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Impact of information disclosure on the value of shares of mixed economy companies

Impacto da evidenciação de informações no valor das ações das sociedades de economia mista

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Keywords
Disclosure Theory.
Mandatory disclosure.
Voluntary disclosure.
Informational transfer.
Mixed economy societies.

Abstract

The objective of this research is to verify if the disclosure: (i) of financial statements; (ii) of communiques to the market and; (iii) the government's own rating classification, affect the value of the shares of publicly held corporations. The research also aims to identify whether the impact on mixed-capital companies is greater than on other firms. The research is based on the 2003-2015 time period, and the sample consists of 3,514 firm/year observations, with 239 observations of mixed-capital companies. The events involving the disclosure of financial statements and communiques to the market were taken from the CVM website, while the sovereign rating events were found on the Brazilian Department of the Treasury website. Multiple regressions were conducted, which demonstrated that cumulative abnormal returns are impacted by mandatory and voluntary disclosure and by government's own rating classification. It was also noted that voluntary disclosure and sovereign rating have an additional impact on mixed-capital companies.

Palavras-chave
Teoria da Divulgação.
Disclosure *obrigatório.*
Disclosure *voluntário.*
Transferência informacional.
Sociedades de economia mista.

Resumo

O objetivo desta pesquisa é verificar se a divulgação: (i) das demonstrações contábeis; (ii) dos comunicados ao mercado e; (iii) da classificação de rating do governo, afetam o valor das ações das sociedades anônimas de capital aberto. Adicionalmente, a pesquisa, também, tem como objetivo identificar se o impacto nas sociedades de economia mista ocorre em maior grau quando comparadas as demais firmas. A pesquisa tem como base temporal o intervalo de tempo de 2003 a 2015, e a amostra é composta por 3.514 observações, empresa/ano, sendo 239 observações de sociedades de economia mista. Os eventos de divulgação de demonstrações contábeis e de comunicados ao mercado foram coletados manualmente no site da CVM e os eventos de rating soberano, no site da Secretaria do Tesouro Nacional. Foram realizadas regressões múltiplas, que demonstraram que os retornos anormais acumulados são impactados pelas divulgações obrigatórias, voluntárias e pelas classificações de rating do governo. Além disso, observou-se que há um impacto adicional nas empresas de economia mista quando das divulgações voluntárias e de classificação de rating soberano.

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Practical Implications

The research contributes towards a better understanding of the Brazilian capital market and its investors, showing their reaction to the disclosure of company information. It also shows that investors react when the information that is disclosed refers to companies in which the government is a shareholder.

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1 INTRODUCTION

The purpose of the Disclosure Theory is to explain phenomena arising from the disclosure of financial information (Salotti & Yamamoto, 2005). One of the perspectives studied is the impact on the value of company shares resulting from the disclosure of information. For some authors, such as Gibbins, Richardson and Waterhouse (1990) and Von Alberti-Alhtaybat, Hutaibat and Al-Htaybat (2012), corporate disclosure is a far-reaching term, that deals with the disclosure of information by physical or digital means that is either financial or otherwise, numerical, qualitative, mandatory or voluntary. The involuntary disclosure of information can also be included in this definition (Skillius & Wennberg, 1998). Verrecchia (2001), on the other hand, states that there is no unified or integrated disclosure theory, since there is no central paradigm underlying all research, which examines small parts of the whole.

Healy and Palepu (2001) argue that organizations can disclose mandatory information, for example, by way of financial reports, voluntary information by way of press releases and corporate reports and, involuntarily information via financial analysts and the press. They further claim that such disclosure is essential for the capital market to function efficiently.

Mixed-capital companies (SEM) in Brazil are relevant economic agents and present in significant numbers, since they represent one of the ways government acts in the economy (Ribeiro & Alves, 2006). However, in addition to the various problems of government inefficiency in sectors that are vital to the country's development, mixed-capital companies face risks of political influence, which can affect the value of those companies in which the government is an investor (Kuschbrey *et al.*, 2014), but the value of a company's shares can also be affected by its own and by third party disclosures, as can be seen in research into information transfer.

This research, therefore, aims to analyze whether disclosure of the firm's mandatory and voluntary information, and the disclosure of information about the government affects the share price of companies. Whether the disclosure of this information affects mixed-capital companies differently is also analyzed.

The justification for this research is the importance of obtaining a better understanding of the Brazilian stock market, the behavior of shares and the reaction of investors to the disclosure of information. It also examines the relevance and functionality of accounting, market communication and sovereign rating classifications as a way of reducing information asymmetry between companies and investors. Brazil is a favorable scenario for such an analysis because of the strong participation of the government as an investor in large companies that are quoted on the Brazilian stock market.

The data of 383 companies listed on the B3 [Brazilian Stock Exchange] between 2003 and 2015 were analyzed; more specifically the abnormal returns of firms were calculated that were observed close to events disclosing mandatory information, such as the publication of regular financial statements (DFPs) and quarterly information (ITRs); voluntary information, as communicated to the market, and the transfer of information, such as the disclosure of the sovereign rating. The results show that mixed-capital companies and other companies are affected equally with regard to mandatory disclosure. With regard to voluntary disclosure and sovereign rating, however, there is an additional effect on mixed-capital companies when compared to other companies.

This study contributes in at least two respects to the accounting and finance literature. First, it adds to the discussion about the effect of the information released by the company on its share price, thus providing the Brazilian stock market with empirical evidence. Secondly, it contributes to debates about information transfer as it relates to an important shareholder in the Brazilian stock market, the government. This research also contributes to practical aspects, as it demonstrates how the market behaves in the face of the disclosure of corporate information and the sovereign rating, enabling investors to have a greater understanding of disclosure events in the Brazilian scenario.

2 THEORETICAL REFERENCE

2.1 Mandatory disclosure

According to Skillius and Wennberg (1998) mandatory disclosure is evidence of the information about a company's activities that is required by law and does not depend on any relationship between cost and benefit (Mapurunga, Ponte & Holanda, 2014). Among the empirical surveys, we highlight those that relate mandatory disclosure to volatility, price and the return on stocks.

Malaquias and Lemes (2015) analyzed the relationship between the level of disclosure in financial reports and the volatility of the return on securities of Brazilian companies listed on the NYSE. To do so they studied the accounting reports of 24 Brazilian companies that had Level II or III ADRs on the NYSE between 2002 and 2006. They found that the highest level of disclosure is related to a less volatile returns on their securities. They also found that there is a relationship between the level of disclosure and the size of the companies.

Mugaloglu and Erdag (2011) studied the ISE-30 index after implementation of the Istanbul Stock Exchange Public Disclosure Platform and, unlike Malaquias and Lemes (2015), they found that for some companies there is no impact on volatility and for others the relationship is positive, showing that the expected reduction in uncertainty and volatility after the platform was implemented did not materialize.

Sadeghzadeh and Karimi (2010) investigated the impact of mandatory and voluntary disclosure on the value of the shares of companies on the Tehran Stock Exchange. In doing so they studied 91 companies in the years between 2002 and 2009, using a checklist and the Jensen index. They observed that neither mandatory nor voluntary disclosure in this market has an influence on investors in terms of their decision-making.

Finding no significant relationship, Marques *et al.* (2010) also verified whether there is an impact on the value of the shares of companies listed on BOVESPA's Novo Mercado [New Market] when relevant facts are published. To conduct the research an event study was carried out with 92 publications of relevant facts relating to 20 companies in the Novo Mercado. As a result, they observed that most of the relevant facts did not significantly influence share price.

Based on the concepts of mandatory disclosure and in view of Law 6,404/1976, which requires the disclosure of financial statements, and based also on studies that relate the disclosure of financial statements to the value of shares, the first hypothesis of this research is:

H_1: The mandatory disclosure of financial statements has an impact on the value of the shares of public companies.

2.2 Voluntary disclosure

Voluntary disclosure can be defined as the disclosure of information by companies in a discretionary manner (Skillius & Wennberg, 1998), based on the relationship between cost and the benefit of disclosing (Mapurunga, Ponte & Holanda, 2014). Similarly, Dye (2001) treats voluntary disclosure as a particular case of the Game Theory, in which the company would disclose information if it were beneficial to do so. Sousa *et al.* (2014) also state that organizations voluntarily disclose information to differentiate themselves in the market, thereby encouraging investors to make decisions that maximize their value.

Murcia *et al.* (2011) researched whether the level of disclosure has an impact on the volatility of publicly traded shares in Brazil. To do so they conducted a content analysis, of voluntary disclosure, which involved the regular financial statements of the 100 largest companies on BOVESPA, except for financial organizations. They identified that the volatility of stocks is impacted by economic disclosure, but that socio-environmental disclosure and total disclosure did not significantly affect share volatility.

Sousa *et al.* (2014) studied companies listed on BOVESPA, and classified disclosure as being social, environmental, and economic. To do so they analyzed the financial statements and the annual and sustainability reports of 97 companies for the period between 2007 and 2011. They found that there is a positive relationship between economic disclosure and market value, that there is a negative relationship between environmental disclosure and value, and that this relationship does not exist for social disclosure.

Lima *et al.* (2012) carried out an experimental study simulating a capital market with two companies and 353 participants, in which one of the companies disclosed information on its performance and the other did not. Their conclusions were that the level of disclosure of organizations has an impact on the perspectives of investors, and, therefore, on the value of the shares.

They also found that the disclosure policy, dividends and capital structure affect not only the value of the company's own shares, but also those of its competitors that do not disclose the same information.

Based on the concepts of voluntary disclosure, which refer to the voluntary disclosure of information (Skillius & Wennberg, 1998; Mapurunga, Ponte & Holanda, 2014; Sousa *et al.*, 2014; Dye, 2001) and CODIM Guidance Pronouncement 5 of November 27, 2008, which discusses, among other matters, the optional disclosure of notices to the market, the second hypothesis of this study is:

H_2: The voluntary disclosure of announcements to the market has an impact on the value of the shares of public companies.

2.3 Involuntary disclosure and information transfer

Involuntary disclosure is defined by Skillius and Wennberg (1998) as exposing information about the company's activities without consent and contrary to its will. It is worth mentioning research that studied the relationship between involuntary disclosure and share price using the rating classification issued by the risk agencies. Murcia, Murcia and Borba (2013) analyzed whether the credit rating of Brazilian public companies has an impact on the return on shares. They did so by looking at 242 ratings announced by Standard & Poor's and Moody's in the period from 1997 to 2011, and found significant results for abnormal returns in all types of initial, downgrade and upgrade rating announcements, thus showing that rating announcements contain sensitive information that affects the return on stocks.

Creighton, Gower and Richards (2007) also studied the reaction of stock prices to announcements of rating changes in the Australian market. They carried out an event study with 141 announcements issued by Standard & Poor's and Moody's agencies between 1990 and 2003. They found a relationship between the announcement and the price variation, but the impact was small.

Jorion, Liu and Shi (2005) also conducted an event study with 1767 downgrade and 437 upgrade announcements that were released by Standard & Poor's, Moody's and Fitch, and they found a significant relationship involving downgrades in the period prior to the introduction of disclosure regulation, and both upgrades and downgrades in the post-regulation period. They also concluded that after the regulation, the shares suffered a greater impact.

According to Dietrich (1989) the main concept of information transfer is the notion that investors interpret the information of a company when evaluating a negotiation, and not only information about the company itself, but also about other companies. Dietrich (1989) also presents three motivations for conducting information transfer studies. The first refers to the incorporation of information by the market in the prices of non-disclosing companies, the second to the impact of disclosing company-specific information on other companies in the sector, and the last is the development of asset pricing considering the spreading of information.

Studying the impact of a company's results on the value of the shares of companies in the same sector, Foster (1981) found evidence showing that the impact exists, but has greater weight in companies that receive most of their revenue from the same line of business. Schneible Jr (2015), in addition to verifying that information is transferred in the earnings announcement, observed that the shorter the strategic distance between companies, the more positive this transfer is; this also occurs when the advertising company is bigger and its profits are more consistent.

The concepts of information transfer as defined by Dietrich (1989), research by Foster (1981) and Schneible Jr (2015), who verified the impact of information transfer, research by Murcia, Murcia and Borba (2013), Creighton, Gower and Richards (2007) and Jorion, Liu and Shi (2005), which relates rating to share value, and bearing in mind that the sovereign rating is not information directly related to companies, lead to the third hypothesis:

H_{3a}: Disclosure of the sovereign rating by risk rating agencies has an impact on the value of shares in public companies.

Still using the concepts and information transfer research and research that relates rating classification to stock value, and considering the government's shareholdings in mixed-capital companies, this research has one last hypothesis:

H_{3b}: The disclosure of the sovereign rating by risk rating agencies also has an impact on the value of shares in mixed-capital companies.

3 RESEARCH METHODOLOGY

The field of study for this research was Brazilian companies that are listed on the B3. It was conducted to analyze the impact on the value of company shares resulting from the disclosure of company information. The sample also comprises the mixed-capital companies described in Table 1. For the statistical tests, *Banco do Estado de Santa Catarina S.A.* (Besc) was removed from the sample, due to the lack of observations for the necessary variables.

Table 1. Sample description

Company	Sector	Main shareholder
Banco da Amazônia S.A.	Finance and Insurance	Federal government (Treasury)
Banco de Brasília S.A. – BRB	Finance and Insurance	Federal District government
Banco do Brasil S.A.	Finance and Insurance	Federal government (Treasury)
Banco do Estado de Santa Catarina S.A. – Besc	Finance and Insurance	Federal government (Treasury)
Banco do Estado de Sergipe S.A. – Banese	Finance and Insurance	Government of the State of Sergipe
Banco do Estado do Pará S.A. – Banpará	Finance and Insurance	State of Pará
Banco do Estado do Rio Grande do Sul S.A. – Banrisul	Finance and Insurance	State of Rio Grande do Sul
Banco do Nordeste do Brasil S.A.	Finance and Insurance	Federal government (Treasury)
Banestes S.A. Banco do Estado do Espirito Santo	Finance and Insurance	Government of the state of Espirito Santo
Cemig Distribuição S.A. – Cemig	Electricity	State of Minas Gerais
Centrais Elétricas Brasileiras S.A. – Eletrobrás	Electricity	Federal government (Treasury)
Cia Cat. de Águas e Saneamento – Casan	Others	State of Santa Catarina
Cia Saneamento Básico Est. São Paulo – Sabesp	Others	Government of the State of São Paulo
Cia. de Saneamento do Paraná – Sanepar	Others	State of Paraná
Companhia Celg de Participações – Celgpar	Electricity	State of Goiás
Companhia de Saneamento de Minas Gerais – Copasa	Others	State of Minas Gerais
Companhia Energética de Brasília – Ceb	Electricity	State Revenue Department of the Federal District
Companhia Energética de São Paulo – Cesp	Electricity	Government of the State of São Paulo
Companhia Paranaense de Energia – Copel	Electricity	State of Paraná
Petróleo Brasileiro S.A. – Petrobras	Oil and Gas	Federal government (Treasury)
São Paulo Turismo S. A. – SPTurismo	Others	São Paulo City Administration
Telec. Brasileiras S.A. – Telebrás	Telecommunications	Federal government (Treasury)

Source: research data.

The data used were taken from the times when the disclosure events occurred. They were used as milestones for defining the periods to be used for analyzing the value of the shares. Data for disclosure of the SFSs, QIs and market notices were collected manually from the CVM website, while information from the sovereign rating disclosure events, issued by Standard & Poor's, Fitch Ratings and Moody's, was collected from the website of the Brazilian Department of the Treasury.

The period analyzed in the survey is from the beginning of 2003 until the end of 2015; 2003 is the beginning of the period for which data related to communiques to the market are available for research on the CVM website. The variables analyzed are the cumulative abnormal stock returns in the period defined by the disclosure events. The event window, the period in which the returns for each event were collected, and which is subject to a degree of personal choice (Camargos & Barbosa, 2003) was defined as being one day before the event and one day after the event, in accordance with Beyer *et al.* (2010).

To calculate returns in the research, the form of discrete capitalization was used, in which the stock returns were obtained by equation (1).

$$r = (P_t - P_{(t-1)}) / P_{(t-1)} \qquad (1)$$

where r is the rate of return, P_t the share price in period t and $P_{(t-1)}$ is the share price in period t-1.

For abnormal returns, this research used the market-adjusted return model, in which abnormal returns are calculated by the difference between the observed return of the firm and the return of a market portfolio in the same period, according to equation (2). In Brazil, the most widely used market index is the IBOVESPA (Camargos & Barbosa, 2003), but in this study the average daily value-weighted return of all companies listed on the B3 was used, weighted by the company's market value in relation to the total.

$$A_{it} = R_{it} - R_{mt} \qquad (2)$$

where A_{it} is the abnormal return of a given stock i in time period t, R_{it} is the observed return of the same share i in the same time period t and R_{mt} is the return of the market portfolio in period t.

Cumulative Abnormal Return (CAR) (3), which consists of accumulating the abnormal returns observed in the event window by means of their sums, was used to accumulate the abnormal returns on the days of the event window, since there is no way of specifying the moment when the market received information about the events (Camargos & Barbosa, 2003).

$$CAR_i\ (t_1, t_2) = \sum_{t=t_1}^{t_2} A_{it} \qquad (3)$$

where CAR_i is the cumulative abnormal return of asset i, t_1 is the first day of the event window, t_2 is the last day of the event window and A_{it} is the abnormal return of a given stock i in time period t.

For the statistical test, a regression was performed, similar to the one used by Beyer *et al.* (2010):

$$CAR_{i,t} = a + b_1 car_{i,t}^{DO} + b_2 car_{i,t}^{DV} + b_3 car_{i,t}^{GOV} + b_4 Vm_{i,t} + b_5 Roa_{i,t} + b_6 Btm_{i,t}\ b_7 IFRS_t + \varepsilon_{i,t} \qquad (4)$$

where $CAR_{i,t}$ is the cumulative abnormal return of asset i, in year t, $car_{i,t}^{DO}$ is the three-day cumulative abnormal return centered on the mandatory disclosure announcements of the financial statements, $car_{i,t}^{DV}$ is the three-day cumulative abnormal return centered on the voluntary disclosure announcements to the market and $car_{i,t}^{GOV}$ is the three-day cumulative abnormal return centered on the government's sovereign rating announcements. To control for potential effects associated with the size, profitability, and growth of companies, control variables were added to the model. The variable *Vm* is the Neperian logarithm of the market value of company i in period t. The variable *Roa* represents the return on assets of company i in period t. The Book-to-Market of company i in period t is represented by the variable *Btm*. *IFRS* is a dummy worth 1 in 2010 and later and 0 otherwise, to reflect the possible impacts of accounting changes.

In cases where there was no announcement, the variables $car_{i,t}^{DO}$, $car_{i,t}^{DV}$ and $car_{i,t}^{GOV}$ took the value 0 and in cases where more than one event occurred, the returns for each window were added.

To identify the additional impact of mixed-capital companies on disclosures, interactions between the variables and a dummy variable that identifies this class of company were added to the model.

$$CAR_{i,t} = a + b_1 SEM_{i,t} + b_2 car_{i,t}^{DO} + b_3 car_{i,t}^{DO} \times SEM_{i,t} + b_4 car_{i,t}^{DV} + b_5 car_{i,t}^{DV} \times SEM_{i,t} + b_6 car_{i,t}^{GOV} + b_7 car_{i,t}^{GOV} \times SEM_{i,t} + b_8 Vm_{i,t} + b_9 Roa_{i,t} + b_{10} Btm_{i,t} + b_{11} IFRS_t + \varepsilon_{i,t} \quad (5)$$

where *SEM* is a dummy variable that assumes value 1 if the company is a mixed capital company and 0 otherwise. The other variables follow the same definition as in equation (4).

4 RESULTS

Table 2 shows the sample's descriptive statistics demonstrating the relevance of mixed-capital companies by way of the mean difference test, since these companies have a significantly higher mean for *Vm*, *Roa* and *Btm* than other companies.

Table 2. Descriptive statistics

	$CAR_{i,t}$	Vm	Roa	Btm
Total average	9,64437	R$5,883,423	-9,41813	0,10068
Standard deviation	46,26848	R$16,762,351	75,21577	5,23112
Average SEM	7,45374	R$15,821,126.47	1,15104	1,47645
Average of other companies	9,80423	R$5,113,549	-10,20851	-0,00610
T test				
t	0.7581	-8.9755	-2.2535	-3.9379
diff	2.35049	-10707577	-11.35956	-1.48255
Pr(|T|>|t|)	0.4484	0.0000	0.0243	0.0001

Source: research data.

Note: Where $CAR_{i,t}$ is the cumulative abnormal return of asset *i*, in year *t*, *Vm* is the market value of companies in Br. Reais, *Roa* is the return on the asset and *Btm* is the Book-to-Market..

Table 3 shows the correlations between the control variables of the models and the dependent variable, showing a significant correlation between the dependent variable and the *Btm* variable, between the *Vm* variable and the *Roa* and *Btm* variables, and between the *Roa* and *Btm* variable.

Table 3. Correlations of control variables

	$CAR_{i,t}$	Vm	Roa	Btm
$CAR_{i,t}$	1.0000			
Vm	-0.0290	1.0000		
Roa	-0.0181	0.0676*	1.0000	
Btm	-0.1379*	0.0357*	0.4305*	1.0000

Source: research data.

Note: Where $CAR_{i,t}$ is the cumulative abnormal return of asset *i*, in year *t*, *Vm* is the market value of companies in Br. Reais, *Roa* is the return on the asset and *Btm* is the Book-to-Market.. * significant at 10%.

For the statistical tests, 3514 observations were used per company and per year, of which 239 observations come from mixed-capital companies. It is important to point out that there the researchers did not have that observations for all companies/year, and that observations are risk being ignored when control variables are added because of the data limitation of these variables.

The variables $CAR_{i,t}$, $car_{i,t}^{DO}$, $car_{i,t}^{DV}$, $car_{i,t}^{GOV}$, *Vm, Roa* and *Btm* underwent a Winsorization process with a lower limit of 1% and an upper limit of 99%, which consists of replacing the values below and above the limit determined by the lowest and highest remaining values, respectively. It should be noted that the results are similar without the Winsorization process.

Table 4 shows the regressions between the variables, in simple and interacting models, in addition to the controls. Model 1 relates the cumulative abnormal return for the year to the cumulative abnormal return around the mandatory disclosure, voluntary disclosure, and government rating events.

Model 2 adds the four control variables. In models 3 and 4, in addition to the variables listed in models 1 and 2, there are the interactions of these variables with the *SEM* variable, representing the additional value of the variables when they are related to SEM (Table 4). All models were estimated using a robust standard error for controlling heteroscedasticity.

Table 4. Result of regressions

$CAR_{i,t}$	Model 1	Model 2	Model 3	Model 4
Intercept	6.13710	30.77421	6.14645	31.29829
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
$car_{i,t}^{DO}$	0.91072	0.9138611	0.92081	0.9300167
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
$car_{i,t}^{DV}$	0.71544	0.6943111	0.74946	0.7308305
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
$car_{i,t}^{GOV}$	1.62069	1.526313	1.71756	1.624274
	(0.000)***	(0.000)***	(0.000)***	(0.000)***
SEM			-0.56399	2.323807
			(0.839)	(0.476)
$car_{i,t}^{DO}$ x SEM			-0.16915	-0.2349845
			(0.634)	(0.538)
$car_{i,t}^{DV}$ x SEM			-0.33004	-0.3360049
			(0.002)***	(0.004)***
$car_{i,t}^{GOV}$ x SEM			-1.55438	-1.506754
			(0.001)***	(0.003)***
Vm		-1.401348		-1.453078
		(0.000)***		(0.000)***
Roa		-0.0059985		-0.0056158
		(0.762)		(0.776)
Btm		-0.9030349		-0.8896751
		(0.000)***		(0.000)***
IFRS		-7.878638		-7.932209
		(0.000)***		(0.000)***
Adjusted R^2	0.2161	0.2325	0.2206	0.2368
Observations	3514	2859	3514	2859

Source: research data.

Note: $CAR_{i,t}$ is the cumulative abnormal return of asset *i*, in year *t*, $car_{i,t}^{DO}$ is the three-day cumulative abnormal return centered on mandatory disclosure announcements of the financial statements, $car_{i,t}^{DV}$ is the three-day cumulative abnormal return centered on voluntary disclosure announcements to the market and $car_{i,t}^{GOV}$ is the three-day cumulative abnormal return centered on the announcement of the government's sovereign rating, *SEM* is a dummy variable that assumes value 1 if the company is a mixed capital company and 0 otherwise, *Vm* is the Neperian logarithm of the market value of the company, *Roa* represents the return on assets of the company, *Btm* is the Book-to-Market and *IFRS* is a dummy worth 1 in 2010 and later and 0 otherwise. In cases where there was no announcement, the variables $car_{i,t}^{DO}$, $car_{i,t}^{DV}$ and $car_{i,t}^{GOV}$ took the value 0 and in cases where more than one event occurred, the returns for each window were added. *** significant at 1%.

Analyzing model 1 in Table 4, both the mandatory disclosure variable and the voluntary disclosure and government rating classification variables are significant at the 1% level. This result shows that these variables have an impact on the dependent variable, which is the annual cumulative abnormal return. It appears that the *Vm* and *Btm* variables were also significant. These results are in line with hypotheses 1, 2 and 3a of this research.

In model 3, as with models 1 and 2, the mandatory disclosure, voluntary disclosure and government rating classification variables are significant at the 1% level. There is no significance in the interaction variables for the interaction of the *SEM* variable with the mandatory disclosure variable, but there is significance in the interaction with the voluntary disclosure and sovereign rating classification variables. This result demonstrates that there is an additional impact for SEM in voluntary disclosure and sovereign rating events.

This fact is evidence of hypothesis 3b of this study, that is, that mixed-capital companies are affected differently than other companies when the sovereign rating is disclosed. In models 2 and 4, the control variables Vm, Btm and IFRS were also significant.

To establish robustness, tests were performed only with companies in the Finance and Insurance sector, the sector that contains the most SEM; another test was conducted excluding this sector. All the methodological details used in the previous estimates were maintained. The results were similar for both the Finance and Insurance sector and when this sector was excluded.

In short, in all models the cumulative abnormal returns variables around mandatory and voluntary disclosure and government classification rating events have a significant impact on annual cumulative abnormal returns. In addition, in all models with interactions, the interactions of the *SEM* variable with the voluntary disclosure and sovereign rating variables showed significant results, while the variables *Vm, Btm* and *IFRS* were significant in the models with controls.

These results corroborate the research of Malaquias and Lemes (2015) who found there was an impact for mandatory disclosure, but they are contrary to the research by Mugaloglu and Erdag (2011), Sadeghzadeh and Karimi (2010) and Marques *et al.* (2010) who were unable to detect any impact. As for voluntary disclosure, our results are supported by the research conducted by Murcia *et al.* (2011), Souza *et al.* (2014) and Lima *et al.* (2012). The results also confirm research by Murcia, Murcia and Borba (2013), Creighton, Gower and Richards (2007) and Jorion, Liu and Shi (2005) that found a relationship between share value and ratings.

5 FINAL CONSIDERATIONS

This research aimed to verify whether the disclosure of information has an impact on the value of company shares. It specifically tried to establish whether the disclosure of mandatory corporate information through the publication of financial statements, and voluntary information by way of notices to the market, and government information, by way of the sovereign rating classification affects the value of the shares of public companies and has an additional impact on mixed-capital companies.

To do so a study similar to that of Beyer *et al.* (2010) was undertaken to verify whether the disclosure of information has an impact on the value of company shares. In view of the results of the statistical tests, all the hypotheses raised in this study were confirmed. The conclusion drawn, therefore, is that investors react to the disclosure of financial statements, and market and government rating announcements in the Brazilian market, and to voluntary disclosure and government rating announcements, albeit in a different way when it comes to mixed-capital companies.

The research contributes towards a better understanding of the Brazilian capital market and of the behavior of investors, showing that the means of disseminating information are relevant and act to reduce information asymmetry. The study also contributes to the literature on disclosure and information transfer, corroborating some of the previous studies on this matter and developing the relationship between information disclosure and financial variables. It also indicates new research possibilities.

This study has its limitations, such as: its field of study, which covers only companies listed on the B3; the types of information that were used as events, which were just the disclosure of financial statements, market notices and the sovereign rating; the way in which abnormal returns are measured, which, of the many models available, uses the market adjusted model; and the subjective nature of the choice of the event windows.

Suggestions for future research include using other fields of study, for example, segmenting companies by sector, and adopting other types of information, such as relevant facts and media news. Event studies also enable different methods of measuring abnormal returns to be used, so this research can be conducted employing other methods and other event windows.

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