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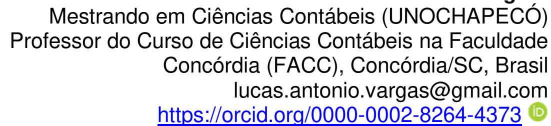
Influence of earnings management and corporate governance on the cost of third-party capital

Influência do gerenciamento de resultados e da governança corporativa no custo de capital de terceiros

Influencia de la gestión de ganancias y el gobierno corporativo en el costo de capital de terceros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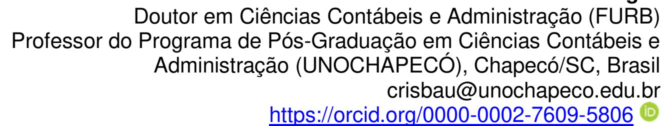
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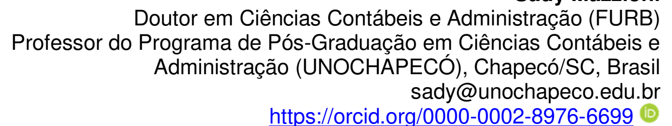
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Abstract
The objective of the study is to verify the moderating effect of earnings management on the relationship between corporate governance and the cost of third-party capital of publicly-held companies listed in [B]³, in the period from 2012 to 2017. Initially descriptive analyses were made and later the panel data technique was used. The results reveal that companies with a higher level of corporate governance are able to raise capital from third parties at a lower cost, however, these same companies when associated with the use of earnings management practices make the cost of capital from third parties higher. In general, the evidences from this research contribute to fill an important gap in the national literature, by verifying that companies that use earnings management practices annul the likely favorable effect of corporate governance in reducing the cost of third-party capital.
Keywords: Agency costs; Investments; Quality of the information; Stakeholders

Resumo
O objetivo do estudo é verificar o efeito moderador do gerenciamento de resultados na relação entre governança corporativa e o custo de capital de terceiros das companhias abertas listadas na [B]³, no período de 2012 a 2017. Inicialmente foram feitas análises descritivas e posteriormente utilizou-se a técnica de dados em painel. Os resultados revelam que as empresas com maior nível de governança corporativa conseguem captar capital de terceiros a um custo menor, contudo, estas mesmas empresas quando associadas ao uso de práticas de gerenciamento de resultados tornam o custo de capital de terceiros mais elevado. De modo geral, as evidências desta pesquisa contribuem para o preenchimento de uma importante lacuna existente na literatura nacional, ao verificar que as empresas que utilizam práticas de gerenciamento de resultados anulam o provável efeito favorável da governança corporativa na redução do custo de capital de terceiros.
Palavras-chave: Custos de Agência; Investimentos; Qualidade da informação; *Stakeholders*

Resumen
El objetivo del estudio es verificar el efecto moderador de la gestión de ganancias en la relación entre el gobierno corporativo y el costo de capital de terceros de las empresas públicas que figuran en [B]³, en el

período de 2012 a 2017. Inicialmente, se realizaron análisis descriptivos y luego se utilizaron Se utiliza la técnica de datos del panel. Los resultados revelan que las empresas con un mayor nivel de gobierno corporativo pueden recaudar capital de terceros a un costo menor, sin embargo, estas mismas empresas cuando se asocian con el uso de prácticas de gestión de ganancias hacen que el costo de capital para terceros sea mayor. En general, la evidencia de esta investigación contribuye a llenar un vacío importante en la literatura nacional, cuando descubre que las empresas que utilizan prácticas de gestión de ganancias cancelan el probable efecto favorable del gobierno corporativo en la reducción del costo de capital para terceros.
Palabras clave: Gastos de agencia; Inversiones; Calidad de la información; Partes interesadas

1 Introduction

Accounting becomes responsible for evidencing, to its various users, transparent and quality information that generates credibility for decision making, contributing to increase the understanding of the effective financial position of companies (Beatty & Liao, 2014). Quality accounting information can contribute to the reduction of information asymmetry among agents (managers), major (shareholders) and other stakeholders (Kim, Miller, Wan and Wang, 2016).

The relationships between agents and major are characterized by contracts established by both parties. Given the difficulty in establishing rules for a contractual relationship without asymmetry of information and divergence of interests, the discretionary behavior of the manager emerges (Nardi, Silva, Nakao and Valle, 2009).

This behavior can occur at the time of the definition of accounting policies, when the manager interferes in the disclosure of accounting information, aiming to show a result that is in accordance with his own interests. The practice of modifying the earnings is known as earnings management (EM), which allows the managers to alter the earnings in order to obtain their own benefits that sometimes diverge from the major's interests (Martins & Lopes, 2005; Nardi et al., 2009).

However, the informational asymmetry caused by the opportunistic behavior of the manager in managing earnings can be mitigated with the implementation of corporate governance practices, which will increase informational quality, leading to a reduction in the cost of third-party capital (Sengupta, 1998).

The opportunistic behavior of the manager in managing earnings may indicate to the market the need to increase the risks in the release of credit, given the conflict of interest arising from the agent-major relationship. The use of good corporate governance practices reduces agency problems by making the hiring of third-party capital at lower costs opportune (Ghouma, Ben-Nasr & Yan, 2018).

The EM contributes to the discussion of the Agency Theory, as the interests of the agents become confused with the interests of the major, while the agents may act in an opportunistic manner, giving rise to agency conflicts (Jensen & Meckling, 1976; Nardi & Nakao, 2009). As a result, EM accentuates the informational asymmetry and decreases the quality of companies' financial reports. In this sense, the country's legal financial system is affected, since creditors are unable to monitor the company's accounting decisions and become more sensitive to non-transparent practices, which increases the return required by the capital invested. In countries with strong institutional environments, EM activities are less tolerated by the financial market (Francis, Khurana & Pereira, 2005; Nardi et al., 2009; Miko & Kamardin, 2015; An, Li & Yu, 2016; Kim, Lee & Yoo, 2018).

EM practice can provide benefits to companies by increasing profitability and revenue bearing indicators in the short term, but sacrificing performance in the long term (Martinez, 2001). As Graham, Harvey and Rajgopal (2004) discuss, the *Chief Financial Officers (*CFO) manage the information disclosed in financial reports to obtain satisfactory earnings in the short term, with the aim of: building credibility in the capital market; increasing stock prices; and improving the external reputation of the management team. Failure to achieve these goals brings uncertainty about the company's prospects in the market and increases hidden problems, which is not well seen by credit institutions and contributes to the increase in the cost of capital hire.

Thus, literature presents several motivations for companies' earnings management practices, such as Jensen and Meckling (1976), Teoh, Welch and Wong (1998), Rangan (1998), Healy and Wahlen (1999), Fields, Lys and Vincent (2001), Kim and Sohn (2013), Martinez (2013), Ge and Kim (2014). Companies that present financial difficulties are prone to bankruptcy, which impels managers to engage in activities that reduce the possibility of being fired, managing earnings to mask the reality experienced by the company, in favor of themselves or the major.

Financial institutions perceive an increase in credit risk when the quality of accounting information has been impaired by the EM practice. To improve the credit associated risk *x* return ratio, they increase interest rates to compensate for the risk (Nardi & Nakao, 2009). Examples of international research that verified the impact of earnings management practice on the cost of third-party capital include Francis et al. (2005), Graham et al. (2004), Chun and Cha (2012), Ge and Kim (2014), An et al. (2016), Anagnostopoulou and Tsekrekos (2017), Kim et al. (2018). In general, studies have identified that earnings management influences the increase in the cost of third-party capital.

In Brazil, studies by Nardi et al. (2009), Barros, Menezes, Colauto and Teodoro (2014), Moura, Macêdo, Mazzioni and Kruger (2016) have related the practice of earnings management with the cost of third-party capital. The results show a positive association between earnings management and the cost of third-party capital in publicly-held companies listed in *Brasil, Bolsa, Balcão* - [B]³, i.e., companies that adhere to EM practices have increased interest rates applied to financial credit.

In this discussion, corporate governance, which contributes to reducing agency costs and to minimizing the conflict between agents, emerges (Jensen & Meckling, 1976). The most robust practices of corporate governance (CG) contribute to better-quality accounting information and give the credit institutions more credibility with the organization when offering financial resources (Silveira, 2015). As Piccoli, Souza and Silva (2014) point out, publicly-held companies listed at different levels of corporate governance increase the transparency of information for shareholders, however, this does not prevent the opportunistic behavior of the manager.

CG can help reduce the cost of third-party capital with better-quality accounting information. Nonetheless, EM practices impair the quality of information and increase fundraising costs. In this context, in companies with robust corporate governance mechanisms and that exercise EM practices, conflicting interests to the objectives of corporate monitoring may emerge. EM practice prevails over the effect of corporate governance, inducing an increase in the cost of third-party capital.

Therefore, due to the failure of inhibiting the manager's opportunism in acting for his own interest, there may be missteps in the implementation and monitoring of corporate governance practices. In this scenario, the beneficial effects of CG for companies would be minimized in the view of credit institutions by EM practices. Thus, it is opportune to deepen the understanding on the subject, proposing the following research question: what is the moderating effect of earnings management on the relationship between corporate governance and the cost of third-party capital in the publicly-held companies listed in [B]³? The objective of the study is to verify the moderating effect of earnings management on the relationship between corporate governance and the cost of third-party capital in publicly-held companies listed in [B]³.

The findings revealed that EM presented a positive sign, suggesting to act negatively in the relationship between corporate governance and the cost of third-party capital, showing that companies that adopt corporate governance practices, but continue to use EM, tend to keep the cost of third-party capital higher. This effect may be due to the credit market's perception of the existence of higher risks because of low-quality accounting reports.

The evidence of this research present academic contributions, in filling an important gap in the national literature, by verifying that companies adopting earnings management practices annul the favorable effect of corporate governance in reducing the cost of third-party capital. It contributes by suggesting that regulators, auditors, investors and other *stakeholders* need to segregate the analysis of companies with corporate governance from those that do not exercise this type of corporate monitoring, as well as to have a less generalist view of these companies, bearing in mind that some companies, despite having strong corporate governance mechanisms, continue to adopt widely disseminated practices of EM, nullifying the desired effect of corporate monitoring, in this case, on the cost of third-party capital.

The present study is divided into five sections. Following the introduction, a literature review that discusses the relationships between earnings management, cost of third-party capital, and corporate governance is presented. Later, in the third section, the methodological procedures used to achieve the proposed goal are highlighted. The fourth section highlights the results and their respective analyses. Finally, the fifth section presents the final considerations on the research.

2 Earnings Management and the Cost of Third-Party Capital

Earnings management is seen as an opportunistic positioning of the manager, which interferes in a biased manner through his personal judgment on financial reports (Healy & Wahlen, 1999). Managers can use EM to avoid losses or to meet analysts' profit estimates, thus hoping to avoid reputation damage and negative stock price reactions. However, excessive EM can reduce the usefulness of financial reporting for investors. This is particularly true if opportunistic earnings management is not fully disclosed (Scott, 2015).

Therefore, whether EM is good or bad depends on how it is used. Accountants can reduce the bad extension of EM by bringing it to the surface. This can be achieved by improving the disclosure of low persistence items and reporting the effect of past losses on current earnings. In addition to helping share prices more closely reflect the company's core value, enhanced disclosure helps corporate governance, as compensation committees and the managerial labor market can better reward good manager performance and discipline opportunistic managers (Scott, 2015).

Graham et al. (2004) point out that CFOs use EM so that the disclosure of earnings influences the share price, decreasing price volatility and, consequently, reducing the cost third-party capital. The studies of Chun and Cha (2012) and Ge and Kim (2014) also indicated the existence of a positive relationship between the management of real earnings and the cost of capital.

Using the Jones Modified model of earnings management proposed by Dechow and Dichev (2002), Francis et al. (2005) evaluated the relationship between the quality of *accruals* and the cost of third-party

capital in the period between 1970 and 2001, in companies of 34 countries. The results suggest that the lower the quality of the *accruals* the higher the cost of third-party capital.

Nakamura, Gomes, Antunes, and Marçal (2006) analyzed 407 companies in the period from 2004 to 2006 and identified that earnings management practices increased the cost of third-party capital. Barros et al. (2014) investigated 324 Brazilian companies in the period from 2002 to 2011, and their findings indicated that managers, when making accounting choices to decrease disclosed earnings, tend to obtain lower cost of third-party capital.

In line with what has been presented, Ge and Kim (2014) examined new companies with bonds issuance in the U.S. stock market and their findings showed that credit agencies detect earnings management as an opportunistic measure of managers, leading to downgrades in credit *ratings*. In this way, risk premiums become higher, i.e., the cost for acquiring capital from third parties increases. Thus, companies with higher risk and lower performance have higher cost of third-party capital.

In contrast, Kwak and Park (2015) found a negative relationship between earnings management through operational decisions and the cost of third-party capital in the Korean market. The divergence with previous studies may be related to the Korean market's level of development or to the greater difficulty of observing earnings management through operational decisions.

In view of the exhibitions, and to contribute to the resolution of the proposed research question, the first hypothesis on the earnings management and cost of third-party capital is presented:

H_1: Earnings management practices increase the cost of third-party capital in companies listed in [B]³.

It is assumed that the greater the earnings management the greater the cost of third-party capital. With the modification of earnings to improve the performance of the companies, one perceives the opportunistic attitude of the manager in managing the earnings for his own interest to the detriment of third-party capital's cost. Thus, the market can understand this behavior and increase the costs of debt financing by reclassifying credit risk (Nardi & Nakao, 2009; Francis et al., 2005; Graham et al., 2004; Chun & Cha, 2012; Ge & Kim, 2014; An et al., 2016; Anagnostopoulou & Tsekrekos, 2017; Kim et al., 2018).

2.1 Corporate Governance and the Cost of Third-Party Capital

Berle and Means (1932) began the discussion that separation of control and ownership can amplify conflicts of interest. Later, the conflicts of interest were called agency conflicts, in which the agent may act out of his own interest, exempting himself from the obligation to serve the major's interests (Jensen & Meckling, 1976). In this sense, corporate governance emerges as a mechanism that helps companies minimize these conflicts and, consequently, reduce the agency costs originated by the agent-major conflicts (Berle & Means, 1932; Jensen & Meckling, 1976).

Through a set of mechanisms aimed at reducing information asymmetry and opportunistic practices of earnings management by managers, corporate governance contributes to the protection of capital, increase in information integrity, and protection of the interests of shareholders and other *stakeholders* (Luthan & Satria, 2016; Xue & Hong, 2016).

EM practices contribute to improve the quality of accounting information, increase shareholder protection, and decrease information asymmetry. Stricter rules combined with strong legislation consequently improve the reputation of the company in the credit market. Therefore, the optimization of how the company is managed has an impact on cost reduction of third-party capital (Easley & O'hara, 2004; Lima, 2009).

In this sense, the need arises to verify whether corporate governance practices, in fact, result in the reduction of these conflicts, triggering a cost reduction of third-party capital. National and international studies have investigated this relationship, such as Fonseca, Silveira, and Hiratuka (2016), which investigated 230 non-financial public companies listed in [B]³ in the period between 2010 and 2014. Results show that higher levels of corporate governance reduce the cost of third-party capital.

Tran (2014) analyzed a sample of 426 German companies from 2006 to 2008. The objective of the study was to verify the extent to which corporate governance affects the cost of debt of companies listed on the German stock exchange. Corporate governance was examined in three dimensions: quality of information, ownership structure, and management structure related to the cost of debt. Results indicated that companies with higher levels of financial transparency and bonus offsets faced lower capital costs from third parties.

Andrade, Bernile, and Hood (2014) analyzed how corporate governance practices and the Sarbanes Oxley Act (SOX) impacted the cost of debt and its effect on the reliability of financial reporting in companies in the United States. A total of 252 companies were investigated in the period of 2001 to 2003, and the results indicated that companies with lower quality of information and lower corporate governance practices tend to raise the cost of third-party capital.

Ghouma et al. (2018) analyzed the impact of corporate governance indexes on the cost of debt in 169 Canadian companies in the period between 1986 and 2014. Results suggest that there is a negative relationship between the two, that is, the higher the corporate governance indexes the lower the debt cost. In view of the above, the following research hypothesis emerges:

H_2: Good corporate governance practices reduce the cost of third-party capital in companies listed in [B]³.

It is assumed that the higher the corporate governance indexes of companies, the lower the costs with third-party capital. Corporate governance practices increase the transparency of accounting information disclosed and lead to fundraising at lower costs, because they reduce the risks in credit rating and information asymmetry (Fonseca et al., 2016).

2.2 Effect of Earnings Management on the relationship between Corporate Governance and the Cost of Third-Party Capital

The existing ownership structure in Brazil leads to agency problems, caused between majority and minority shareholders. In this way, different incentives arise that corroborate the practice of earnings management. The institutional context is an important factor in this nature, as concentrated control directly influences the reduction of information quality through EM practices (Torres, Bruni, Martinez & Castro, 2010).

The extent of the relationship between earnings management and the cost of third-party capital is intensified according to the development of the institutional market in which the company is established (Graham et al. 2004; Kim et al. 2018). The United States, for example, has measures to protect the capital of third parties, investors, and stakeholders. Protective laws such as SOX have been adopted as corporate governance practices to improve the reliability of companies in the corporate environment and intensify the stock market (Andrade et al., 2014).

In turn, the positive relationship between EM and the cost of third-party capital, by accentuating informational asymmetry and reducing the quality of accounting reports, establishes that investors in strong institutional environments are more independent and do not need third-party resources to mitigate agency conflicts (An et al., 2016).

In this context, the best CG practices should reduce agency costs and, by improving the informational quality of the companies, enhance the reputation in the bond market. By realizing these practices, credit agencies reduce capital costs due to credibility and transparency (Jensen & Meckling, 1976; Luthan & Satria, 2016).

In contrast, the adoption of CG mechanisms may not inhibit the opportunistic behavior of managers. By deciding to allocate the company's capital in different ways, the agent can use opportunism to manage earnings in his favor. Many companies offer bonuses, prizes, and extra earnings to administrators according to earnings presented. In this way, the manager will conduct actions that bring short-term benefits, even if this means risks for the long term (Martinez, 2001; Tran, 2014).

By adhering to EM practices, companies are subject to the vulnerability of the credit market, which may identify opportunistic actions from the modification of earnings. In reaction, the risks and rates established by the return on capital invested will be high (Kim et al. 2018). Thus, even if companies have strong corporate governance mechanisms, they can simultaneously present earnings management practices and this can have a restrictive effect on corporate governance practices in reducing the cost of third-party capital.

In this context, the third hypothesis of research on the moderating effect of earnings management on the relationship between corporate governance and the cost of third-party capital is presented.

H_3: Corporate governance moderated by earnings management increases the cost of third-party capital in companies listed in [B]³.

3 Methodological Procedures

In order to meet the proposed objective, an explanatory, documentary, and quantitative approach research was conducted. The survey population included the publicly-held companies listed in [B]³ - *Brasil, Bolsa, Balcão*. Initially, due to the peculiarities of the sector, each year companies that carried out financial activities were excluded. Also, companies that did not have the necessary information to calculate all the variables used in the survey were excluded. Thus, the sample selected is considered unbalanced, comprising 212 companies in 2012, 177 in 2013, 178 in 2014, 167 in 2015, 168 in 2016, and 159 in 2017, totalizing 1,068 observations.

It should be noted that 2010, in Brazil, is the beginning of full adoption of international accounting standards (*International Financial Reporting Standards*- IFRS). Santos, Ponte, and Mapurunga (2014) measured the general compliance index and the index for each mandatory IFRS standard in the first year of adoption in Brazil (2010), finding low compliance in the required disclosure levels.

As an explanation for such low levels, Santos et al. (2014) describe that 2010 was the first year of adoption of IFRS, thus starting a new accounting system, institutionalized in countries of common *law culture*, differently from the Brazilian culture characterized as *code law*. They point out that hardly all standards would be empirically implemented in the first year of change.

Based on these findings, in order to avoid distortions in results, it was decided not to use information from the first two years of mandatory adoption of IFRS, whose analysis considered the period from 2012 to 2017.

Initially, corporate governance was analyzed through an index, which establishes percentages according to the used group of *dummy* variables, receiving a value of 1 when the criterion is met and 0 for the

item that does not meet the criterion. A weight of 20% is established to the item that meets the criterion. In the end, each company could obtain 100%, in case of meeting the five criteria used to compose the index. The variables observed to compose the *proxy* of corporate governance were: company audited by *big four*, presence of audit committee, non-duality in the position of director president and chairman of the board of directors, presence of the majority of independent members on the board of directors, and the differentiated level of corporate governance of each company, as suggested by Vieira, Velasquez, Losekann, and Ceretta (2011), Lameira (2012), Santana, Góis, Luca, and Vasconcelos (2015).

Then, data were collected on the factors described in the literature as influencing the cost of third-party capital and corporate governance, as highlighted in the survey construction, presented in Figure 1.

Dependent Variables	**Metric**	**Basic authors**	**Data source**
The cost of third-party capital (Kd)	$Kd_t = \frac{Df_t}{FinCP_{t-1} + FinLP_{t-1} + DebCP_{t-1} + DebLP_{t-1}}$	Nardi and Nakao (2009); Fonseca et al.; (2016);	*Banco de dados Economatica®*
Explanatory Variables	**Metric**	**Basic authors**	**Data source**
Earnings management (EM)	Jones Modified: $TA_{it} = [(\Delta CA_{it} - \Delta Avail_{it}) - (\Delta CL_{it} - \Delta Deb_{it}) - Depr_{it}]/A_{it-1}$ (Formula 1) $\frac{TA_{it}}{A_{it-1}} = \alpha_i \left[\frac{1}{A_{it-1}}\right] + \beta_{1i}[\Delta REV_{it}] + \beta_{2i}[PPE_{it}]/A_{it-1} + \varepsilon_{it}$ (Formula 2) $NDA_{it} = \alpha_I \left[\frac{1}{A_{it-1}}\right] + \beta 1_i[\Delta REV_{it} - \Delta REC_{it}] + \beta 2_i[PPE_{it}]/A_{it-1}$ (Formula 3) $AD = TA - NDA$ (Formula 4)	Dechow, Sloan and Sweeney, (1995). Gu, Lee, and Rosset; (2005).	*Banco de dados Economatica* ®
Corporate governance (GOV)	GOV = Corporate Governance Practices Company audited by *big four*? Yes= 1 and No= 0 Does it have an audit committee? Yes= 1 and No= 0 Non-duality CEO and Chairman of the Board Yes= 1 and No= 0 Majority of independent members on the Board Yes= 1 and No= 0 Listed at a differentiated level of corporate governance Yes= 1 and No= 0	Lameira, (2012); Santana et al. (2015)	*B³* Website
EM_Gov	Moderator variable between Earnings Management x Corporate Governance Indicator		
Control Variables	**Metric**	**Basic authors**	**Data source**
Size (SZ)	*SZ* = LnTA Accounting value's natural logarithm of the company's total assets.	Fonseca et al., (2016);	*Banco de dados Economatica®*
Sales increasing (SI)	$SI = \frac{Sales_{t1} - Sales_{t0}}{Sales_{t0}}$	Barros et. al (2014);	*Banco de dados Economatica®*
Tangibility (TANG)	$Tang = \frac{Fixed\ Assets}{Total\ Assets}$	Barros et al. (2014);	*Banco de dados Economatica®*
Total indebtedness (INDEBT)	$Indebt = \frac{CL + NCL}{Total\ Assets}$	Mazzioni, Prigol, Moura and Klann, (2015);	*Banco de dados Economatica®*

Figure 1: Survey construction
Source: own elaboration.

For the calculation of the earnings management, we have the description of the Jones model formula components in its modified version, according to Dechow et al. (1995), where:

ΔCA_{it}= change in the company's current assets i at the end of period t- 1 to the end of period t;
$\Delta Avail_{it}$= change in availabilities of company i at the end of period t-1 to the end of period t;

ΔCL_{it}= change in company's current liabilities i at the end of period t-1 to the end of period t;
ΔDeb_{it}= change in financing and short-term loans of company i at the end of period t-1 to the end of period t;
$Depr_{it}$= amount of depreciation (and amortization) expenses of company i during period t;
A_{it-1}= total assets of firm i in year t-1;
NDA_{it}= non-discretionary accumulations of firm i in year t;
ΔREV_{it}= change in gross revenue of firm i between years t and t-1, weighted by total assets at the end of period t-1;
ΔREC_{it}= change in accounts receivable (clients) of firm i between years t and t-1, weighted by total assets at the end of period t-1;
PPE_it= fixed assets (and intangibles) of firm i in year t, weighted by total assets at the end of period t-1; ε_{it}= residual of regression for firm i in year t.

According to Martinez (2013), the modified Jones model used to measure earnings management by *accruals* is the most used in Brazil, although it has some flaws. It should be noted that the corporate governance data were collected manually for each company and each year through the companies' Reference Form, in Section 12.5/6 - Composition and professional experience of the management and fiscal council and in Section 2.1/2 - Identification and compensation of independent auditors available on the B³ website.

For the other variables, the Economatica® data platform was used. The variables called control variables, that is, that can also influence the cost of third-party capital and corporate governance, present in the literature, considered in the regression for panel data as independent were: size, sales increasing, tangibility and total indebtedness.

After the data collection, the analyses were performed. Initially, a descriptive analysis of variables of interest to the research took place and, later, the regression of data in panel to meet the objective proposed by the research. Before applying the regression, the assumptions intrinsic to the model were verified, as shown in Figure 2.

Assumptions	**Tests**	**Estimation models**	**Tests**
Homocedasticity	Breusch-Pagan	Fixed effect X *POLS**	Chow
Absence of self-correlation	Wooldridge	Random effects X *POLS*	Breusch-Pagan's LM
Absence of multicollinearity	*Variance Impact Factor* (VIF)	Fixed effect X Random effect	Hausman
Normal distribution of waste	Jarque-Bera		

Figure 2: Testing the assumptions and the estimation model
Source: Prepared by the authors based on Fávero (2016)
* Pooled Ordinary Least Square (POLS)

After testing and applying the appropriate corrections, the regression models for panel data were applied to meet the proposed objective.

4 Results and Discussion

First, the descriptive statistics of the cost of third-party capital (Kd), corporate governance index (GOV) and earnings management (EM) are presented, as shown in Table 1.

Table 1:
Descriptive statistics of the variables cost of third-party capital, corporate governance, and EM

Year	**Number of Companies**	**Variables**					
		(Kd)		**EM**		**GOV**	
		Average	**Standard Deviation**	**Average**	**Standard Deviation**	**Average**	**Standard Deviation**
2012	219	0,22	0,49	0,12	0,14	50,36	22,57
2013	177	0,36	1,34	0,18	0,66	48,16	23,76
2014	178	0,24	0,59	0,09	0,11	50,79	24,71
2015	167	0,55	2,41	0,24	1,73	51,90	23,60
2016	168	0,41	1,12	0,11	0,10	53,81	24,07
2017	159	0,30	0,63	0,10	0,09	54,47	24,43
Grand Totals	1068	0,35	0,66	0,14	0,60	51,58	0,69

Source: research data.

It can be observed in Table 1 that the average cost of third-party capital oscillated in the period under analysis. When comparing the year 2012, whose average was 0.22, with the year 2017, with an average of 0.30, there was an increase of 36% in the average cost of third-party capital.

In 2012, the companies with the highest cost of third-party capital were Cia Hering S.A. with 1.19, Duratex S.A. with 1.29, and Kroton Educacional S.A. with an indicator equal to 2.41. In 2013, Biomm has an indicator equal to 2.79, Igua S.A with 2.54, and Construtora Lix da Cunha with 2.93. In 2014 the company Biomm with 0.56, Celesc S.A. with 0.61, and Rede Energia with 0.90. In 2015 the companies with the highest indexes were All Norte S.A. with 0.41, Celesc S.A. with 0.59, and Empresa Concessionária da Rodovia Norte S.A. with 0.45. In 2016, OI S.A. presented an indicator equal to 0.59, Salus Infraestrutura Portuária S/A with 0.47, and Senior Solution S.A. with 0.45. In relation to the year 2017, it can be observed that the companies with the highest cost third-party capital indexes are Indústria Cataguas S.A. with 0.41, Localiza S.A. with 0.48, and Salus Infraestrutura Portuária S/A with 0.46.

The cited companies presented higher indexes than the sample average. These results may be due to the economic recession and the consequent reduction of credit. Paula and Pires (2017) argue that Brazil presented in the period under investigation, a *Minskyan* crisis in which the cash generation of companies is unable to honor the financial expenses of the debt, where more than half of the companies listed in [B]³ have a *Ponz*i financing structure. The reduction in sales on a large scale, combined with the strong recession, lead to an increase in interest on credit hire and an increase in the cost of debt.

Additionally, Silva, Santos, and Nakamura (2018) argue that the economic recession interferes with the strategies of organizations, as they need to adjust their capital structures according to the investments and financing available in the market. Oscillation in interest rates causes changes in the strategies of the capital structure. D'Amato (2019) also highlights the reduction in credit supply and demand in the face of the economic recession, reducing the opportunities for credit hire, which raises the cost of debt.

The average indicator of 0.35 is higher than that found by Barros, Silva and Voese (2015), who analyzed the cost of debt of 83 publicly-held companies, from 2008 to 2010, and obtained an average indicator of 0.26. It also differs from the results of Fonseca et al., (2016), which found an average indicator of 0.20, in an analysis of 230 publicly-held companies in the period from 2010 to 2014.

Results reflect the scenario experienced by Brazil. As highlighted by the Brazilian Association of Banks (ABBC, 2019), with the financial crisis in Brazil there was the devaluation of the dollar and, consequently, an increase in the level of indebtedness of publicly-held companies. This scenario directly affects the companies' revenue transactions, as well as the investments coming from institutional investors and other *stakeholders*, which contributes to reduce the companies' market value and to increase the cost of third-party capital.

In relation to the corporate governance indicator, it can be observed that the year 2012 presents the smallest standard deviation in the analyzed period, with 22.57. When comparing 2012 to 2017, an increase of 8.16% is noticed, that is, the difference between the companies in the years included in the analysis remains uniform, thus indicating that there are no major differences over the years.

The adoption of best practices in CG contributes to the reduction of excessive risks, such as high levels of leverage and improvement in company performance (Detthamrong, Chancharat & Vithessonthi, 2017). In addition to the adoption of IFRS, companies have implemented CG practices to increase investor protection, influencing stock valuation and liquidity, as well as the quality of accounting information (Lanzana, 2004).

It can be observed in the earnings management variable that, by the averages of each year, there was a reduction of 16.67% in the EM by companies from 2012 to 2017. Thus, one can consider that the years 2014 and 2017 were the only years that showed low rates of earnings management, between 0 and 0.10, in which 31.55% of all the companies analyzed in the period managed earnings in low proportions. On the other hand, 68.45% of the companies managed earnings from medium to high proportions, represented by indexes higher than 0.10.

Other studies, such as Mazzioni et al. (2015), investigated earnings management in 261 companies from 2010 to 2013, and classified the earnings management indexes, considering the values between -0.10 and 0.10 of low proportions and the values above 0.10, considered of high proportions. They identified that 138 companies listed on the Stock Index with Differentiated Corporate Governance (ICGX), representing 60% of the sample, presented low proportion management, staying between -0.10 and 0.10.

Table 2 shows the direct influence of the EM and corporate governance on the cost of third-party capital, as well as the moderating effect of the EM on the relationship between corporate governance and the cost of third-party capital.

As shown in Table 2, 4 different models were used to test the study hypotheses. Model 1 demonstrates the direct influence of EM on the cost of third-party capital (Kd). Model 2 demonstrates the direct influence of Earnings Management and Corporate Governance, individually, on the cost of third-party capital. In the sequence, Model 3 presents the influence of the moderating variable of corporate governance and management of earnings on the cost of third-party capital. Finally, Model 4 denotes the direct influence of corporate governance on the cost of third-party capital.

The results of models 1 and 2 confirm the first hypothesis - earnings management practices increase the cost of third-party capital in companies listed in [B]³. The results corroborate Francis et al. (2005), Gu, Lee,

and Rosset (2005), Nardi and Nakao (2009), An et al. (2016), Lazzem and Jilani (2018), Kim et al. (2018) and align themselves with the Agency Theory's arguments, which define the existence of incentives for agents to idealize their own interests, even if this influences the loss of major's capital, as discussed by Jensen and Meckling (1976), Healy and Whalen (1999), Martinez (2001), Martins and Lopes (2005), Kim and Sohn (2013), Martinez (2013), Ge and Kim (2014), Kim et al. It is observed in Model 4, that good corporate governance practices reduce the cost of third-party capital in the companies listed in [B][3], and it is not possible to reject the second hypothesis, corroborating the findings of Andrade et al. (2014), Tran (2014), Mazzioni et al. (2015), Fonseca et al. (2016), Ghouma et al. (2018).

Table 2:
Influence of earnings management and corporate governance on the cost of third-party capital

Independent Variables	Dependent variable: Kd			
	Model 1	*Model 2*	*Model 3*	*Model 4*
(Constant)	0,162*	0,008*	0,170*	0,138
EM	0,001*	0,001*		
GOV		-0,000		-0,008*
GOV X EM			0,016*	
SZ	-0,003*	-0,001*	-0,006*	0,009
SI	-0,000*	-0,000*	-0,000*	-0,001*
OVELIQ	0,001	-0,000	-0,000	0,000
TANG	-0,000	-0,000	-0,000	-0,000
INDEBT	-0,017	-0,020	-0,016	-0,025
Number of observations	1068	1068	1068	1068
Statistics F	4,53	3,62	46,31	2,77
Prob>F	0,0002	0,0000	0,0000	0,0113
Adjusted R^2	0,0312	0,0313	0,5232	0,0230
Rho	0,152894	0,153078	0,268947	0,160117
Adjusted Durbin-Watson statistics	1,990879	1,990812	1,985593	1,989635

Source: research data.
*significant values at 1% level.

Regarding the moderating variable (GOV_EM), it is observed in Model 3 that EM causes corporate governance to have an inverse effect (positive sign) to that found in the direct relation with the cost of third-party capital (Model 4). Thus, the results corroborate the third hypothesis of the survey, in which earnings management annuls the beneficial effect of corporate governance and produces an increase in the cost of third-party capital. It is suggested that companies that adopt corporate governance practices, but continue to use the EM, tend to continue with a higher cost of third-party capital.

In this sense, it can be inferred that companies with high levels of corporate governance can also suffer from the negative impacts of opportunistic behavior by managers in EM practices. Moreover, the evidence points to the possibility of failures in corporate governance practices adopted by Brazilian companies.

One possible explanation for the findings, considering the Tran (2014) approach, is that for debt holders, CG practices matter little when it comes to decisions on concessions and interest rate negotiations. Thus, corporate governance is important when agency costs are high and CG practices are sufficient to reduce them. External shareholders value governance mechanisms in the institutional environment, although they have less legal protection when compared to creditors. It is important to point out that the institutional environment shows significant importance for this discussion, since governance mechanisms and stricter rules applied with greater *enforcement* contribute to the protection of third-party capital (Fonseca et al., 2016).

In this way, the Brazilian market is being able to perceive such opportunistic behavior of the manager in financial reports, raising contractual rates and also the expected returns on invested capital, due to the perception of the risk offered by the company with its EM practice (Healy & Wahlen, 1999; Nardi & Nakao, 2009; Nardi et al., 2009; Miko & Kamardin, 2015; Anagnostopoulou & Tsekrekos, 2017; Kim et al. 2018).

As for the control variable size, results indicated that larger companies presented lower costs from third-party capital (Larcker & Richardson, 2003). Larger companies usually enjoy a better reputation, influencing the agents' perception of investment risk. Therefore, large companies tend to access external resources at lower costs (Castro & Martinez, 2009). Thus, the results corroborate the findings of Bowen, Rajgopal, & Venkatachalam (2008), Bekiris & Doukakis (2011), Bradley & Chen (2011), Ghouma et al. (2018), who found negative associations between company size and cost of capital.

Companies with lower sales increasing (SI) presented higher cost of third-party capital. The findings corroborate the understanding of Myers (1977) and Rajan and Zingales (1995), that companies in smaller growth can signal to the credit market greater propensity to risk leading to increased cost of capital. Consequently, the increase in the cost of capital will slow down the speed of growth of these companies.

The variables overall liquidity (Oveliq), tangibility (Tang) and indebtedness (Indebt), presented a positive association with the cost of third-party capital, however, they were not statistically significant. The

divergences found in the study, with the theoretical perspectives resulting from previous research by Francis et al. (2005), Graham et al. (2004), Nardi et al. (2009), Chun and Cha (2012), Barros et al. (2014), Ge and Kim (2014), An et al. (2016), Moura et al. (2016), Anagnostopoulou and Tsekrekos (2017), Kim et al. (2018), may result from the sample size, the type of enterprises and the period investigated.

5 Final Considerations

The objective of the study was to verify the moderating effect of earnings management on the relationship between corporate governance and the cost of third-party capital of publicly-held companies listed in [B][3]. The study used the relation of financial expenses over the total debts of the company as a *proxy* for the cost of third-party capital. For corporate governance an index was used according to the adoption of the best practices of governance and the earnings management was established by means of the discretionary *accruals*, resulting from the difference of total *accruals* and non-discretionary *accruals*, according to the modified Jones model proposed by Dechow et al. (1995).

The results have shown that, on average, companies have partially adhered to the indicators that measure the level of corporate governance practices. Thus, the practices adopted contemplate the protection of shareholders, investors, *stakeholders,* and *shareholders*, as well as the valorization and reputation of the company in the face of social, political, and economic changes in the country.

As far as earnings management is concerned, an average reduction of 16.67% in the index of companies managing earnings from 2012 to 2017 can be observed. In this sense, the results reflect the changes that have occurred in the Brazilian stock market, in which from 2012, new levels of corporate governance have been created, with the purpose of increasing transparency and information quality for those interested in companies listed on the stock market.

The results show that companies with earnings management practices tend to hire resources at higher costs with the market, because financial institutions perceive the opportunistic attitude of managers when analyzing financial reports.

As far as corporate governance is concerned, it can be inferred that it contributes to reduce the cost of third-party capital. The effect may be due to the better quality of accounting information produced by companies with better corporate governance practices, generating greater credibility with credit institutions and influencing risk perception. When the perception of risk decreases, interest rates also decrease.

Finally, the practice of managing earnings has proven to nullify the favorable effect of corporate governance on the cost of third-party capital. Companies that adopt corporate governance practices, but at the same time use the EM, tend to continue with a higher cost of third-party capital. This result may reflect the agent's obtaining favors and other gains at the expense of the cost of third-party capital.

In general terms, credit institutions offer financial resources at a cheaper cost to companies with higher quality accounting information. In this sense, the study contributes by suggesting that the practice of earnings management reduces the quality of accounting information in the view of financial institutions that offer credit. Corporate governance, in the absence of earnings management, has proved effective in monitoring the opportunistic behavior of managers, helping companies to obtain credits at lower cost.

In this way, the research contributes to the strengthening of the theme in the national scenario and to the broadening of the discussion of the moderating effect of earnings management on the relationship between corporate governance and the cost of third-party capital, still little discussed in Brazil. In general, the evidence from this research contribute to fill an important gap in the national literature, by verifying that companies that use earnings management practices annul the favorable effect of corporate governance in reducing the cost of third-party capital.

As a limitation of this survey, the quality of the accounting information was measured through the Jones Modified model of earnings management based on *accruals.* There are other models for managing earnings based on *accruals* and based on operational decisions. In addition, the quality of the accounting information can be estimated by several other metrics, using accounting and market data. Given the limitations, space is open for future research, using other attributes of the quality of accounting information and its relationship with the cost of third-party capital.

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NOTES

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SEARCH DATA SET
The data set that supports the results of this study is not publicly available.

FINANCING
Not applicable.

CONSENT TO USE IMAGE
Not applicable.

APPROVAL OF THE RESEARCH ETHICS COMMITTEE
Not applicable.

CONFLICT OF INTERESTS
Not applicable.

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