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# OWNERSHIP STRUCTURE AND SHAREHOLDERS: PERSPECTIVES ON CONFLICT BETWEEN STATE PARTICIPATION IN THE VALUE OF COMPANIES ON THE BRAZILIAN STOCK EXCHANGE - B3

[1]**Lidinei Éder Orso**
[2]**Ruan Carlos dos Santos**
[3]**Fabiano Maury Raupp**
[4]**Antônia Marcia Rodrigues Sousa**

## ABSTRACT

**Purpose:** The main objectives are the influence on the various interested shareholders, the role of institutionalized the State in the shareholding structure of companies, and their influence on share prices after the events of media about disclose of these in this study.

**Design/methodology/approach:** In the first moment, the investigation had a quantitative approach of a relational nature based on the events investigated between 2010 and 2020 and were published in the newspapers. In addition to the share prices, the variables investigated corresponded to the various forms of state participation. Based on stock valuation data, statistical methods were applied to a secondary database containing measurable information provided by organizations operating in the Brazilian stock market and documentary evidence provided by companies.

**Findings:** The presence of the State as a shareholder has significant relevance in the Brazilian capital market and the application of public resources. It is the responsibility of society and academia to monitor such applications and ascertain whether it generates value for the business and the country. Within the study's boundaries on the management of public resources and investments, Corporate Governance has been arising the debate and questioning about the government's performance as a shareholder in the firm.

**Originality/value:** When investigating the perspective of the State as a shareholder has significant relevance in the Brazilian capital market and the application of public resources. Society and academia's responsibility is to monitor such applications and ascertain whether it generates value for the business and the country.

**Keywords:** Corporate Governance. Theory Agency. State. Ownership Structure. Shareholder. Media.

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[1] Mestrado em Administração pela UNIVALI, Santa Catarina, (Brasil). Professor de pós-graduação - Universidade Regional Integrada do Alto Uruguai e das Missões (URI), Rio Grande do Sul (Brasil). **Email:** lidinei.orso@yahoo.com.br **Orcid:** https://orcid.org/0000-0002-8128-4337
[2] Doutorando em Administração pelo PPGA - Universidade do Estado de Santa Catarina (UDESC-ESAG), Santa Catarina (Brasil). **Email:** ruan_santos1984@hotmail.com **Orcid:** http://orcid.org/0000-0001-7396-8774
[3] Doutorado em administração pela Universidade Federal da Bahia. E professor da Universidade do Estado de Santa Catarina (UDESC-ESAG), Santa Catarina (Brasil). **Email:** fabiano.raupp@udesc.br **Orcid:** https://orcid.org/0000-0001-9533-2574
[4] Doutorando em administração de empresas pela Universidade de Fortaleza (UNIFOR). Professora adjunta da Universidade Federal do Ceará (UFC), Ceará (Brasil). **Email:** pesquisadoramarciarodrigues@gmail.com **Orcid:** https://orcid.org/0000-0003-0659-9897

*ESTRUTURA DE PROPRIEDADE E ACIONISTAS: PERSPECTIVAS DE CONFLITO ENTRE A PARTICIPAÇÃO DO ESTADO NO VALOR DAS EMPRESAS NA BOLSA DE VALORES BRASILEIRA - B3*


## RESUMO

**Objetivo:** Os principais objetivos são a influência dos vários accionistas interessados, o papel institucionalizado do Estado na estrutura acionista das empresas, e a sua influência na cotação das acções após os acontecimentos mediáticos sobre a divulgação dos mesmos neste estudo.

**Metodologia/abordagem:** No primeiro momento, a investigação teve uma abordagem quantitativa de natureza relacional com base nos eventos investigados entre 2010 e 2022 e que foram publicados nos jornais. Além dos preços das ações, as variáveis investigadas corresponderam às diversas formas de participação do Estado. A partir dos dados de valorização das ações, foram aplicados métodos estatísticos a uma base de dados secundários contendo informações mensuráveis fornecidas por organizações que atuam no mercado acionário brasileiro e evidências documentais fornecidas pelas empresas.

**Conclusões:** A presença do Estado como acionista tem significativa relevância no mercado de capitais brasileiro e na aplicação de recursos públicos. Cabe à sociedade e à academia acompanhar tais aplicações e verificar se geram valor para o negócio e para o país. Dentro dos limites do estudo sobre a gestão de recursos e investimentos públicos, a Governança Corporativa vem suscitando o debate e o questionamento sobre a atuação do governo como acionista da empresa.

**Originalidade/valor:** Ao investigar a perspetiva do Estado como acionista tem significativa relevância no mercado de capitais brasileiro e na aplicação de recursos públicos. Cabe à sociedade e à academia acompanhar tais aplicações e verificar se geram valor para a empresa e para o país.


**PALAVRAS-CHAVE:** Governança Corporativa. Teoria da Agência. Estado. Estrutura da propriedade. Acionista. Media.

## 1. Introduction

Companies are legal institutions made up of associations of several types, which can imply an ownership structure composed of multiple and diverse shareholders – among them, there might be a national and local government (Bortolotti and Faccio, 2009; Da-Silva, 2004; Lazzarini and Musacchio, 2010; Thomsen and Pedersen, 2000). In the ownership structure of the companies listed on the Brazilian stock market, the national government often appears as a shareholder. In Brazil, the government can hold equity stakes of companies in two different ways: direct (public and state-owned companies, federal authorities, funds for social participation, regional development funds, and national development banks, e.g., the Brazilian Development Bank (BNDES) and indirect (pension funds by state-owned companies and enterprises) (Lazzarini, 2007).

Companies with the government as a shareholder represent a significant portion of the daily volume of transactions in the Brazilian stock exchange. Many of them are part of the Ibovespa – Brazilian's most significant stock index (BM&FBOVESPA, 2017). These companies' consideration for their governance and value generation comes increasingly under the spotlight in today's Brazil. The media, as known, can act as a type of corporate governance mechanism affecting the stock market through event press releases, interrogative pressure, and reputation building (Dyck and Zingales, 2002).

The media can contribute to the follow-up of companies- and capital market-related events, which is vital for the investors. Moreover, by evaluating the companies and those involved in their operation, the media plays the role of social authority and stands among the external factors that arbitrate and influence social, legal, and economic perceptions (Wiesenfeld, Wurthmann and Hambrick, 2008). The external assessment of the companies' performance and management has been gaining ground about the shifts in corporate Governance (Westphal and Graebner, 2010) and dismissal of managers (Wiersema and Zhang,

2011).

When bound with corporate governance, the media can also act as a mechanism for securing the interests of the shareholders (Dyck and Zingales, 2002). Considering as 'external' the corporate governance mechanisms that are controlled by those outside an organization, the media helps the operation of companies become more efficient by influencing two of its goals: protection of shareholders' rights and law enforcement; and transparency in the disclosure of information (Aguilera, Desender, Bednar and Lee, 2015; Allam, 2018). It is essential to highlight that any improvement in governance practices is in the best interest of all corporate actors: for instance, investors (helping to identify the most efficient and sustainable allocation of resources); companies (increasing liquidity and stocks' price in the market); employees and society (securing jobs and income); national entities (making the public-interest investments viable with funding from the capital market) (BM&FBOVESPA, 2015; Fontes-Filho and Picolin, 2008; Li et al. 2017).

The several actors in the segment of state participation enterprises, whether or not stakeholders, should be aware that these companies respond to the public interest, which supports their existence. However, this does not mean that companies should shift the focus of their governance decisions from satisfactory economic, financial, and market results, especially regarding capital appreciation.

In light of the Agency Theory, this study aims at contributing to the research on corporate governance. It presents evidence that the Brazilian government and the media influence companies' stock prices in the market. In Brazil, the studies on the effects of different ownership structures are still in their early stages, even when the Brazilian government has a shareholding (Lazzarini, 2011). Therefore, by investigating the effects of internal and external governance mechanisms [i.e., ownership structure and the media], this study provides new insights into corporate governance in Brazil.

In general, the principal-agent problem refers to questions of information and incentive schemes. incentive schemes. Agency problems may stem not only from differences in motivation and goals between and goals between principal and agent, as well as information asymmetry, risk preference of the parties, and planning of the parties, and planning horizon (Eisenhardt, 1989).

In the scope of the state, in a broad way, and in the state apparatus, in a more specific way, several agency relations are agency relationships, as discussed by Przeworski (2003), exemplified by the tacit or explicit tacit or explicit contracts between citizens and politicians, the state and the economic system, and the economic system, and politicians and the bureaucracy. It is within the scope of this last relationship that this work is inserted. Although more evident in indirect administration, agency problems may also become serious in direct administration, particularly in political contexts characterized by characterized by coalition mechanisms (Ring and Perry, 1985; Ménard, and Shirley, 2014).

. As defined by Abranches (1988), the coalition presidentialism that characterizes the Brazilian model, "besides combining proportionality, multiparty system, and 'imperial presidentialism,' organizes the Executive based on large coalitions," which This produces a high fragmentation of ministerial control by the parties, weakening the executive branch and increasing the conditions for rent-seeking by coalition parties or by the bureaucracy itself (Misangyi, and Acharya, 2014).

This study also has a practical application. Understanding the relationship between different types of ownership and stock price variations – following the event disclosure by the press – can help investors and managers improve corporate processes, customs, policies, laws, and operations. Moreover, any breakthrough in the knowledge of state participation enterprises and the role of the media (print, broadcast, outdoor, and internet) can reduce uncertainties and risks of investing, an outcome that can benefit investors and the Brazilian society as a whole.

## 2. Literatura Review

This section outlines theories and concepts applicable to the interpretation of this study's findings, which served as theoretical background for the development of the experiment.

### 2.1 Agency theory

The importance attributed to transparency, protection of shareholder's rights, and accountability is derived from the perceived tendency that managers to use their power to benefit their interests. In addition, the distance and neglect on the part of capitalists regarding the use and management of their own money in joint-stock companies in 1932 highlighted the relevance of corporate Governance (Berle and Means, 1991). In this period, academia began to connect with the practice by shifting its attention from the theory books to the actual operation of modern corporations; the rise of the Agency Theory (Eisenhardt, 2015).

The construction of the Agency Theory has its foundation in the structure of contracts, especially those expressing the relationship between the employees and the employers (Alchian and Demsetz, 1972) and, more importantly, between the agents and the principals; i.e., when the owner of a company delegates the decision-making power to a manager (Jensen and Meckling, 1976).

However, these relationships can also occur between creditors, customers, and suppliers; and between the government, community, and corporations (Shleifer and Vishny, 1997). Contractual relationships between individuals can be explicit and unspoken and eventually become the pillar of the company itself (Fama and Jensen, 1983). It is also possible to state that these relationships exist in every connection in which there is the transfer of power, including those between majority and minority shareholders (La Porta, Silanes, and Shleifer, 1999; Ferola and Paglia, 2021).

In the public sector, agency relationships are often treated from the perspective of public choice theory, which considers that it is up to the state, represented by politicians democratically chosen to occupy their posts, to promote public policies that serve the interests of civil society (Lemieux, 2015). Silva (1996) states that it is possible to identify, in this context, an agency relationship where the voter is placed as the principal and the state as the agent. As there is no reason to believe that the behavior of individuals with respect to public decisions will be fundamentally different from that observed in private choices, and adding to this the fact that individuals seek to maximize the satisfaction of their individuals seek to maximize the satisfaction of their own interests, it follows that, in democratic regimes, government policies democratic regimes, government policies will reflect irrationalities of ordinary people (Buchanan and Tullock, 1962; Schillemans, 2013; Viscusi and Gayer, 2015).

From a public choice perspective, the state is not a dominant entity, but rather the product of political exchanges, which exists for the purpose of serving society (Buchanan, 1975). This reasoning This reasoning resembles Jensen and Meckling's (1976) concept of agency relationship, considering that civil society can be seen as the civil society can be seen as the principal and the state as the agent. The decisions made by decisions made by bureaucrats consist of public choices, which basically deal with the definition of which public goods which public goods should be produced and in what quantity (Silva, 1996).

Przeworski (2003) analyzes that three types of agency relationships should be considered: between the state and private economic agents; between citizens and politicians; and between politicians and the public machine, that is, the bureaucracy. The latter relationship inevitably implies the delegation from the state to the bureaucracy of services that the government must provide to citizens - this delegation of an activity being the basic This delegation of an activity is the basic condition for the occurrence of the agency relationship (Eisenhardt, 1989). For Yesilkagit (2004), there is then a fundamental tension occurs between

delegation of tasks, political control and accountability to civil society.

Corporate governance – defined as a set of internal and external corporate control mechanisms – arises as an alternative to balance agency costs. It helps reduce the loss of market value from conflicts of interest regarding ownership and control (Silveira, 2015). According to Shleifer and Vishny (1997, p. 738), "corporate governance mechanisms are the economic and legal institutions that can be changed, through the political process, sometimes for the better." This statement inconsistent with the idea that corporate governance can be a signal in the in the capital market. In this way, companies modify or improve governance mechanisms and governance practices and make them visible, with the aim of communicating communicate something to the other party (market analysts and/or investors).

In this context, based on Certo et al (2003) the differentiated corporate governance mechanisms and practices, according to the signaling theory, represent signals from the company that are communicated to the market, and may alter the probability distribution of analysts and/or investors. It is true that in order to send these signals to the market, the company incurs signaling costs, because adopting differentiated corporate governance mechanisms and practices is expensive.

Spence's (1973) theory of signaling emphasizes that education functions as a signaling or discriminating mechanism between types of workers in a context of information of workers, in a context of asymmetric information, in the labor market. Spence (1973) states that education and employer earnings are positively correlated, however not because education increases a person's productivity the person's productivity, but because employers see it as a reliable a reliable signal regarding the abilities of individuals. According to Pindyck and Rubinfeld (2002), education is a strong signal in the labor market, that can improve an individual's productivity because it can provide more information, knowledge, and skills (useful on the job). However, however, even if education did not improve productivity, it would still be a useful useful signal, because more productive individuals tend to find it easier (intelligence, discipline, and commitment) to achieve higher levels of education.

## 2.2 Corporate governance

Corporate governance comprises the restrictions imposed on agents to avoid poor and inefficient resource allocation. It also deals with the system of control mechanisms through which investors in companies assure themselves of getting a return on their investment (Shleifer and Vishny, 1997; Daily, Dalton, and Cannella, 2003).

The idea that companies should aim to generate wealth for long-term investors honestly and morally, respect the freedom of competition, and act with social responsibility became one of the corporate governance pillars (Friedman, 1970). This idea had a significant impact on the corporate governance debates. It emerged due to the discomfort generated by some of the decisions made by senior executives and in defense of more transparency, accountability, and rights for shareholders – as presented by Berle and Means in 1932 (Silveira, 2015).

Corporate governance can influence companies' performance, such as profitability, market value, and return on investment (Love, 2010). Although the literature is not conclusive on the relationship between corporate governance practices and company performance, several studies positively link the two (Renders and Gaeremynck, 2012).

Any mechanism addressed to preventing agents from making decisions that potentially decrease the share price of companies can be considered as aligned with the interests of managers and shareholders.Concerning the establishment of a better alignment of interests between agent and principle and the mitigation of agency problems, the field of strategic management interprets corporate governance as the collection of internal and external processes by which companies are operated and controlled (Silveira, 2015). These processes are referred to in the literature as corporate governance mechanisms.

### 2.3 Corporate governance mechanisms

The control mechanisms that compose effective systems of Corporate Governance can be categorized into two types: internal and external mechanisms (Walsh and Seward, 1990; Weir, Laing, and Mcknight, 2002; Denis and Mcconnel, 2003; Silveira, 2015; Tipurić, Tušek, and Filipović, 2009). Internal governance mechanisms are those generated inside the company; derived, for instance, from the board of directors, internal control, and internal audit functions. Whereas external governance mechanisms are those generated outside the company; derived, for instance, from the capital market, labor market, media, and court decisions (Aguilera et al., 2015). The literature on Agency Theory considers these mechanisms the very structure of corporate governance and essential for guiding managers' decisions towards increasing the long-term wealth of the owners of the company in case of conflicts of interest, technical limitations, and cognitive biases (Silveira, 2015).

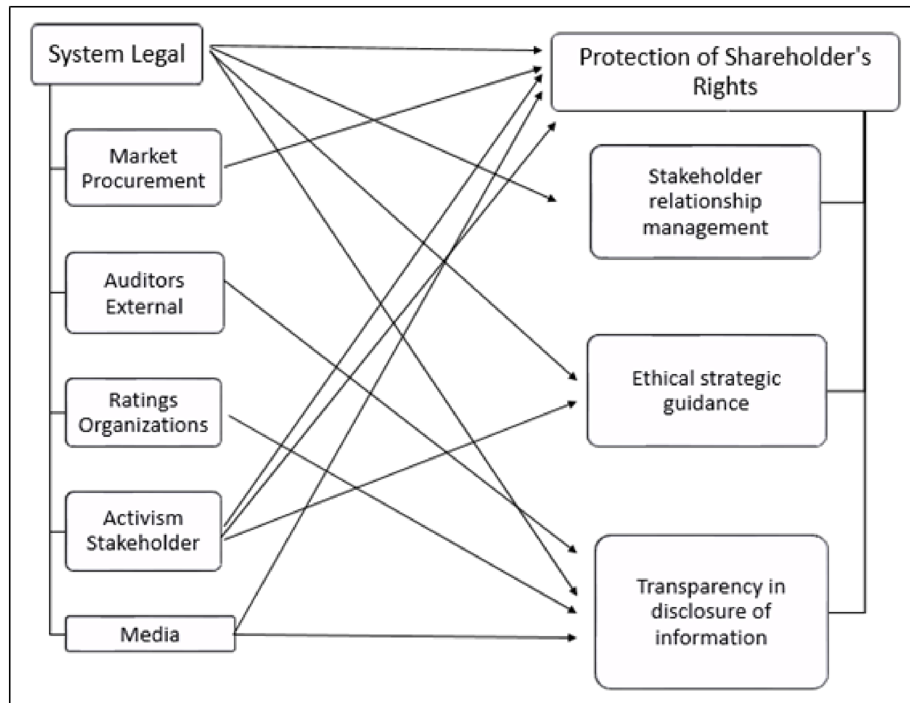
Implementing suitable internal governance mechanisms is often associated with better corporate and financial performance. Researchers and corporations dedicate much time to identifying more effective internal mechanisms, especially those related to the board of directors, managerial incentives and compensations, and ownership structure (Aguilera et al., 2015; Eckert, Silva, Bema nd Schlindwein. (2021). The board of directors is considered the most crucial instrument of corporate governance. Some key aspects are crucial to its effectiveness and positive achievements, such as its number of members (Lipton and Lorsh, 1992), composition (Johnson, Schnatterly, and Hill, 2013), and level of independence (Silveira, 2015). The most relevant activities of the board include internal control and internal audit (IBGC, 2015; Silveira, 2015).

Complementing the literature review on corporate governance mechanisms, the following table (Table 2) enlists the main external governance mechanisms and the studies in which they were approached. It is imperative to highlight that various nomenclature and definitions are found in the literature regarding internal and external governance mechanisms. Therefore, to present the information clearly and concisely, this study adopted the frame of reference suggested by Aguilera et al. (2015).

In general, studies on corporate governance and its mechanisms suggest that if internal mechanisms are not sufficient to protect the interests of the shareholders, external mechanisms can function as a complement to assure good corporate performance. However, research is not yet conclusive about the extent of these mechanisms' direct and indirect influence on corporate Governance (Aguilera et al., 2015; Castilhos, 2021).

The legal system, purchase market, external auditors, rating organizations, stakeholder engagement, and media is the core of the presented external governance mechanisms. Given improving companies' performance, these mechanisms relate to corporate Governance objectives. The following figure (Figure 1) illustrates their relationships.

Figure 1 - Relationships between external mechanisms and the objectives of corporate governance




Source: Adapted from Aguilera et al. (2015, p. 486) and Barros et al. (2021).

Figure 1 indicates that the protection of shareholder's rights is influenced by the legal system, purchase market, stakeholder engagement, and the media. The legal system and stakeholder engagement affect both management of stakeholders' relationships and companies' ethical, strategic orientation. Finally, transparency and disclosure of the information are influenced by the legal system, external auditors, rating organizations, and the media.

Given that the objective of this study is to analyze the potential participation and influence of the Brazilian government as a shareholder on the price of companies' stocks after disclosure of events, ownership structure and the media as corporate mechanisms are detailed in the following sub-sections.

### *2.3.1 Ownership structure and the State as a shareholder*

The literature has identified the different behaviour and interests of various ownership structures. However, the only study synthesizing the influence of varying ownership types in shaping board corporate governance is Federo et al. (2020). The reason may be that the existing concept of separated and focused ownership may no longer be sufficient to understand and keep up with the continuously evolving corporate governance frameworks with corporate ownership structures globally (OECD, 2019). Federo et al. (2020) call for the literature to focus on particular owners and their particular board governance with their financial performance and the effect of the board on the firm performance.

The internal governance mechanism that comprises ownership structure and equity ownership concentration is closely related to the management of the companies. Shareholders can exert tremendous influence and control over the companies' decision-making and strategic planning, especially in the case of largely concentrated shareholder ownership. Moreover, it is not unusual to find managers who hold equity in their companies (Denis and Mcconnel, 2003).

A company is considered to have: dispersed ownership when none of its shareholders hold more than 20% of its shares; dominant ownership when the percentage of the shares held is between 20% and 50%; and concentrated ownership when more than 50% of its shares are held by a single shareholder (Pedersen and Thomsen, 1997). In the Brazilian context, shareholders may hold a percentage of stocks that grant them voting rights in some companies,

but not in others – even with a similar percentage (Carvalhal- Da-Silva, 2004).

In ownership structure, there might be a wedge between control (voting rights, i.e., the possibility to elect the board of directors and influence on the decision-making of a company) and ownership (cash-flow rights, i.e., claims on cash payouts or dividend). This difference between political power and economic power often leads to conflicts of interest and decreases the company's value, resulting from 'excessive voting power' (Silveira, 2015; Khan, 2022).

In Brazilian companies, the government may appear as a shareholder directly (public and state-owned companies, federal authorities, funds for social participation, regional development funds, and national development banks, e.g., the BNDES) and indirectly (pension funds by state-owned companies and enterprises) (Lazzarini, 2007). Due to the multiplicity of forms in which the Brazilian government can exert power over companies, sometimes referred to as Leviathan – a reference to the sea monster of Jewish mythology (Lazzarini and Musacchio, 2010; Guizani, and Abdalkrim, 2021).

On the other hand, the management of state-owned enterprises faces less pressure to achieve profit, lower threat of bankruptcy and protection against a hostile takeover. At the same time, there is no incentive to strive for productivity as compensation is not based on profitability. Thus, state enterprises engage in governmental and non-financial goals, not shareholder capital growth. The agency conflict within state enterprises also differs from private enterprises. The agency conflict in state-owned enterprises involves managing the relationship between the government and officials appointed to the board. The government wants to maximize the fiscal revenue while government officials want to improve their budget.

**Hypothesis 1 (H1):** There is a relationship between the state as a shareholder and the company's stock price following an event released by the press.

*2.3.2 The media*

As an external mechanism, the media can influence companies to adopt better corporate governance practices; it can also act as a watchdog monitoring and controlling the existing practices (Bednar, 2012; Miller, 2006). The media is sometimes considered a strategic resource capable of optimizing the performance of some companies (Deephouse, 2000).

The media as a governance mechanism underlies the disciplinary effect of news broadcasting, which helps to reduce information asymmetry and concerns about litigation risk and managers' wealth and reputation (Dai, Parwada, and Zhang, 2015). The media coverage reflects the reality and affects it, especially when it comes to corporate governance practices (Dyck, Volchkova, and Zingales, 2008). The views of the media can significantly influence companies' decision-making concerning resource allocation and strategic change A positive corporate performance can mitigate the effects of negative media exposure regarding strategic change (Bednar, Boivie, and Prince, 2013). The media's level and quality of attention can affect the companies in many ways, such as reducing the value of managers' reputation capital and aligning the interests of managers and owners (Liu and McConnell, 2013).

The media's level and quality of attention can affect the companies in many ways, such as reducing the value of managers' reputation capital and aligning the interests of managers and owners (Liu and McConnell, 2013). When the media coveys information about the managers' attitudes and their repercussions among shareholders, consumers, society, investors, business peers, non-governmental organizations, and other interested parties, these mechanisms can play a role in corporate policy-making (Dyck and Zingales, 2002; Johnson, Moorman, and Sorescu, 2009). External directors are more likely to trust the information provided by sources that are not inside the company (i.e., independent sources) for believing that they are more credible and unbiased (Menon and Pfeffer, 2003).

The opinions and evaluations from the media regarding the companies tend to be more

accepted by boards of directors with more external members. The information released by the press is widely available to a diverse range of audiences. Therefore, the reputational costs for managers and companies are substantial (Bednar, Boivie, and Prince, 2013). In this sense, the communication channels (e.g., newspaper, radio, television, blogs) and journalists who work on them can act as one of the external mechanisms of corporate Governance (Aguilera et al., 2015).

The media brings corporate information to various interested parties, fulfilling its role as an external governance mechanism. Print and social media help disseminate information to control and influence managers, preventing them from making decisions that serve only their interests (Dyck, Volchkova, and Zingales, 2008). In addition, by reducing the information asymmetry, the media can promote institutional changes and organizational responses to trust-damaging information. Due to its ability to influence and exert institutional and regulatory pressure over companies, the media can be viewed as an external driver that leads organizations towards good governance practices, a role compatible with the nature of a CEO, who is also a driver but internally.

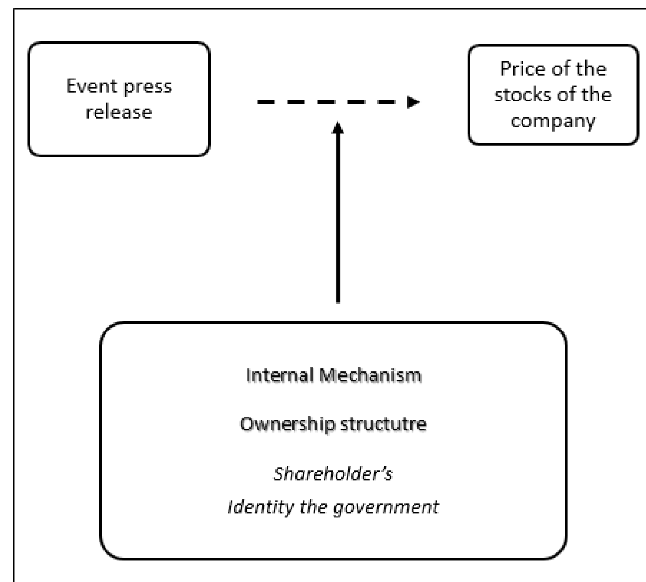
Attributing the media as a governance mechanism starts from acknowledging its influence on companies through positive or negative coverage. There are three ways to consider this influence: (a) by the dissemination of corporate news and the extent of its reach to the stakeholders who would not have access to specific contents through other channels; (b) by the provision of a space in which stakeholders can express their opinions and recommendations addressed to the company and its performance strategies, ensuring effective message delivery to managers – something that could not happen otherwise; (c) by the provision of oversight and independent investigation, subsequently leading to the disclosure of information regarding companies' corporate and social performances (Bednar, Boivie, and Prince, 2013; Monteschio, Monteschio and Monteschio, 2023).

The media can promote effective governance, transparency, and the symmetry of information between shareholders and managers (Dash, 2012). Moreover, incorporating governance, the action of the media has the potential to transpose the role of external mechanism, as it is likely to influence the effectiveness of other more traditional mechanisms (Aguilera et al., 2015).

**Hypothesis 2 (H2):** The percentage of shares in the hands of the government positively moderates the price of the stocks of the companies listed on the Brazilian stock market following an event released by the press.

That said, and in the light of the theories presented, this study investigates the influence of the Brazilian government as a shareholder on the stock price of companies listed on the stock exchange following event announcements. The following figure (Figure 2) outlines the conceptual model of this study (Nardes and Brites, 2021).

Figure 2 - Conceptual model of the investigation of Company´s stock price




Source: Prepared by the authors (2022).

## 3. Materials and Method

This section describes the methodology applied in the investigation divided into six subsections: features, design, and approach; investigated sample and period; data sources and procedures; outline of variables; objectives and operational approach; and event study.

The study presented is exclusively based on the results, regardless of the perception and researcher's opinion about the topic. In terms of research design, this study is both descriptive and explanatory, which addresses the testing of hypotheses [descriptive approach] and the investigation of the cause-and-effect relationship between the selected variables [causal approach] (Hair et al., 2005). Quantitative aspects were also used to support the approach on the matter – since they include statistical methods useful for the testing of theories and analysis of the correlation between variables through numerical data (Creswell, 2010).

Regarding the model, the study is hypothetic-deductive. The scientific inquiry proceeded by formulating the hypotheses in a form that could be falsifiable, using a test on observable data (Black, 1999). Moreover, the scientific inquiry model was postpositivist since it deals with the relationship between cause and effect, assuming that there is no absolute truth in pursuing knowledge (Creswell, 2010).

In terms of method, this is an event study – similar to the one conducted by Fama et al. (1967) – in which abnormal stock returns are tracked and measured. This method enables to ascertain if a given announced event immediately affects the behavior of the stock market, besides requiring relatively short periods of observation to measure the effects of the events on the price of the stocks (Campbell, Lo, and Mackinlay, 1997). It is vital to highlight that methodology applied in this study has been widely used in finance to measure the impact of information disclosure on stock prices (Vachadze, 2001).

### 3.1 Investigated sample and period

The investigated sample comprises the Brazilian companies listed on the B3 stock market, which formed the theoretical investment portfolio of all Ibovespa companies three years from January through April 2010 and 2020. The sample is representative since this group of companies closely matches the characteristics of the Brazilian market as a whole. Because these companies are listed on the stock exchange, they are likely to be more transparent – having their financial information audited regularly – and provide more reliable information. Furthermore, these companies are also more likely to be targeted by the media. Moreover, for a practical

application of the chosen method, the liquidity of the investigated stocks was urgent, and the selected companies met this criterion (Cardoso, Carr, and Rogers, 2019).

The period established for analyzing the impacts of events announced by the media on the stock prices of the investigated companies was from 2010 to 2020. The reason for choosing this period was that it covers: the beginning of the Brazilian economic downturn, significant institutional changes, the election of a president, the impeachment of an elected president, and parliamentary efforts to impeach a second president. These factors broaden the media coverage of events related to the economy, politics, and the investigated companies. Moreover, this period allowed for longitudinal analysis of potential trends (Hair et al., 2005). The newspaper reports chosen (events announced by the media) include two announcements in which the Brazilian stock market reacted negatively and positively.

### 3.2 Data sources and procedures

The data for this study was gathered from secondary sources, such as financial statements of the investigated companies and reports and documents provided by the B3 portfolio and by companies and specialized agencies. The first step of the experiment consisted of analyzing the Ibovespa index curve to identify its high and low peaks during the investigated period. The second step was to search for financial and political-related reports regarding the investigated companies in the most important Brazilian newspapers. The newspaper reports that formed the database of this study were extracted from “O Estado de São Paulo”, “Folha de São Paulo”, “Valor Econômico” and the Globo corporations. The selected newspaper reports were divided by period.

The third step used data provided by Economática® [financial information database of the Latin American companies listed on the stock market] to collect business-related information such as coding and identity (ID). From the B3 portfolio webpage, a list containing the names of the investigated companies and information regarding their ownership structure was extracted.

The data provided by the CVM [Brazilian Securities Commission] also supplied information about ownership structure and representativeness, which aided in the classification of the companies as state-owned, state participation, or private. Information regarding the prices of the companies' stocks was obtained from "Yahoo Finance" and "Uol Economia" webpages. In the final step, the data was processed by a statistical analysis software called STATA; this software enabled the operation of the database for conducting the event study.

### 3.3 Outline of variables

The theoretical framework presented in the previous section (see Section 2) served as the basis for identifying and establishing the variables relevant to this study. Establishing a relationship between the investigated variables enriches the scientific work, which is part of the hypothesis or theory (Sampieri, Collado, and Lucio, 2013). In the case of quantitative variables, these can be considered according to their characteristics and their classifications because they are feasible quantities of numerical variation and categorization (Rauen, 2015).

The following table (Table 3) discloses the variables studied and their operational description. It is noteworthy that each of the independent variables that define the criterion of government shareholding is binary. In other words, they take on the value one if true or 0 if false, based on the criteria outlined in the second column of the table.

Table 3 - Description of the operational variables

| Dependent | Abbreviation | Definition criteria | Supporting studies |
|---|---|---|---|
| Stock price | Vol | Price of the stocks in the market – Abnormal return. | Bednar et al. (2013). |
| **Independent** | **Abbreviation** | **Definition criteria** | **Supporting studies** |
| Government | Gov | When there is any direct or indirect state participation. | Thomsen and Pedersen (2000) and Carvalhal-da-Silva (2004). |
| Government majority stake | Gmaj | When the total amount of shares held by the government (directly or indirectly) grants major control over the company (more than 50%). | |
| Government minority stake | Gmin | When the total amount of shares held by the government (directly or indirectly) grants minor control over the company (less than 50%). | |
| Government national/local | Gnat | When the national/local government is a shareholder. | |
| BNDES | Bnd | When the BNDES is a shareholder. | Lazzarini and Musacchio (2010). |
| Pension funds | Pf | When a state-owned pension fund is a shareholder. | |
| **Control** | Abbreviation | **Definition criteria** | **Supporting studies** |
| Roa | Roa | Total Rate of Return - Net profit / Total assets | Silveira (2005) |

Source: Prepared by the authors (2022).

Where α is a constant term, βi is the regression coefficient, and ε is the error term.

The dependent variable is the response to the change in the independent variable; in turn, the latter is the presumed reason for the change in the former (Hair et al., 2009). Because of this, the dependent variable is the stock price of the companies, as in the studies of Faccio (2002), Pollock and Rindova (2003), Johnson et al. (2005), King and Soule (2007), King (2008), Bednar (2012), and Bednar, Boivie and Prince (2013). The independent variables are defined by the ownership structure of the companies – type of government shareholding – following the studies of Thomsen and Pedersen (2000), Carvalhal-da-Silva (2004), and Lazzarini and Musacchio (2010).

### 3.5 Objectives and operational approach

The relationship between the proposed objectives, the investigated variables, and the adopted methodology is presented in the following table (Table 4). The main research question, which guided the investigation, was conveyed to the table to aid the understanding of the matter. For this same reason, the table also includes previous studies which supported the methods used.

Table 4 - Systematization of the research objectives

| Specifics | Variables | Methods | Supporting studies |
|---|---|---|---|
| To examine the behavior of the Ibovespa during the investigated time period. | Stock prices (dependent) | Descriptive perspective; quantitative approach; and analysis of secondary data gathered from B3, Yahoo Finance and Uol Economia webpages. | Faccio (2002), Pollock and Rindova (2003), Johnson *et al.* (2005), King and Soule (2007), King (2008), Bednar (2012) and Bednar, Boivie and Prince (2013). |
| To identify the main economy and political related events released by the press that have affected the stock market during the investigated period. | Stock prices (dependent) | Descriptive perspective; quantitative approach; and analysis of secondary data gathered from newspapers: Estadão, Folha de São Paulo, Valor Econômico and Globo corporations. | Faccio (2002), Pollock and Rindova (2003), Johnson *et al.* (2005), King and Soule (2007), King (2008), Bednar (2012) and Bednar, Boivie and Prince (2013). |
| To survey the price of the stocks of the companies listed on the Brazilian market. | Stock prices (dependent) | Descriptive perspective; quantitative approach; and analysis of secondary data gathered from Yahoo Finance and Uol Economia webpages. | Faccio (2002), Pollock and Rindova (2003), Johnson *et al.* (2005), King and Soule (2007), King (2008), Bednar (2012) and Bednar, Boivie and Prince (2013). |
| To determine the abnormal return of the investigated companies. | Stock prices (dependent) | Descriptive perspective; quantitative approach; and analysis of secondary data gathered from Yahoo Finance and Uol Economia webpages. | Shleifer and Vishny (1997), Faccio (2002), Pollock and Rindova (2003), Johnson *et al.* (2005), King and Soule (2007), King (2008), Bednar (2012) and Bednar, Boivie and Prince (2013). |
| To ascertain the participation of the government in the ownership structure in the Brazilian open capital companies. | Ownership structure (independent) | Descriptive perspective; quantitative approach; and analysis of secondary data gathered from B3 and CVM websites (dummy and share percentage). | Pollock and Rindova (2003), Carvalhal-da-Silva (2004), King and Soule (2007) and King (2008), Lazzarini and Musacchio (2010). |
| To establish the relationship between the events released by the press and the stock prices of government shareholding companies in comparison those in which the government is not a shareholder. | Stock prices (dependent)<br>Ownership structure (independent) | Descriptive perspective; quantitative approach; and multivariate analysis: dependence technique of multiple regression analysis (STATA). | Faccio (2002), Thomsen and Pedersen (2000), Pollock and Rindova (2003), Johnson *et al.* (2005), King and Soule (2007) and King (2008), Lazzarini and Musacchio (2010), Bednar (2012) and Bednar, Boivie and Prince (2013). |

Source: Prepared by the authors (2022).

### 3.6 Event study

As a method, an event study statistically assesses the market's reaction in the face of a given event, i.e., the impact of an event on the value of a company (Fama et al., 1969). This fact means that by taking into account market efficiency, the value of the companies is affected by the disclosure of certain events, and their effectiveness is subject to the rationality of the market – presuming an immediate impact on the price of the stocks (Campbell, Lo, and Mackinlay, 1997). Using this method in studies on the impacts of political and economy-related events on stock prices requires relatively short observation periods (Campbell et al., 1997). In addition, event study can be applied to multiple purposes and in multiple areas, such as accounting, economics, finances, and even valuation (Mackinlay, 1997).

The common practice in this literature is to set the event date (i.e., day 0) as the day of an article's publication in the WSJ. One drawback of this practice is that the publication date is not necessarily the date of the actual event, as it may have happened on the previous day (before the closing of the stock exchange). This problem is known as "event uncertainty" in the finance literature. The usual method of handling this issue is to expand the event window to two days (day –1 and day 0), thus considering the two-day interval (1, 0) as event window (for a discussion, see MacKinlay [1997]).

The common practice in this literature is to set the event date (i.e., day 0) as the day of an article's publication in the WSJ. One drawback of this practice is that the publication date is not necessarily the date of the actual event, as it may have happened on the previous day (before the closing of the stock exchange). This problem is known as "event uncertainty" in the finance literature. The usual method of handling this issue is to expand the event window to two days (day –1 and day 0), thus considering the two-day interval (1, 0) as event window (for a discussion, see MacKinlay [1997])

There are some defined steps for the event study, namely: 1) define the event and establish the event window; 2) establish company selection criteria; 3) calculate normal and

abnormal returns in the sample set; 4) estimate model parameters using data in as estimation window; 5) conduct tests; 6) present empirical results; and, 7) interpret results and draw conclusions (Campbell et al., 1997). This study analyzed four media political and economic newspaper reports on the following dates: 08/05/2011; 3/16/2016; 08/31/2016; 05/17/2017; 12/09/2018; 08/09/2019 and 13/03/2020. Table 5 defines the investigated events.

Table 5 - Definition of the events

| Date | Definition of the event |
|---|---|
| 08/05/2011 | The US credit agency Standard & Poor's downgrades Brazil's long-term sovereign credit rating from AAA to AA+. |
| 03/16/2016 | The release of a wiretapped phone call between Dilma Rousseff (President at time) e Lula (former President). |
| 08/31/2016 | The impeachment of President Rousseff is approved by the Senate. Rousseff's mandate is revoked. |
| 05/17/2017 | The plea bargain deals signed by executives of JBS company. The audio leaked of a compromising conversation between Michel Temer (President at the time) and one of the executives of JBS. |
| 12/09/2018 | The truckers' strike brought the country to a halt, affecting production performance and GDP. After the strike, the government started to subsidize the price of diesel, as the president of Brazil fired the president of Petrobras. The dollar and the stock market suffered oscillations, motivated by internal and external factors, such as the October elections and the trade war between the United States and China. |
| 08/09/2019 | After the inauguration on January 1, 2019 of the new president of Brazil - Jair Messias Bolsonaro - brought the country the opportunity to improve security, maintain the balance of the economy and education investment. However, with little time in office the state showed the weakness of the economy in the sectoral indices released by IBGE, which fell far short of what was expected in 2019, so the industry caved 2.7% and the service provision drop back only 0.6%, as did trade. |
| 13/03/2020 | Brazil's economy is ranked by the International Monetary Fund (IMF) as the ninth largest economy in the world, but is expected to fall to 12th in the 2020 ranking. The last annual GDP update (for 2019) was R$7.3 trillion. GDP closed the first half of 2020 with a drop of 11.9% and a variation of -3.4% in the third quarter. Industry as a whole represents 21.4% of Brazil's GDP, but accounts for 70.1% of exports of goods and services, 69.2% of business investment in research and development, and 33% of federal taxes (excluding social security revenues). According to the new ECLAC projections, as a consequence of the strong economic recession in the region, which will register a -7.7% drop in the GDP, it is estimated that in 2020 the extreme poverty rate will stand at 12.5% and the poverty rate will reach 33.7% of the population. The report indicates that the adverse effect of the pandemic on people's income mainly affects the low and lower-middle income strata. It is estimated that by 2020 about 491 million Latin Americans were living with incomes up to three times the poverty line. About 59 million people who in 2019 belonged to the middle strata have undergone a process of downward economic mobility, and 2020 reaches almost 15 million unemployed. |

Source: Prepared by the authors (2020).

A large body of literature in finance has used event studies to quantify the market reaction to the announcement of corporate news in the WSJ. This literature has examined a wide variety of issues, including the announcement of stock splits, equity issues, credit rating downgrades (e.g., for review articles, see Kothari and Warner (2007) and MacKinlay (1997).

The companies listed on the Ibovespa meet the sample selection criterion adopted in the study, including liquidity, economic representativeness, and connections with the investigated events. Whenever the index presented a single company's common and preferred stocks, we selected those that give voting rights, i.e., common stocks. By choosing only one type of stock, we seek to avoid possible correlations among returns that could compromise the statistics (Campbell et al., 1997).

If, for some reason, a stock belonging to the Ibovespa index had become unavailable or suspended for trading during the investigated period, it would be replaced with the current common stock, preferentially or with the current preferred stock, in case the common was a low-volume stock. However, these situations did not occur during the investigated periods, meaning that none of these maneuvers had to be done.

The event on 08/05/2011 had 50 stocks and the events on 03/16/2016, 08/31/2016, 05/17/2017, 12/09/2018, 08/09/2019 and 10/09/2020 had 59 stocks each. The following table (Table 6) enlists the events and the stocks.

Table 6 - List of stocks and events

| Number / Event | 08/05/2012 | 03/16/2014 | 08/31/2016 | 09/12/2018 | 09/08/2019 | 09/10/2020 |
|---|---|---|---|---|---|---|
| 1 | BBAS3 | ABEV3 | ABEV3 | ABEV3 | ABEV3 | ABEV3 |
| 2 | BBDC3 | BBAS3 | BBAS3 | BBAS3 | BBAS3 | BBAS3 |
| 3 | BRAP4 | BBDC3 | BBDC3 | BBDC3 | BBDC3 | BBDC3 |
| 4 | BRFS3 | BBSE3 | BBSE3 | BBSE3 | BBSE3 | BBSE3 |
| 5 | BRKM5 | BRAP4 | BRAP4 | BRAP4 | BRAP4 | BRAP4 |
| 6 | BRML3 | BRFS3 | BRFS3 | BRFS3 | BRFS3 | BRFS3 |
| 7 | BVMF3 | BRKM5 | BRKM5 | BRKM5 | BRKM5 | BRKM5 |
| 8 | CCRO3 | BRML3 | BRML3 | BRML3 | BRML3 | BRML3 |
| 9 | CIEL3 | BVMF3 | BVMF3 | BVMF3 | BVMF3 | BVMF3 |
| 10 | CMIG4 | CCRO3 | CCRO3 | CCRO3 | CCRO3 | CCRO3 |
| 11 | CPFE3 | CIEL3 | CIEL3 | CIEL3 | CIEL3 | CIEL3 |
| 12 | CPLE6 | CMIG4 | CMIG4 | CMIG4 | CMIG4 | CMIG4 |
| 13 | CSAN3 | CPFE3 | CPFE3 | CPFE3 | CPFE3 | CPFE3 |
| 14 | CSNA3 | CPLE6 | CPLE6 | CPLE6 | CPLE6 | CPLE6 |
| 15 | CYRE3 | CSAN3 | CSAN3 | CSAN3 | CSAN3 | CSAN3 |
| 16 | ECOR3 | CSNA3 | CSNA3 | CSNA3 | CSNA3 | CSNA3 |
| 17 | TBLE3 | CYRE3 | CYRE3 | CYRE3 | CYRE3 | CYRE3 |
| 18 | ELET3 | ECOR3 | ECOR3 | ECOR3 | ECOR3 | ECOR3 |
| 19 | EMBR3 | EGIE3 | EGIE3 | EGIE3 | EGIE3 | EGIE3 |
| 20 | ENBR3 | ELET3 | ELET3 | ELET3 | ELET3 | ELET3 |
| 21 | EQTL3 | EMBR3 | EMBR3 | EMBR3 | EMBR3 | EMBR3 |
| 22 | ESTC3 | ENBR3 | ENBR3 | ENBR3 | ENBR3 | ENBR3 |
| 23 | FIBR3 | EQTL3 | EQTL3 | EQTL3 | EQTL3 | EQTL3 |
| 24 | FLRY3 | ESTC3 | ESTC3 | ESTC3 | ESTC3 | ESTC3 |
| 25 | GGBR4 | FIBR3 | FIBR3 | FIBR3 | FIBR3 | FIBR3 |
| 26 | GOAU4 | FLRY3 | FLRY3 | FLRY3 | FLRY3 | FLRY3 |
| 27 | HYPE3 | GGBR4 | GGBR4 | GGBR4 | GGBR4 | GGBR4 |
| 28 | IGTA3 | GOAU4 | GOAU4 | GOAU4 | GOAU4 | GOAU4 |
| 29 | ITSA4 | HYPE3 | HYPE3 | HYPE3 | HYPE3 | HYPE3 |
| 30 | ITUB4 | IGTA3 | IGTA3 | IGTA3 | IGTA3 | IGTA3 |
| 31 | JBSS3 | ITSA4 | ITSA4 | ITSA4 | ITSA4 | ITSA4 |
| 32 | KLBN4 | ITUB4 | ITUB4 | ITUB4 | ITUB4 | ITUB4 |
| 33 | LAME4 | JBSS3 | JBSS3 | JBSS3 | JBSS3 | JBSS3 |
| 34 | LREN3 | KLBN11 | KLBN11 | KLBN11 | KLBN11 | KLBN11 |
| 35 | MRFG3 | KROT3 | KROT3 | KROT3 | KROT3 | KROT3 |
| 36 | MRVE3 | LAME4 | LAME4 | LAME4 | LAME4 | LAME4 |
| 37 | MULT3 | LREN3 | LREN3 | LREN3 | LREN3 | LREN3 |
| 38 | NATU3 | MGLU3 | MGLU3 | MGLU3 | MGLU3 | MGLU3 |
| 39 | PCAR4 | MRFG3 | MRFG3 | MRFG3 | MRFG3 | MRFG3 |
| 40 | PETR3 | MRVE3 | MRVE3 | MRVE3 | MRVE3 | MRVE3 |
| 41 | RADL3 | MULT3 | MULT3 | MULT3 | MULT3 | MULT3 |
| 42 | RENT3 | NATU3 | NATU3 | NATU3 | NATU3 | NATU3 |
| 43 | SANB11 | PCAR4 | PCAR4 | PCAR4 | PCAR4 | PCAR4 |
| 44 | SAPR4 | PETR3 | PETR3 | PETR3 | PETR3 | PETR3 |
| 45 | SBSP3 | QUAL3 | QUAL3 | QUAL3 | QUAL3 | QUAL3 |
| 46 | TIMP3 | RADL3 | RADL3 | RADL3 | RADL3 | RADL3 |
| 47 | USIM5 | RAIL3 | RAIL3 | RAIL3 | RAIL3 | RAIL3 |
| 48 | VALE3 | RENT3 | RENT3 | RENT3 | RENT3 | RENT3 |
| 49 | VIVT4 | SANB11 | SANB11 | SANB11 | SANB11 | SANB11 |
| 50 | WEGE3 | SAPR4 | SAPR4 | SAPR4 | SAPR4 | SAPR4 |
| 51 | | SBSP3 | SBSP3 | SBSP3 | SBSP3 | SBSP3 |
| 52 | | TAEE11 | TAEE11 | TAEE11 | TAEE11 | TAEE11 |
| 53 | | TIMP3 | TIMP3 | TIMP3 | TIMP3 | TIMP3 |
| 54 | | UGPA3 | UGPA3 | UGPA3 | UGPA3 | UGPA3 |
| 55 | | USIM5 | USIM5 | USIM5 | USIM5 | USIM5 |
| 56 | | VALE3 | VALE3 | VALE3 | VALE3 | VALE3 |
| 57 | | VIVT4 | VIVT4 | VIVT4 | VIVT4 | VIVT4 |
| 58 | | VVAR11 | VVAR11 | VVAR11 | VVAR11 | VVAR11 |
| 59 | | WEGE3 | WEGE3 | WEGE3 | WEGE3 | WEGE3 |

Source: Prepared by the authors (2020).

It is necessary to measure the abnormal return. The abnormal return refers to the actual ex-post return of a stock over the event window minus the company's expected return over the event window. According to Campbell et al., 1997, the average return is defined as "the return that would be expected if the event did not take place." Therefore, the first procedure carried out to determine the impact of the investigated events was to measure the abnormal return employing the following equation:

$$R_{it}=Ln(P_t/P_{(t-1)})$$

Where,

$R_{it}$ is the nominal return of the company i, for time period t;

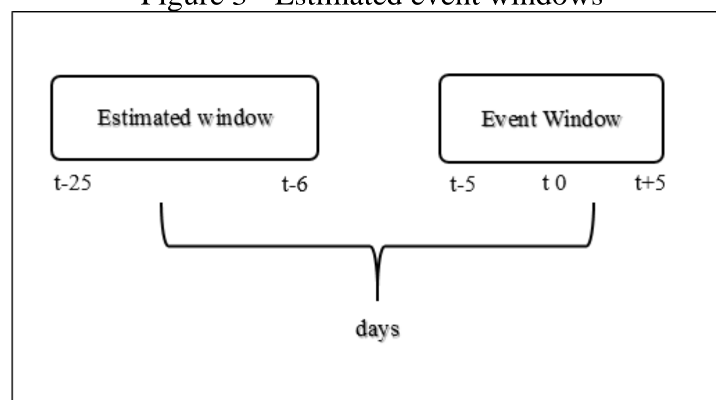
$P_t$ is the stock price of the company for time period t, adjusted for the period earnings;

$P_{(t-1)}$ is the closing price of the stock at t-1, adjusted for the period earnings.

Subsequently, to measure the abnormal return, it is necessary to establish an event window. The present study measured abnormal returns over an 11-day event window [five days before and after the event date]. Figure 3 illustrates the event window. The methodology examines the stock price reaction around the announcement of an event. It is common practice to use the publication date of the corresponding WSJ article as the event date (day 0). Furthermore, there is a possibility that the event documented in the WSJ article may have happened on the previous day by including the previous trading day (day –1) in the event window (see MacKinlay, 1997).

This two-day event window is denoted by (1, 0)—verification of an event impact on the stock price before or after the two-day event window. I also considered the time intervals (40, 21), (20, 11), (10, 6), (5, 2) prior to, and the time intervals (1, 5), (6, 20) after the event window. In robustness checks, I also considered the event windows (1, 1), (1, 2), and (1, 3). For each firm i, I computed the abnormal returns using the market model.

Figure 3 - Estimated event windows




Source: Adapted from Campbell et al. (1997, p. 157).

In the same line of previous studies (Belo and Brasil, 2006; Lana and Gama, 2016), we decided to use the adjusted market return model, in which the abnormal return is the difference between the initial return and the corresponding market return (Ibovespa). The abnormal return was calculated by means of the formula:

$$〖RA〗_{it}= R_{it}- R_{mt}$$

Were:

$〖RA〗_{it}$ is the adjusted market return;

$R_{it}$ is the actual return on stock; and

$R_{mt}$ is the return on market portfolio.

The following step was to calculate the cumulative abnormal returns (CARs). The CARs is used to describe the relationship between the expected value of a stock given the performance of the market as a whole and the stock's actual value. In this study we considered the CARs for the t + 1 to t + 5 and used the following formula.

$$CAR_{it} = CAR_{(t-1)} + AR_{it}$$

Where:

$CAR_{it}$ is the cumulative abnormal returns of the company i for the period t;

$CAR_{(1-t)}$ is the cumulative abnormal returns for the period t-1 of the company i;

$AR_{it}$ is the abnormal return of the company i for the period t.

Regarding the statistical approach adopted, initially we analyzed the kurtosis and the asymmetry of each abnormal return and of the cumulative abnormal return. Since there was no evidence of normalities, we did not use the z- or t-tests that allows testing of average return. In this scenario, we decided to run the Wilcoxon rank-sum test (Bland, 2000). In this nonparametric test, the statistics for the null hypothesis was measured by the difference between the abnormal returns. In this scenario, we decided to run the Wilcoxon rank-sum test (Bland, 2000). In this nonparametric test, the statistics for the null hypothesis was measured by the difference between the abnormal returns and the CARs of the companies with or without government participation. Using a normal approximation the value of the critical z is determined by:

$$Z = \frac{T - E(T)}{\sqrt{Var(T)}}$$

Were:

T is determined by $\sum_{i=1}^{n1} R_{1t}$, (the sum of the ranks assigned to the sample).

It is worth to mention that by choosing the adjusted market return model, the normal approximation and, consequently, the estimation window t-25 to t-6, did not contemplate the procedures of the present study.

## 4. Results

This section presents the results of the experiment conducted to determine the economic impacts of events announced by the media on the price of Brazilian companies' stocks and whether the government as a shareholder plays a role in minimizing the impacts. It begins with a descriptive analysis of the statistical findings, followed by a discussion.

Initially, information about the ownership structure of the investigated companies at the time of the investigated events was collected and systematized The following table (Table 7) provides information regarding the investigated companies and the basic descriptive statistics for each criterion of government participation in their ownership. It is noteworthy that the sample of companies in events 2 and 3 is the same; therefore, the statistics were grouped.

There are 50 companies in events 1 and 59 in events 2, 3, and 4. Regarding the characteristics of the ownership structure and taking into account all types of equity distribution, the average percentage of participation of the Brazilian government in each of the events is 32%, 40%, 41% (Column 2).

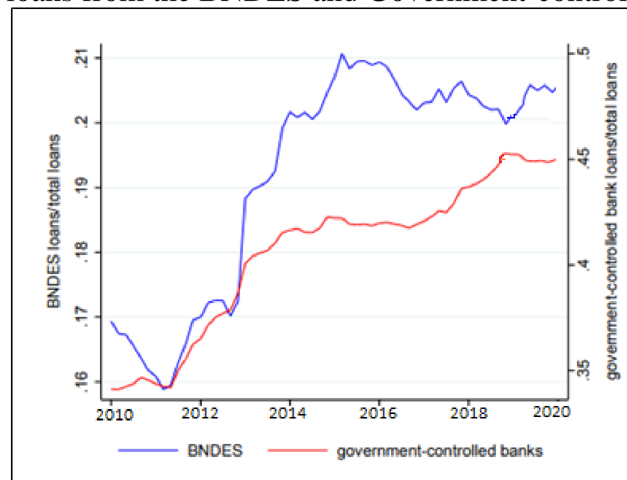
Table 7 - The Brazilian government as a shareholder

| Events | (1) Number of companies | (2) Average shares | (3) Stand. Dev. | (4) Min. Shares | (5) Max. Shares |
|---|---|---|---|---|---|
| **Event 2 and 3** | | | | | |
| Government | 20 | 40.42 | 26.22 | 2.300 | 85.04 |
| Gov. Majority | 8 | 68.16 | 10.56 | 50.26 | 85.04 |
| Gov. Minority | 6 | 10.90 | 6.358 | 2.300 | 19.62 |
| Gov. National/Local | 12 | 47.84 | 17.93 | 10.37 | 74.97 |
| BNDES | 11 | 15.76 | 9.276 | 2.300 | 29.08 |
| Pension Funds | 6 | 10.15 | 8.027 | 0.140 | 22.36 |
| Total Companies | 59 | | | | |
| **Event 4** | | | | | |
| Government | 19 | 41.62 | 27.95 | 2.300 | 89.84 |
| Gov. Majority | 8 | 69.93 | 12.91 | 50.26 | 89.84 |
| Gov. Minority | 5 | 9.143 | 6.291 | 2.300 | 16.42 |
| Gov. National/Local | 11 | 50.57 | 21.11 | 4.922 | 89.84 |
| BNDES | 11 | 16.12 | 10.81 | 2.300 | 32.54 |
| Pension Funds | 5 | 11.43 | 8.043 | 0.200 | 22.07 |
| Total Companies | 59 | | | | |

Source: Research data.

Regarding the companies in which the government is a majority shareholder (directly or indirectly), the average percentage of stakes held is 64%, 68%, and 69%. However, considering this criterion, concerning the investigated events, the average percentage is 14% in event 1 and 13.56% in events 2, 3, and 4. The number of companies in which the government is a minority shareholder is nine in event 1, six in events 2 and 3, and five in event 4.

Figure 4: Shares of loans from the BNDES and Government-controlled (% of total loans)




Source: Research data.

At first, the government's response to the slowdown of the Brazilian economy was as standard: it reduced interest rates and lowered taxes. Soon, however, the government resorted to less orthodox economic policies. In March 2010, the Minister of Finance announced that Brazil's development bank, BNDES, would play a significant role in avoiding a credit crunch, accordingly, the share of BNDES's loans in the outstanding loans of Brazil's banking sector jumped from 15.9% in August 2008 to 20% in less than two years (see Figure 4).

Brazil's expansionary policies paid off in 2010, with a GDP growth of 7.53%. The economy's recovery contributed to the election in November 2010 the candidate of the incumbent Workers' Party, Ms. Dilma Rousseff, as Brazil's new President. President Rousseff took power in January 2011, maintaining the program of former President Luiz Ignacio Lula da Silva, "Bolsa Familia."

A loose fiscal policy and the expansion of subsidized credit to particular segments of the economy were also maintained. Nevertheless, the Brazilian economy performed poorly in 2011 and 2012. GDP growth fell from 7.53% in 2010 to 2.73% in 2011 and 0.87% in 2012. In the meantime, inflation remained relatively high: 4.31% in 2009, 5.91% in 2010, 6.5% in 2011, and 5.84% in 2012.

Pressured by low growth and high inflation, President Rousseff intervened in the private sector in various ways. Although she halted the growth of BNDES loans after taking power in January 2011, government-controlled banks' growth persisted to boost consumption. President Rousseff ordered two government-controlled commercial banks, Banco do Brasil and Caixa Economica Federal, to increase credit supply at reduced interest rates. The share of loans from government-controlled banks, including the BNDES loans, jumped from 41.8% in January 2011 to 47.9% in December 2012 and contrast, the Brazilian government privately holds Caixa Economica Federal. Banco do Brasil is a public financial institution listed on BM&FBovespa's New Market, a particular segment of the Sao Paulo Stock Exchange that, in principle, is restricted to corporations committed to stricter governance rules.

In summary, the government controls a firm if it holds (directly or indirectly) at least 20% of its voting shares. To implement this rule, we consider that the fraction of voting shares in the government's hands include

1. voting shares owned by Federal, State, and Municipal Governments,
2. voting shares in the hands of BNDESPAR (the subsidiary of BNDES for joint ventures with the private sector),
3. voting shares of firms controlled (directly or indirectly) by Federal, State, or Municipal Governments,
4. Voting shares of pension funds sponsored by companies controlled (directly or indirectly) by Federal, State, or Municipal Governments.

Economatica is the dominant source of information on the government's voting shares in public firms. Suppose we find a private (unlisted) company in the control chain of a pyramid. In that case, we look for the firms' ownership structure at the firm's website and gatekeeping websites that provide such information about Brazilian firms. If we do not find ownership information, we count the government's fraction of voting shares as missing in the original public firm.

The indirect participation of the state through the development bank BNDES was spotted in ten companies in Event 1 and 11 companies in events 2, 3, and 4. It is essential to highlight that, through the BNDES, the Brazilian government shareholding usually ranges from 5% (Event 1) to 32% (Event 4). Through pension funds, the percentages are similar. For example, in Event 1, through pension funds, the government held an average of 13% of the shares, and the highest shareholding percentage was 22%.

Table 7 reveals, at many levels, what Lazzarini (2011) has already observed regarding the Brazilian government's participation in the companies and its interference as a shareholder in post-privatization times.In other words, the data suggest that the State continues to influence the companies after the trade liberalization. The abnormal return followed the adjusted market return model, which measured the difference between nominal and market returns (Ibovespa). To test the effects of the cumulative abnormal return of the companies in the investigated period, we measured the CARs from t+1 to t+5. By respecting the non-normality of the abnormal returns and cumulative abnormal returns, we decided to perform the nonparametric Wilcoxon rank-sum test.

The results regarding each event are presented in the following tables (Tables 8, 9, 10, 11, and 12). Each table presents the average abnormal returns [Abnormal Return], the abnormal returns [AR –Window], the cumulative abnormal return [CAR – Window], and the daily cumulative abnormal returns [CARs]. Tables 9 to 12 show the difference between the average

abnormal returns of companies with government shareholding and the other Ibovespa companies in each event. For a better understanding of this matter, it is detailed that for Abnormal Return, the base is the event day, for AR (Window) and CAR (Window), the base is the event window, and finally, the CARs the basis is from event day until the following fifth day: CAR 1, CAR 2, CAR 3, CAR 4 and CAR 5.

Analyzing the findings obtained, Event 4 presented more robust results, according to data compiled in Table 8. Specifically, this occurs regarding the variables that define the criterion of government minority shareholding and majority control. For example, when the government has a minority stake, i.e., less than 20%, the difference in average cumulative returns, CAR 1 to CAR 5, is positive and significant. On the other hand, when the government has a majority stake, the differences are negative, indicating that the market has depreciated the value of these firms. It is noteworthy that, under this criterion, only the average cumulative returns CAR 1 to CAR 4 were significant.

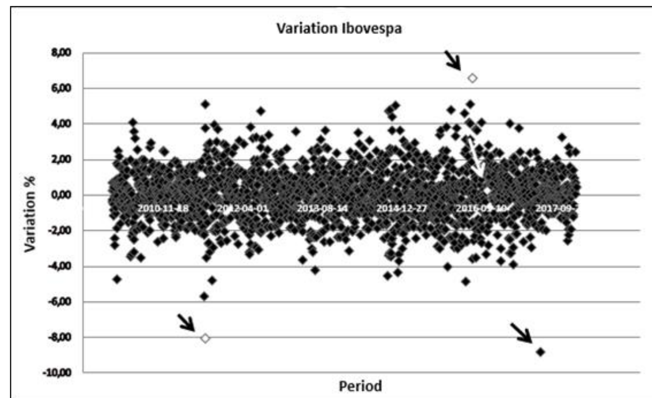
Table 8 - Minority stakeholding and majority control – Event 4

| Government Minority Stakeholding | | | |
|---|---|---|---|
| **Return** | **Government** | **Others** | **Dif.** |
| Abnormal Return | 0.89 | 0.89 | 0.00 |
| AR (Window) | 0.03 | 0.02 | 0.01 |
| CAR (Window) | 2.02 | 1.99 | 0.04 |
| CAR_1 | 5.15 | 5.07 | 0.09*** |
| CAR_2 | 6.11 | 6.05 | 0.06** |
| CAR_3 | 6.40 | 6.29 | 0.11*** |
| CAR_4 | 4.68 | 4.59 | 0.10** |
| CAR_5 | 4.84 | 4.76 | 0.08** |
| **Government Majority Control (TOTAL)** | | | |
| **Return** | **Government** | **Other** | **Dif.** |
| Abnormal Return | 0.89 | 0.89 | 0.00 |
| AR (Window) | 0.02 | 0.03 | 0.00 |
| CAR (Window) | 1.97 | 1.99 | -0.02 |
| CAR_1 | 5.01 | 5.08 | -0.07** |
| CAR_2 | 6.00 | 6.06 | -0.06** |
| CAR_3 | 6.24 | 6.31 | -0.07** |
| CAR_4 | 4.54 | 4.60 | -0.06** |
| CAR_5 | 4.73 | 4.77 | -0.04 |

Source: Research data.

Figure 5 presents the variation of Ibovespa on the first working day following the media's announcement of an event. In the first event, announced on 08/05/2011, the variation was -8.09% [Standard & Poor's downgrades Brazil's long-term sovereign credit rating from AAA to AA+]. The second event was announced on 16/03/2016, resulting in an index variation of +6.60% [The release of a wiretapped phone call between Dilma Rousseff e Lula]. In the third event, announced on 31/08/2016, the Ibovespa variation was +0.58% [The Senate approves the impeachment of President Rousseff. Rousseff's mandate is revoked]. Finally, the variation resulting from the fourth event, on 05/17/2017, was -8.80% on the day following its announcement [The plea bargain deals signed by executives of JBS company. The audio leaked of a compromising conversation between President Michel Temer and one of the executives of JBS].

Figure 5 - Events and Ibovespa index variation




Source: Prepared by the authors (2020).

In the benchmark model, we allow for the effect on the voting premium of the share of loans from government-controlled banks to vary across three groups:

1. Firms where the government controls less than 20% of the voting shares; 2. Firms where the government controls at least 20% but less than 50%; and 3. Firms where the government controls at least 50% of the voting shares

These thresholds are widely used in the corporate governance literature to define who is in the controlling group (20% threshold) and who has unilateral control over business decisions (50% threshold). Nonetheless, it is easy to think of examples in which these thresholds do not determine whether there is unilateral control or an investor belongs to the control group.

Shareholders' agreements, for instance, may require a supermajority in merger decisions, preventing majority shareholders from controlling the firm unilaterally. In the other extreme, 10% of the voting shares may give an investor a control position in firms with very dispersed ownership structures. Measurement errors in the thresholds of the benchmark model may therefore bias the estimation of the effects of the share of loans from government-controlled banks. To address this concern, we extend model (12) to allow for heterogeneous effects on different intervals of the government's equity holdings: 0% to 10%, 10% to 20%, 20% to 50%, 50% to 60%, and 60% to 100%.

Considering that the media announced the investigated events, some comments need to be made. Studies such as Pollock and Rindova (2003), Johnson et al. (2005), King and Soule (2007), and King's (2008) are reinforced by the statistical findings presented in Tables 8, 9, 11, and 12. These are studies that the media strongly influences investors and the stock markets.

Table 9 - Event 1 – Abnormal returns

| Government Majority Control (TOTAL) | | | |
|---|---|---|---|
| **Return** | **Government** | **Others** | **Dif.** |
| Abnormal Return | 0.04 | 0.05 | -0.01 |
| AR (Window) | 0.42 | 0.42 | 0.00 |
| CAR (Window) | 3.37 | 3.38 | -0.01 |
| CAR_1 | 5.64 | 5.64 | 0.01 |
| CAR_2 | -1.44 | -1.44 | 0.00 |
| CAR_3 | 0.36 | 0.38 | -0.02 |
| CAR_4 | -1.60 | -1.56 | -0.03 |
| CAR_5 | -2.14 | -2.09 | -0.04* |
| **Government BNDES** | | | |
| **Return** | **Government** | **Others** | **Dif.** |
| Abnormal Return | 0.04 | 0.05 | -0.01 |
| AR (Window) | 0.42 | 0.43 | -0.01 |
| CAR (Window) | 3.33 | 3.39 | -0.06 |
| CAR_1 | 5.60 | 5.65 | -0.05* |
| CAR_2 | -1.48 | -1.43 | -0.05*** |
| CAR_3 | 0.33 | 0.39 | -0.06** |
| CAR_4 | -1.62 | -1.55 | -0.06* |
| CAR_5 | -2.15 | -2.08 | -0.07** |

Note: ***, **, * were significantly correlated at 0.01 level (bilateral), 0.05 level (bilateral) and 0.1 level (bilateral), respectively.
Source: Research data.

Particularly regarding the government's indirect participation through BNDES, the impact of state-owned companies is negative. The results presented by Lazzarini and Musacchio (2010) do not follow the same path. These authors analyzed BNDES minority interest in companies, studying 296 companies traded on the São Paulo Stock Exchange between 1995 and 2003.

About this particular, when analyzing the other events (Tables 10, 11, and 12), it is possible to state that only in international news of economic and financial nature the indirect participation of the government shareholder, through The BNDES generates a negative impact on the stock price after the media announced the event.

Table 10 - Event 2 – Abnormal returns

| Government BNDES | | | |
|---|---|---|---|
| Return | Government | Others | Dif. |
| Abnormal Return | 0.09 | 0.08 | 0.01 |
| AR (Window) | 0.01 | 0.02 | 0.00 |
| CAR (Window) | -0.48 | -0.49 | 0.01 |
| CAR_1 | -2.28 | -2.27 | 0.00 |
| CAR_2 | -0.63 | -0.62 | -0.01 |
| CAR_3 | -2.30 | -2.29 | -0.01 |
| CAR_4 | -2.35 | -2.34 | -0.01 |
| CAR_5 | -3.77 | -3.75 | -0.01 |

Source: Research data.

Results in Table 10 suggest that Event 2 [The leakage of a wiretapped conversation between Dilma and Lula] was not statistically significant. In Event 3 [The impeachment of President Rousseff is approved by the Senate. Rousseff's mandate is revoked], Table 11 shows two points of significance of 99% certainty when the control of the government shareholder is the majority. These points are CAR 2 and CAR 5. The most critical information observed on this occasion is that when government shareholder ownership is a majority, the impact is positive on stock prices within five days of the event. It is worth highlighting the internal and political origin of the third event released by the media.

Table 11 - Event 3 – Abnormal returns

| Government Majority Control (TOTAL) | | | |
|---|---|---|---|
| Return | Government | Others | Dif. |
| Abnormal Return | 0.25 | 0.25 | 0.00 |
| AR (Window) | -0.19 | -0.19 | 0.01 |
| CAR (Window) | -1.01 | -1.02 | 0.02 |
| CAR_1 | -2.24 | -2.24 | 0.00 |
| CAR_2 | -3.06 | -3.08 | 0.02*** |
| CAR_3 | -3.27 | -3.29 | 0.02 |
| CAR_4 | -3.86 | -3.88 | 0.02 |
| CAR_5 | -3.85 | -3.88 | 0.03*** |
| **Government BNDES** | | | |
| Return | Government | Others | Dif. |
| Abnormal Return | 0.25 | 0.25 | 0.00 |
| AR (Window) | -0.19 | -0.19 | 0.00 |
| CAR (Window) | -1.02 | -1.02 | 0.01 |
| CAR_1 | -2.23 | -2.24 | 0.01* |
| CAR_2 | -3.07 | -3.08 | 0.01 |
| CAR_3 | -3.29 | -3.28 | 0.00 |
| CAR_4 | -3.88 | -3.88 | -0.01 |
| CAR_5 | -3.87 | -3.88 | 0.01 |

Source: Research data.

As already stated (Table 8), Event 4 was the statistically significant study of this study. The government's interest is relevant as a minority and majority shareholder. Although the former had a positive and the latter a negative impact on the stock prices. Some of the findings of Lazzarini and Musacchio (2010) and Wu (2011) were reinforced in the first situation. The market shows that it accepts the government shareholder without the company's control. Regardless of the source of the investment or the resource invested, the percentage is

significant. This evidence demonstrates that the market understands that the government can indirectly influence decision-making (Singh and Pillai, 2022).

Table 12 - Event 4 – Abnormal returns

| Government BNDES | | | |
|---|---|---|---|
| Return | Government | Others | Dif. |
| Abnormal Return | 0.89 | 0.89 | -0.01 |
| AR (Window) | 0.02 | 0.03 | 0.00 |
| CAR (Window) | 1.99 | 1.99 | 0.00 |
| CAR_1 | 5.10 | 5.07 | 0.03 |
| CAR_2 | 6.07 | 6.05 | 0.02 |
| CAR_3 | 6.31 | 6.29 | 0.02 |
| CAR_4 | 4.61 | 4.59 | 0.02 |
| CAR_5 | 4.78 | 4.76 | 0.01 |

Source: Research data.

It is essential to highlight the three political events announced by the media, and two had an impact when the government is a majority shareholder. However, the direction of impact is not the same. Event 3 had a positive impact, while Event 4 had a negative. In addition, even with only 90% certainty, Event 1 was of international economic and financial nature. On the other hand, when the majority shareholding of the government as a shareholder harmed the CAR 5 share price, the accumulated abnormal prices at the end of the window. Thus, it directs that the majority shareholding of the government shareholder negatively impacts the stock price, most of the time (Dakhli, 2021).

In general lines, it became clear in this study that the existence of pension funds as a shareholder does not affect companies' stock prices. On the occasion of no events being reported by the media, indirect participation of the same object generated statistical significance.

In the general context, the results align with the studies presented by Chhibber and Majumdar (1998). The analysis of companies listed on the Bombay Stock Exchange, India, found that assets and sales are lower in state-owned companies than in uncontrolled companies. Table 13 illustrates this interpretation.

Table 13 - Summary of the differences between the abnormal returns

| Event / State Participation | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Government | (-) | # | # | # | (-) |
| Gov. Min. | (-) | # | # | (+) | (+) |
| Gov. Maj. | (-) | # | (+) | (-) | # |
| Nat. / Loc. | (-) | # | # | (-) | # |
| BNDES | (-) | # | (+) | # | (+) |
| Pension Funds | # | # | # | # | # |

Legend: (-) = negative impact (+) = positive impact # = not relevant

Source: Prepared by the author (2020).

In this paper, we show that the outbreak of the subprime crisis led the Brazilian government to a series of interventions in the private sector that explain 60.4% of a massive drop of 15.6 percentage points in the voting premium of firms that have the government as a controlling shareholder. In principle, one might think that the voting premium went down in these firms because the interventions induced the boards to monitor the managers and control shareholders more tightly. After all, we reject the hypothesis that the reduction of the voting premium

increases with the size of the government's control equity stake. If the interventions induce the board to closely monitor managers and controlling shareholders, it should happen. In contrast, our model predicts that reductions of the voting premium do not increase with the size of the government's control stake if the lower voting premium is to the controlling shareholders' reluctance to seek minority votes to fight an increasingly interventionist government in a control battle (Kumpamool and Chancharat, 2022; Amorim, 2022).

We interpret these findings as evidence that the government's activism may harm minority votes if it aims to advance broader economic policies. From the perspective of the minority shareholders, the interventionist-led decline of the voting premium is a cost of the government's activism that adds to any loss of profits that the interventions may cause. Of course, our paper does not address several critical dimensions of the corporate governance consequences of having the government as a significant shareholder. It would be interesting to know, for instance, whether regulatory agencies magnify agency problems by acting more leniently when they face complaints by minority shareholders against government-controlled companies (Martins, Jeremias Junior and Enciso, 2019; Khalil, and Ben Slimene, 2021).

Analysis We chose the public utility companies listed in 2012, 2014, 2016, 2017, 2018, 2019 and 2020 (2021) action. After removing the ST plate, 59 valid sample companies were obtained as our research samples. The data selected in this article are derived from the CVM and BM&FBovespa databases. The correlation analysis of the variables of the model involved in this article is presented in Table 14:

Table 14 - Pearson correlation - Main variable relevance

| Coefficient | Vol | Gov | Gmaj | Gmin | Gnat | Bnd | Pf | Roa |
|---|---|---|---|---|---|---|---|---|
| Vol | 1 | | | | | | | |
| Gov | 0.104** | 1 | | | | | | |
| Gmaj | 0.163*** | -0.042 | 1 | | | | | |
| Gmin | -0.110** | 0.176*** | -0.086* | 1 | | | | |
| Gnat | 0.123** | 0.059 | -0.019 | 0.012 | 1 | | | |
| Bnd | -0.307*** | 0.216*** | -0.108** | 0.092* | 0.160** | 1 | | |
| Pf | 0.023** | 0.165*** | -0.088 | 0.160** | 0,182*** | 0,058 | 1 | |
| Roa | 0.112** | 0.192*** | 0.077 | 0.040 | -0.006 | 0.023 | 0,095 | 1 |

Note: ***, **, * were significantly correlated at 0.01 level (bilateral), 0.05 level (bilateral) and 0.1 level (bilateral), respectively.

Pearson correlation analysis shows no multicollinearity between the variables so that we can carry out regression analysis. The regression analysis results are shown in Table 15:

Table 15 - Regression results

| Variable Name | Coefficient | P | Collinearity Statistics | |
|---|---|---|---|---|
| | | | Tolerance | VIF |
| Constant | 45.591*** | 0.000 | ------- | ------- |
| Gov | 0.091*** | 0.011 | 0.895 | 1.118 |
| Gmaj | 1.082** | 0.038 | 0.975 | 1.026 |
| Gmin | -6.143** | 0.000 | 0.959 | 1.043 |
| Gnat | 12,15 | 0.000 | 0.973 | 1.088 |
| Bnd | 0.002*** | 0,028 | 0.919 | 1,215 |
| Pf | 2.239*** | 0.000 | 0,879 | 1.088 |
| Roa | 11.761* | 0,075 | 0.956 | 1.047 |

Note: ***, **, * were significantly correlated at 0.01 level (bilateral), 0.05 level (bilateral) and 0.1 level (bilateral), respectively.

The regression results in Table 15 show that: The regression coefficient of ownership

concentration is 0.091, and it is significant at 0.01 level, indicating that the greater the rights of large shareholders, the more likely to use the right to promote the stock price volatility, in order to get stock price spreads, this conclusion supports the first hypothesis of this paper; The regression coefficient of the ownership balance variable is 1.082, and it is significant at the 0.05 level, indicating that the restraint of other shareholders to the rights of significant shareholders did not reduce the volatility of the stock price of listed companies, on the contrary , making stock prices more volatile, because of more shareholders mean that more stock price space is needed to gain revenue to meet the interests of more shareholders, this conclusion supports the second hypothesis of this paper; The regression coefficient of the proportion of state shareholders is -6.143 and is significant at 0.05 level, indicating that the existence of state shareholders, can inhibit the level of stock price fluctuations in listed companies.

In addition, Thomsen and Pedersen (2000) sought to understand whether the identity of majority shareholders would influence corporate performance, such as return on assets, profitability, and effect on stocks. They concluded that ownership structure concentration and identity have important implications for strategy and corporate performance. Therefore, it is understood that the present study contributes to the same orientation in its results.

About government ownership, Berglund (2020) argued that in companies where the government owns the majority of equity, the government has an incentive and expertise to control the company closely and effectively at a lower cost, thus improving profitability and reducing agency cost.

However, Vijayakumaran (2019), Tian and Estrin (2007) argued that the government tends to be less proactive in controlling its investment. Additionally, because they can quickly get financial funding, state-owned companies have a poorer corporate control mechanism, which will increase agency costs.

According to Phung and Mishra (2016), in the context of Vietnam, this relationship is that these state-owned companies pursue both political and social objectives. The managers can use these goals as an excuse to violate management and ethical principles, which leads to heavy losses, not only for the government owner but also for the public interest. They use government subsidies and bribes to circumvent public policies for private gain. In other words, government ownership reduces firm performance and increases agency costs (Jansen, 2021).

Finally, the results presented are eloquent to the point of being confronted with the hypotheses of this study. The non-directional hypothesis H1 (There is a relationship between the government shareholder and the stock price of listed companies, following events reported by the media) was confirmed. The H2 directional hypothesis (The percentage of state ownership in ownership structure positively moderates the stock price of listed companies following events reported by the media) has not been validated (Koutoupis, Kyriakogkonas, Pazarskis, and Davidopoulos, 2021).

## 5. Conclusiones y discusión

This study analyzed the influence of the Brazilian state as a shareholder on the stock prices of the companies listed on the Ibovespa index, following political or economic events reported by the media. The study included the following steps: examining the behavior of the Ibovespa; learning the main economic-financial and political events that influenced the stock market; surveying the stock prices of the companies listed on the Ibovespa index; measuring the abnormal return on assets of the investigated companies; defining the participation of the Brazilian government as a shareholder in the investigated companies; and, finally, assessing the impacts of the disclosure of the events by the media on the stock prices.

The theoretical framework for this study included previous research on Agency Theory and Corporate Governance. In addition, studies addressed the impacts that some external drivers have on the stock market. The role of the media and the government as a shareholder contributed

to the formulation of this research.

The event study method revealed the performance and abnormal returns on assets of the investigated companies, ascertaining the market's reactions following the press's disclosure of four politics and economy-related events. The events were: Standard & Poor's downgraded Brazil's long-term sovereign credit rating from de AAA to AA+; the release of a wiretapped phone call between the former Presidents Dilma Rousseff e Lula; the impeachment of President Rousseff is approved by the Senate/Rousseff's mandate is revoked; and, the plea bargain deals signed by executives of JBS company/the audio leaked of a compromising conversation between the then President Michel Temer and one of the executives of JBS. This study compared the news impacts on companies' stocks with and without a government shareholding.

The investors' perception of companies is not the same when aware that the government can influence them. The connection of Brazil and its companies (whether or not state-owned) with the rest of the world makes most of the national events relevant worldwide. When disclosed, these events reassure corporate governance's relevance and mechanisms. As an internal mechanism, the investors consider the ownership structure when deciding the best ways of allocating their capital. Moreover, the identity of the shareholder, especially the government, proved to be a relevant factor for the investors' choices.

The ownership ratio of foreign shareholders is statistically significant, with an estimated coefficient of 0.021, consistent with our hypothesis and the previous studies of Xu and Wang (1999) and Vijayakumaran (2019). These foreign investors can act as effective controllers in Vietnamese listed companies, contributing to the reduction of agency costs (Huu Nguyen, Thuy Doan, and Ha Nguyen, 2020).

In 2011, the Brazilian government was a company's shareholder in 42%, in 2016 in 34%, and in 2017 in 32%; i.e., a decrease of 10 percentage points in six years. Even though the results are still in line with Lazzarini's (2011) regarding the participation and interference of the Brazilian government in the ownership of companies, it seems that both are decreasing in the post-trade liberalization times in Brazil.

Ownership by foreign investors also affects company agency costs. Xu and Wang (1999) pointed out that Chinese firms with a higher proportion of foreign investors have better control in management activities, resulting in higher company performance and lower agency costs. For emerging markets, compared to domestic shareholders, with the expertise and practice business knowledge, foreign investors play an important role in effectively monitoring and correctly managing discretions, according to Lu and Li (2019) and Vijayakumaran (2019). In particular, when foreign investors invest in a company, they take time to comprehend the different international and cultural contexts, to avoid business risks and protect their investment, which increases financial transparency.

To complement the previous interpretation, the participation of the government in the ownership structure of companies varied 28.5% between 2011 and 2020; when considering State's average ownership in the government variable (Medeiros and Codignoto, 2022). In addition, the government majority variable varied 7.7% in the same period, also when considering the average.

It is possible to assume a decrease in the number of companies with State investment. However, there is also an increase in the amount of capital/resources invested by the State in a particular company, suggesting that the Brazilian government may prioritize companies in terms of investment. It is also possible to interpret that the Brazilian has prioritized those companies that, in a way, can meet the political and economic needs and objectives of the management of the country. Directing the public resources to certain companies certainly favors addressing Brazilian organizational objectives. However, it seems worth speculating about migrating resources to closed capital companies. This attitude could further address the government's eagerness to intervene in the market without the pressure of other capital holders

or indicators of the Brazilian economy.

This study contributes to the influence of both government and media on the return on assets. Results suggested that the indirect participation of the government, using the BNDES, in the ownership structure of companies negatively affects the price of their stocks. Moreover, only international and economic-financial related news negatively affects the stock prices still regarding indirect participation. When observing stock market crashes and learning its probable cause, the behavior of the investors is to depreciate the companies in which BNDES is present. All these findings are understandable and in line with the existing literature, which suggests that investors fear government interference and capital expropriation in the face of a crisis, generating pessimism and resource migration.

At the end of the five days following the announcement of the event by the press, the cumulative abnormal returns of the companies with majority government shareholding (more than 50%) follow the curve of other companies. However, different results appeared from the market's perspective. In this period following the event, the control by the government shareholder can generate either optimism or pessimism in the investors depending on the market's direction (i.e., the market trend). The companies with State control are refuted when there is a negative perception of the event in the market and privileged when the perception is positive. Government interference does not give investors the idea of capital protection in adverse situations, but it does raise their business confidence when a boom is expected.

Another issue is that in the first trending day following an event, the cumulative abnormal returns of the companies with minority government shareholding (less than 20%) do not always move in the same direction as the general market. The source of the event may lead investors to a variety of possible decisions. In this case, the present study provided evidence that when the media discloses international, financial, and economic-related events, companies with state participation present an inferior performance when compared to others. However, when the news reports (events) are national, political, and economic-related events, government participation cushions the impact and protects companies' market value, making investors value them more than those without State participation. From this, it is possible to understand that the appreciation of the stocks is higher when the Brazilian government is a minority shareholder and the pandemic crisis triggered unprecedented changes in the manner the firms are governed and managed (Sivaprasad and Mathew, 2021).

Comparing the performances of the Brazilian state as a majority and as a minority shareholder – following a national, political, and economic-related event reported by the media – it is possible to affirm that: when the percentage of equities held by the State (directly or indirectly) grants companies' control, the event's impact is negative compared to other companies without government control. The opposite is also true. When the government's combined (direct or indirect) equity holdings do not grant majority control, the effect of the events on the price of the stocks is positive. Thus, it is demonstrated that on the occasion of stock market drops resulting from the announcement by the media of an unfortunate national political-related event. However, with repercussions in the market – a situation where the exit of capital is expected – the government's participation percentage is relevant. The presence of the government as a controlling shareholder in the ownership structure either intensifies the devaluation of stock prices or decreases appreciation. In contrast, the presence of the government as a minority controller either mitigates the adverse effects or boosts the positive ones.

It is also worth recapping the findings regarding pension funds. These, when used indirectly by the State in the ownership structure, are not statistically relevant and do not relate to variations in the price of the stocks following events reported by the media. In this study, specifically, the indirect participation of the Brazilian government in ownership structure through pension funds did not provide conclusions or contributions.

The results found in this study suggested that our goals were achieved. Hypothesis H1 was accepted, and hypothesis H2 was not accepted. Following the press release, the relationship between the Brazilian government as a shareholder and the stock prices of the investigated companies are clear. However, the percentage of State ownership in the ownership structure does not positively moderate the stock prices under the same circumstances. Therefore, the present study sought to fill the specialized theory in its shortcomings and assist investors, shareholders, and managers in better decision-making and value generation.

We recommend that researchers investigate the impacts of events not disclosed by the media on stock prices for future studies. Use other methods to measure the abnormal returns on assets, such as risk-adjusted returns, and expand the scope of the investigated sample to other emerging markets. Moreover, compare the sample with the developed markets, including other corporate governance mechanisms in the presented relationship; and engage other theories, such as the Institutional Theory, or confront other theories, such as the Stakeholders' Balance of Interest Theory.

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