limit opportunistic attitudes from managers.

Both streams are based on empirical theories and results, however, none presents a definitive answer (Alsharairi & Salama, 2012). Since going private circumstances can lead firms to manage their earnings, the existing literature suggests that managers tend to manage the company's earnings downward if they are participating in the repurchase process and will continue in the company after it turns private. They intend to buy the stocks cheaper by reducing their price via lower earnings However, the incentives presented for downward earnings manipulation can impact negatively the ability to obtain external financing (Fischer & Louis, 2008).

Acquainting the going private decision as an event in which companies may have specific motivations for earnings manipulation, the implications of debt financing related to the managers' discretionary power can be even more evident. Thus, earnings management and debt financing may present significant and opposite relationships.

Additionally, considering that on average, as mentioned by Costa et al. (2018) Brazilian companies have higher levels of debt compared to U.S. companies, the effects of debt may be even more relevant. Hence, based on the argument of Watts and Zirmmerman (1990), prior to exiting the capital market, firms may present high levels of debt that engender an increase in earnings manipulation to not compromise the restrictive clauses of contracts, and thus Hypothesis 1 will be tested:

H1: The level of earnings management prior to the going private transaction through stock repurchase is positively related to debt financing.

Methodology

Sample selection and data collection

This study comprises all non-financial companies that were listed in the Brazilian capital market and left it through stock repurchasing between 2002 and 2020. The beginning of the analyses in 2002 is due to the advent of CVM Instruction No. 361. This Instruction made mandatory the stock repurchase, as

well as the obligation of prior communication to the market through a relevant fact announcement, and the need to hire a company to evaluate the shares.

According to data from the Brazilian stock exchange, in the period comprised by this research 434 companies that were listed left the capital market. 59 companies were suppressed from the sample due to interrelation to financial activities such as banks, insurance companies, and securitization companies. These companies are subject to regulations and present specific financial statements.

Also, companies that left the Brazilian capital market due to bankruptcy, liquidation, incorporation, or cancellation by CVM and those that were authorized to cancel the registration without making a public offer for the stock repurchase were excluded from the sample. This information was obtained through the relevant facts disclosed by the companies, news published in the media, analysis of public offering notices available to the public consultation by CVM, and the justification of cancellation disclosed by B3. In conclusion, 135 companies were identified as those that left the capital market through stock repurchase, and the final sample compromised 124 companies, whose financial information was available in Economatica database, as shown in Table 1.

Table 1.
Sample composition

Sample composition	Observations
Companies that left the capital market between January 2002 and December 2020	434
(-) Companies related to financial activities	(-59)
(-) Companies that did not cancel registration by stock repurchase	(-240)
Total companies that made the public offer for stock repurchase	135
Total companies with financial data available at Economatica	124

The repurchase offer period starts when the offer is disclosed to the market and ends on the date of the auction for the repurchase occurs or on the date of its revocation. The public offer publication is considered the event in which the earnings management before the stock offer was analyzed. Once the event was defined, the financial statements were obtained for the year ended 12/31 in the year immediately preceding the public offer publication. As mentioned by Perry and Williams (1994), the data confirm that the year before the year in which the offer is made public is the year most likely to reflect systematic earnings manipulation.

The accounting information present in the companies' financial statements was used and the amounts were adjusted by inflation. In addition, given the discrepancy of companies listed on the stock exchange in terms of the size and trading volume, the outliers were treated through the winsorization in which the extreme values of 1% and 99% were eliminated.

Earnings management prior to the public offer

The earnings management was estimated using discretionary accruals as a proxy according to the model proposed by Kothari, Leone and Wasley (2005), known as a performance matched. This model is considered an improvement of the Jones model (1991), a precursor of the models that associate the accruals of working capital with changes in sales and depreciation. To Jones's model (1991), Kothari, Leone and Wasley (2005) added a contemporary ROA as a performance variable due to empirical evidence found in previous studies that earnings management is related to the company's current performance. The authors demonstrate that the use of contemporary ROA results in lower errors specification.

In the Kothari, Leone and Wasley (2005) model, discretionary accruals are calculated by the difference between the total accruals, as shown in Equation 1, and the estimated accruals as shown in Equation 2:

$$\frac{TA_{i,t}}{A_{\,i,t-1}} = \frac{(\triangle \mathrm{CA_{i,t}} - \triangle \mathrm{CASH_{i,t}}) - (\triangle \mathrm{CL_{i,t}} - \triangle \mathrm{STLO}) - (\mathrm{DEP_{i,t}} + \mathrm{AMORT_{i,t}})}{A_{\,i,t-1}} \qquad (1)$$

In which:

$TA_{i,t}$: Total accruals of company *i* in year t;

$A_{\,i,t-1}$: Total asset of company *i* in year *t-1*;

$\triangle \mathrm{CA}_{i,t}$: Current assets of company *i* in year t minus the year *t-1*;

$\triangle \mathrm{CASH}_{i,t}$: Cash and cash equivalents of company *i* in year t minus the year *t-1*;

$\triangle \mathrm{CL}_{i,t}$:Current liabilities of company *i* in year t minus year *t-1;*

$\triangle$ STLO: Short-term loans of the company *i* in the year *t* minus the year *t-1*;

$\mathrm{DEP}_{i,t}$: Depreciation expenses of company *i* in year *t*;

$\mathrm{AMORT}_{i,t}$: Amortization expenses of company *i in* year *t.*

$$\frac{TA_{i,t}}{A_{\ i,t-1}} = \beta_0 + \beta_1 \left[\frac{1}{A_{\ i,t-1}}\right] + \beta_2 \left[\frac{\Delta S_{i,t} - \Delta AR_{\ i,t}}{A_{\ i,t-1}}\right] + \beta_3 \left[\frac{PPE_{i,t}}{A_{i,t-1}}\right] + \beta_4 \left[ROA_{i,t}\right] + \varepsilon_{i,t} \quad (2)$$

In which:

$TA_{i,t}$: Total Accruals of company *i* in year *t;*

$A_{\ i,t-1}$: Total asset of company *i* in year *t-1;*

$\Delta S_{\ i,t}$: Net Revenue of the company *i* in the year *t* minus the net revenue of the year *t-1*;

ΔAR: Accounts receivables from the company *i* in the year *t* minus accounts receivable from year t -*1*;

PPE: Porperty, Plant and equipment of company *i* in year *t;*

$ROA_{i,t}$: Return on assets, calculated by net income divided by the total assets of company *i* in year t;

$\beta_0, \beta_1, \beta_2, \beta_3 \; e \; \beta_4$: Coefficients estimated by equation (1) regression;

$\varepsilon_{i,t}$: Error.

To estimate the going private event exclusive effects on earnings management, the companies that left the capital market were paired with companies that remained publicly traded in the year before the publication of the public offering, by industry sector and the total assets, as done by Fischer and Louis (2008), Mao and Renneboog (2015) and Perry and Williams (1994). The industry pairing was done according to the North America Industrial Classification – NAICS, which corresponds to an international sector classification. In NAICS, companies are grouped into three levels: the first level is composed of 20 categories, the second level of 96, and the third level of 313. Thus, the companies were first matched by the most specific level, 3, and in case of the inexistence of a matching pair, the pairing began to be done by the second or first level.

To measure the earnings management by discretionary accruals exclusive from the going private event, as well as in the methodology adopted by Fischer and Louis (2008), Equation 2 was estimated for the companies that left the capital market and their respective peers. The residuals of the equations correspond to the abnormal levels of discretionary accruals and, thus, the specific abnormal effects of earnings management by accruals of the companies that went private, were given by the difference between the residues of Equation 2 calculated for the companies that went private and the residues of

Equation 2 for the peer companies that remained publicly traded. The result of the difference is the research dependent variable "Accruals_Off".

To test the research hypothesis, debt was analyzed from two perspectives: Debt-to-Equity ratio and Total Debt Ratio. The variable DE – refers to the company's capital structure, given by the relationship of short and long-term debt with Equity, and it was used by Alsharairi and Salama (2012). The variable TDR represents the ratio between the total liabilities and the total assets, as done by Souza et al. (2013):

$$DE_i = \frac{Short\ and\ long\ term\ debt_i}{Equity_i} \quad (3)$$

$$TDR_i = \frac{Total\ liabilities}{Total\ assets} \quad (4)$$

Additionally, control variables were defined considering previous empirical studies, as shown in Table 2:

Table 2.
Control Variables

Control Variable	Name	Description	Previous studies	Expected Relationship
Company Size	SIZE	Log (Assets)	Costa *et al*. (2018), Ghosh and Moon (2010), Santos and Carvalho (2010), Souza *et al*. (2013).	Negative
Asset Profitability	ROA	Net Income / Total Assets	Costa *et al*. (2018), Santos and Carvalho (2010), Souza *et al*. (2013).	Negative
Shareholder concentration	SHAR	Percentage of shares belonging to the company's three largest shareholders.	Santos e Carvalho (2010), Souza *et al*. (2013).	Negative
IFRS Integral Adoption	IFRS	Value 1 when IFRS are fully used and 0, otherwise.	-	Positive/Negative
Crisis Period	CRISIS	Value 1 for economic crisis period and 0, otherwise.	-	Positive/Negative

The variable CRISE was created according to the data released by the Brazilian Institute of Geography and Statistics (IBGE) and it is 1 when a technical recession is identified, - as a decrease in

Gross Domestic Product (GDP) for two consecutive quarters -in the year immediately preceding the announcement of the purchase offer. . Thus, the years 2001, 2003, 2009, 2015 and 2016 were considered crisis years. It is noteworthy that the research was not impacted by the effects of the pandemic of COVID-19, because although the sample contains companies that closed capital in 2020, the financial statements analyzed refer to the year prior to 2020, 2019.

To verify whether, according to the research hypothesis, the level of earnings management of companies that went private by share repurchase is positively related to debt financing, measured by Debt-to-Equity ratio (DE) and Total Debt Ratio (TDR) econometric models corresponding to equations 5 and 6 were used:

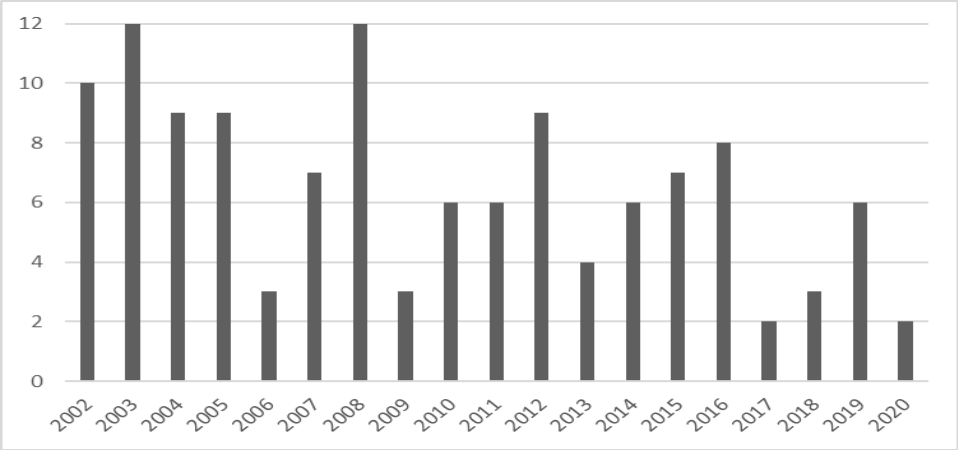
$$\text{Accruals\_Off}_i = \beta_0 + \beta_1 DE_i + \beta_2 SIZE_i + \beta_3 ROA_i + \beta_4 SHAR_i + \beta_5 IFRS + \beta_6 CRISIS + \varepsilon_i \quad (5)$$

$$\text{Accruals\_Off}_i = \beta_0 + \beta_1 TDR_i + \beta_2 SIZE_i + \beta_3 ROA_i + \beta_4 SHAR_i + \beta_5 IFRS + \beta_6 CRISIS + \varepsilon_i \quad (6)$$

The adequacy and specification of the proposed models regarding the assumptions of the Classic Linear Regression Model were verified by the test of the existence of multilinearity and heteroscedasticity and the final model was estimated by White robust standard errors.

Analysis of results

Between 2002 and 2020, 124 non-financial companies left the Brazilian capital market through stock repurchase and had their financial data available in the Economatica database. According to Graph 1, the most frequently years for closing capital were 2003 and 2008, with 12 events each, and the years 2017 and 2020 were the years that presented the fewest repurchase offers, 2 each:



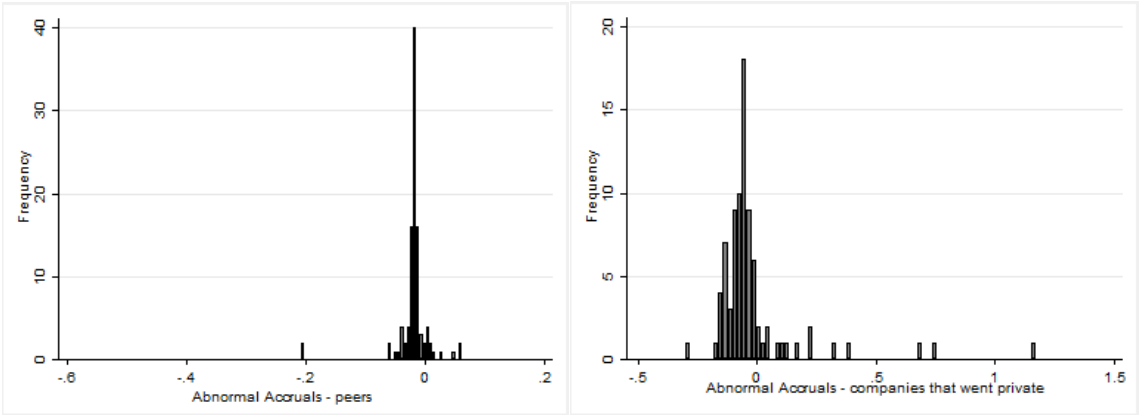
Graphic 1. Stock repurchase offers for closing capital in Brazil

As shown in Table 3, the companies that went private through stock repurchase offer presented higher assets on average than their comparable ones that remained publicly traded. It may suggest that these companies are less dependent on financing through the stock market than the others, which is a possible motivation for their capital closure. Also, in average terms, one can observe that companies that left the Brazilian capital market had higher debt rates.

Furthermore, it is possible to verify by the mean values and histograms, that both groups of companies present downward earnings management. However, in average terms, abnormal discretionary accruals levels for companies that went private are lower than in companies that have remained publicly traded. This result suggests that, as posed by Fischer and Louis (2008), companies that leave the capital market tend to mitigate the negative earnings manipulation due to debt levels.

Table 3.
Comparative values between companies that went private and their peers

	Companies that went private	Peer companies
Number of observations	124	124
Average asset	3.284.877	2.423.882
Average EC	2,549	1,258
Average END	1,74	1,725
Abnormal levels of accruals	-0,009	-0,019



Graphic 2. Abnormal levels of discretionary accruals - Histogram

To test the hypothesis that the level of earnings management in companies that went private through stock repurchase offer is positively related to debt financing, we used the model presented in Equations 5 and 6. After the correlation tests between the variables and adequacy of the multiple linear regression assumptions, it was necessary to correct for heteroscedasticity. In this case, the estimation was done with White robust standard errors and it was necessary to remove the ROA variable due to the high correlation with the other variables of the model. Thus, the final models are presented in Table 4:

Table 4.
Regressions results

Dependent variable	Accruals_Off[1]	Accruals_Off
Independent variables	Coef. (p-value)	Coef. (p-value)
DE	-0,0014135 (0,090)*	
TDR		-0,0195709 -0,585
SIZE	-0,0544272 (0,006)**	-0,0798542 (0,008)**
SHAR	0,0007253 -0,417	0,0011803 -0,292
IFRS	-0,0022897 -0,937	0,0917364 -0,171
CRISIS	-0,0120451 -0,795	-0,0338132 -0,355
_cons	0,7046833 (0,008)**	1,00687 -0,014
R^2	0,444	0,387
Average VIF	1,19	1,27
Number of Observations	43	59

Note: Significance Levels: * p<0.10; ** p<0.05; and *** p<0.01.

The results presented a negative and significant relationship at a 10% level between the companies that went private with specific earnings management, estimated by the abnormal levels of discretionary accruals and the firm's debt-to-equity ratio. The same result was found by Alsharairi and Salama (2012) and to this negative relationship, Jensen (1986) attributes the monitoring that has repercussions on the mitigation of opportunistic accounting practices. In the context of going private transactions, this monitoring is intensified by the fact that the legislation requires the publicity of the stock repurchase in addition to the existence of a valuation document.

From the total debt ratio perspective, there was no statistically significant relationship with earnings management. The results obtained reject the study hypothesis, and a possible explanation is due to the capital market's existing particularities verified in Brazilian companies. Most of the stock repurchase offer occurred by the parent company or through a nonrelated company acquisition, unlike the international cases that prevail MBO. Thus, the going private companies' debt levels, despite presenting higher averages compared to companies that remained publicly traded, would not impact the process of stock repurchase, and, therefore, the debt issue would not be a motivation to manipulate the results.

The results indicate that the company's size, measured by assets logarithm, is inversely related to the going private companies' abnormal accruals. This result can be related to the monitoring intensification by stakeholders. After all, as pointed out by Jensen (1986) the larger the company, the greater its visibility and monitoring of reports by stakeholders.

Finally, the results indicate that the shareholding concentration does not impact the companies that left the Brazilian capital market earnings management levels. The adoption of accounting practices aligned with IFRS and periods of economic crisis also do not present significant relationships with earnings management. Since these results indicate the lack of a statistically significant relationship between the variables and earnings management, it is understood that managers may have other motivations influenced by the specificity of the Brazilian capital market, characterized by their concentration and the existence of many family companies.

Conclusion

The research aimed to empirically verify whether the level of earnings management before the closing of capital is influenced by the debt of companies that went private through stock repurchase. The debt was measured by the Debt-to-Equity ratio and Total Debt ratio. To study the earnings management exclusively due to the stock repurchase, it was calculated by the difference between the residuals from the abnormal accruals regression of the companies that went private and their peer companies, per year and NAICS.

As a result, it was verified the existence of a negative and statistically significant relationship between earnings management and debt-to-equity ratio, and the lack of a significant relationship between earnings management and total debt ratio. Although there was a weak relationship, the results influenced the non-acceptance of the hypothesis. This can be attributed to the intensification of monitoring by stakeholders as discussed by Jensen (1986) since the process of stock repurchase must be public, and thus, the results corroborate the evidence verified by Alsharairi and Salama (2012). Moreover, the companies' size presented a negative and statistically significant relationship with earnings management, as expected. This relationship can also be attributed to monitoring since larger companies are more accompanied by analysts and media.

There was no statistically significant evidence of the relationship between the total debt ratio and earnings management, and this can be justified by the specificity of the Brazilian capital market, whose stock repurchase offers are made largely by parent companies, and thus the company that leaves the market capital do not have to capitalize resources for the operation.

It is noteworthy that the international studies usually use a sample company that went private through MBO, in which the firm's management is involved in the stock repurchase process (DeAngelo, 1986; Fischer & Louis, 2008; Mao & Renneboog, 2015; Perry & Williams, 1994). However, in the Brazilian capital market, the volume of companies that went private by MBO is quite low (28 companies in the sample of 124 used in the study). As most of the stock repurchase offers in the Brazilian capital market are made by parent companies or by a nonrelated firm, for future studies, it is relevant to analyze the relationship between earnings management and debt in companies that acquired the stocks.

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Submetido:05/01/2021

Aceito:02/02/2023