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Relationship between the announcement of administrative sanctioning proceedings and CEO turnover

Relação entre divulgação de ações regulatórias de propósito sancionador e a rotatividade de CEO

Relación entre divulgación de acciones reguladoras con finalidad sancionadora y la rotación del CEO

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Abstract
This research aims to investigate the likelihood of forced CEO turnover in Brazil, based on the announcement of administrative sanctioning proceedings (PAS) conducted by the Brazilian Securities Commission (CVM). For this purpose, a sample of 272 Brazilian firms listed on the Brazilian Exchange B3 (*Brasil, Bolsa, Balcão*) and 121 PAS initiated and judged by CVM were considered from the period between 2011 and 2021. The analyses were conducted with the statistical techniques of binary and multinomial logistic regressions. The results indicate that the initiation – and subsequent announcement to the market – of PAS to investigate potential irregularities by economic agents in Brazilian listed companies increase the likelihood of CEO turnover. When analyzing heterogeneities in the types of CEO turnover analyzed, voluntary CEO turnover is more often, and no effects were perceived on the likelihood of forced CEO turnover compared to the likelihood of no turnover).
Keywords: CEO turnover; Regulatory Enforcement; Administrative Sanctioning Proceedings

Resumo
Esta pesquisa objetivou investigar a probabilidade de ocorrência de rotatividade forçada de CEO no contexto brasileiro, a partir da divulgação de ações regulatórias resultantes dos processos administrativos sancionadores (PAS) da Comissão de Valores Mobiliários (CVM). Para tanto, considerou-se uma amostra de 272 firmas brasileiras de capital aberto listadas na B3 (Brasil, Bolsa, Balcão) e 121 PAS instaurados e julgados pela CVM entre 2011 e 2021. As análises foram feitas por meio da utilização das técnicas estatísticas de Regressão Logística Binária e Multinomial. Os resultados apontam que a abertura – e consequente anúncio ao mercado – de PAS visando investigar potenciais irregularidades por agentes econômicos vinculados às companhias abertas brasileiras aumenta a probabilidade de ocorrência de rotatividade de CEO. Ao se analisar heterogeneidades na forma de saída destes CEOs, visualizou-se que tal evento é direcionado principalmente por saída voluntária do gestor; não se percebendo efeitos na probabilidade de saída forçada (tendo por base de comparação a possibilidade de retenção de CEO).
Palavras-chave: Rotatividade de CEO; *Enforcement* regulatório; Processos Administrativos Sancionadores

Resumen
Esta investigación tuvo como objetivo investigar la probabilidad de rotación forzada de CEO en el contexto brasileño, a partir de la divulgación de acciones regulatorias resultantes de Procesos Administrativos

Sancionadores (PAS) de la Comisión de Valores Mobiliarios (CVM) de Brasil. Para este propósito, se consideró una muestra de 272 empresas brasileñas listadas en B3 (*Brasil, Bolsa, Balcão*) y 121 PAS iniciados y juzgado por la CVM. Los análisis fueron realizados con las técnicas estadísticas de Regresión Logística Binaria y Multinomial. Los resultados indican que el inicio – y posterior anuncio al mercado – de PAS para investigar posibles irregularidades por parte de agentes económicos vinculados a empresas cotizadas en la bolsa brasileña aumenta la probabilidad de rotación de CEO. Al analizar las heterogeneidades en la forma de salida de estos CEOs, se observó que estos eventos son impulsados principalmente por salidas voluntarias; y no se percibieron efectos sobre la probabilidad de salida forzada (en comparación con la posibilidad de retención del CEO).
Palabras clave: Rotación de CEO; *Enforcement* regulatorio; Procesos Administrativos Sancionadores

1 Introduction

CEO turnover has gained the interest of researchers who seek to explain or predict its succession, focusing on the causes of the phenomenon and its potential effects. The interest in CEO turnover was triggered by the hypothesis that CEO tenure, earnings management, and corporate performance are interrelated and dependent on each other (Leker & Salomo, 2000).

Assuming that the likelihood and speed of CEO turnover are positively related to earnings management, Hazarika et al. (2012) found evidence that the magnitude of earnings management, and not its direction, increases the likelihood and speed of CEO turnover.

On the other hand, Leker and Salomo (2000) supported the hypothesis that CEO turnover and corporate performance are related. The authors proposed the need to differentiate the possible reasons for CEO turnover before attempting to validate non-current performance variations of turnover. They also discuss the lack of transparency in the actions and decisions of the CEO as a preponderant factor in the relationship between CEO turnover and the reported company performance.

Corporate performance and CEO actions and decisions need to be monitored by shareholders to limit conflicts of interest, a fundamental assumption that underlies the problems addressed by agency theory (Chakravarty & Zajac, 1984; Leker & Salomo, 2000). A conflict of interest occurs when shareholders and CEOs seek to maximize their own benefit to the detriment of the company (Jensen & Meckling, 1976; Eisenhardt, 1989; Girão & Machado, 2013). Thus, in accordance with the conflict of interests, CEOs take advantage of existing loopholes in legislation to achieve their personal objectives (Murcia & Santos, 2009).

Thus, there is a need for intervention from a regulatory and monitoring agency through the issuance of rules and regulations to reduce CEOs' opportunistic behaviors that are detrimental to the company's value. In this context, legal enforcement proposes that the efficiency of a national judicial system can support greater corporate governance in the business environment, both in developed and developing countries (Berglöf & Claessens, 2006).

In Brazil, the *Comissão de Valores Mobiliários* (CVM) is a regulatory and monitoring agency responsible for controlling and regulating the securities market (Assaf Neto, 2010). Furthermore, CVM's administrative proceedings, such as the administrative sanctioning proceedings (known as PAS), impose sanctions on physical and legal persons who commit illegal actions (Medauar, 1993; Smetana, 2015).

Over the years, CVM's PAS have been classified into three types of processes: ordinary, summary, and simplified. The distinction among them lies in the duration and penalty applied (Borges & Andrade, 2019). Summary PAS have been discontinued since 2017 and replaced by the simplified PAS to investigate objective and less complex infractions. The substitution aimed to separate the roles of the accuser and judge within the proceedings, which were centralized in the same team in the case of summary PAS. Ordinary PAS apply to complex and subjective cases (CVM, 2014, 2017).

For PAS established before 2017, there were different values of the fines CVM could apply, depending on the procedure adopted, with a maximum of BRL 100,000 for summary PAS and up to BRL 500,000 (or up to three times the amount of economic advantage obtained by illicit activity under investigation) for ordinary PAS. After the simplified PAS replaced the summary proceedings, the distinction in the value of the fines was abolished, and the maximum limits for all proceedings became the same (CVM, 2014, 2017, 2021).

The administrative penalties imposed by the CVM are defined in Article 11 of Law 9457/97, Article 11 of Law 6385/76, and Article 130 of Law 8112/90 (Brasil, 1997). These penalties include acquittal, warning, and fines, which are considered less serious, while suspension of holding office, suspension or cancellation of authorization or registration to carry out activities, and prohibition of carrying out certain market operations are classified as more severe penalties (Borges & Andrade, 2019).

In the relevant literature on the effect of enforcement actions by government regulatory and monitoring agencies on CEO turnover, Chang et al. (2021) found that US Securities and Exchange Commission (SEC) enforcement actions are associated with the likelihood of forced CEO and CFO turnover. CEO turnover classified as forced, voluntary departure, and the possibility of retaining the CEO were explored in studies by Parrino (1997), Campbell et al. (2011), Hazarika et al. (2012), and Matos and Colauto

(2017). From another perspective, Brazilian studies by Fontes (2013), Fusiger et al. (2015), Melo et al. (2017), Borges and Andrade (2019), and Santos et al. (2020) focused on carrying out descriptive surveys of regulatory actions in the Brazilian capital market scenario, without taking CEO turnover into account.

Thus, a research gap can be observed in the Brazilian context. This study seeks to answer the following question: What is the likelihood of forced CEO turnover occurring following the announcement of PAS against listed companies? Therefore, the study investigates the forced CEO turnover in Brazil, examining the CVM's announcement of PAS against firms listed in the Brazilian stock exchange (B3). It is noteworthy that the purpose here is not to analyze the dependency relationship between CEO turnover and the regulatory action imposed (PAS).

The relevance of this study lies in examining the likelihood of forced CEO turnover in the Brazilian context based on CVM's announcement of PAS against listed companies. The evidence presented may be useful to participants in the Brazilian financial market (such as CVM, Central Bank, financial institutions, stock exchange, and individuals) to understand the relation between CVM's regulatory actions and the event of CEO turnover in public traded firms. As a theoretical contribution, this research advances the debate on CVM's regulatory actions, including the companies' leadership structure (CEO turnover) in the discussion. The study's practical contribution lies in the association between forced CEO turnover and the announcement of PAS, expanding the discussions on the relevance of the CVM's regulatory and monitoring role and its performance in the face of corporate illicit acts. Another practical contribution is to foster the debate regarding the effectiveness of the applicability of administrative sanctions to punish irregularities or corporate crimes committed in the securities market to improve the quality and transparency of information for its various stakeholders.

2 Theoretical Framework

2.1 CEO Turnover

The theoretical foundation for CEO turnover stems from research that relates it to earnings management, corporate performance, and enforcement actions by regulatory and monitoring agencies. This is grounded in the principles of agency theory and legal enforcement.

Agency theory can be used to explain the relationship between earnings management and CEO turnover, but only when shareholders are unable to prevent managers from manipulating earnings or engaging in opportunistic behavior (Chen et al., 2016). In an attempt to monitor the company's residual loss of value resulting from conflicts of interest with managers, shareholders incur the so-called agency cost (Jensen & Meckling, 1976). One way to minimize this conflict of interest and guide managers to focus on creating company value is through internal governance mechanisms (Fama & Jensen, 1983). However, internal governance mechanisms such as boards of directors and CEO compensation may not effectively prevent managers from behaving opportunistically, distorting financial results, destroying company value, and harming shareholders (Hazarika et al., 2012). In this context, earnings management provides an enabling environment to examine whether internal governance mechanisms work to discipline managers who engage in self-interested activities that are potentially costly to shareholders.

The lack of transparency in CEOs' actions and decisions, such as earnings manipulation, is a relevant concept in the discussion between CEO turnover and the performance reported by companies. Therefore, the reported performance of companies can be a strategic tool for the CEO and, thus, can be subject to specific discretionary actions and decisions on their part to maintain their position as a senior executive and prevent dismissal (Leker & Salomo, 2000; Brickley, 2003).

There is no consensus in the literature on whether measures used to assess corporate performance should be based on stock market or accounting performance (Lausten, 2002). Studies have presented evidence that forced CEO turnover was influenced by large and significant declines in company performance, considering not only stock price but also market-adjusted returns and changes in accounting profits (Barro & Barro, 1990; Murphy & Zimmerman, 1993; Denis & Denis, 1995; Brickley, 2003). However, the credibility of accounting-based performance measures can be questioned using positive accounting theory, which suggests that managers can manipulate financial statements according to their personal interests (Holthausen & Leftwich, 1983).

In the current literature on the relationship between CEO turnover and corporate performance, there is a consensus that forced CEO turnover is more likely in companies with poor performance in the year prior to the turnover than in companies with no CEO turnover and voluntary dismissal (Huson et al., 2001; Hazarika et al., 2012; Gorton et al., 2017; Matos & Colauto, 2017). On the other hand, the company's high performance does not prevent the likelihood of CEO turnover when they manage results to mitigate the effects of not reaching market profit expectations (Hazarika et al., 2012).

Parrino (1997) is considered a pioneer in terms of classifying CEO turnover as forced and voluntary. However, Matos and Colauto (2017) emphasize the lack of consensus among researchers about this classification and argue that this perspective can be biased, as companies often seek to conceal the actual reasons for CEO turnover, resorting to evasive or vague expressions when justifying the event.

Turnover is classified as forced when there is an explicit declaration of dismissal or conflict or when the executive is asked to resign. All other justifications are classified as voluntary turnover (Worrell et al., 1993; Engel et al., 2003; Campbell et al., 2011). Dissanaike and Papazian (2004) highlighted the challenges in objectively and accurately classifying CEO turnover as forced or voluntary. To mitigate the biased nature of CEO turnover classifications, Bushman et al. (2010), Parrino (1997), and Matos and Colauto (2017) introduced elements of objectivity, seeking information published in specialized media to get closer to the true reasons for the CEO turnover.

A relevant aspect of CEO turnover concerns enforcement actions issued by regulatory and monitoring agencies to prevent corporate fraud. Chen et al. (2016) argue that explicit cases of irregularities by CEOs, such as corporate fraud resulting from investigations by these authorities, play a fundamental role in shaping the decision to dismiss the CEO.

Corporate fraud is one of the main symptoms of agency problems, and its influence on CEO turnover is well supported by previous studies on the US financial market (Chen et al., 2016). Karpoff et al. (2014) was one of the studies that corroborated the hypothesis of the influence of corporate fraud on CEO turnover, inferring that 93% of executives found guilty were fired from their jobs when the SEC and the American Department of Justice accused them of manipulation of financial information. More recently, the study by Chang et al. (2021) added that fraudulent CEOs are likely forced to resign when they are sanctioned and barred from being officers and directors by the SEC.

Companies have adopted corporate governance control mechanisms to reduce corporate fraud, which are classified as internal and external. However, traditional internal corporate governance mechanisms such as blockholders, the size and independence of boards of directors, and CEO remuneration are not always fully effective in reducing corporate fraud (Schnatterly, 2003; Dah & Frye, 2017; Ongsakul et al., 2022). External corporate governance control mechanisms are directly related to capital market controls, investment fund performance, institutional investors and shareholders' activist behavior, and the legal, regulatory, and supervisory environment (Hitt et al., 2007; Gill et al., 2009).

Therefore, companies seeking to employ good corporate governance practices must simultaneously consider internal and external mechanisms and the level of shareholder protection (Klapper & Love, 2004; De Luca et al., 2021). In this sense, countries with developed financial markets, good corporate governance practices, and greater company value present strong shareholder protection, which includes both the rights provided for in law and regulations and effective compliance with their application (La Porta et al., 1998, 2000; Pukthuanthong et al., 2018; De Luca et al., 2021).

The existence of laws does not constitute a regulatory and supervisory environment capable of safeguarding shareholders' rights, which denotes that the effectiveness of this environment would be the adequate application and observance of legal mechanisms related to legal enforcement (De Luca et al., 2021). The quality of legal enforcement by regulatory and monitoring agencies and a country's courts are fundamental elements of corporate governance (La Porta et al., 1998).

In countries where the quality of enforcement is low, and the legal environment is less developed, investors generally face more difficulties and higher costs in executing contracts. In addition to some type of inefficiency and corruption in the courts, this further reveals weakened judicial and police systems (Lerner & Schoar, 2005; Admati, 2017).

Thus, the extent of legal enforcement varies from country to country, and regulatory agencies play a crucial role in restraining companies due to their legal power, impacting companies' compliance with accepted or desirable practices (Pache & Santos, 2010; De Luca et al., 2021). The extent of legal enforcement is also considered a measure of the level of government monitoring and the application of more severe penalties for violating practices (Banerjee, 2011).

In Brazil, CVM regulates and monitors the securities market and the quality of legal enforcement (Dantas et al., 2011). Melo et al. (2017) highlight that the role of the CVM is to correct flaws in the securities market and apply administrative sanctions to offenders who fail to comply with the rules established through administrative proceedings.

The tenure of CEOs in Brazil compared to other countries is a distinguishing and motivating aspect for investigating the potential influence of sanctions on the probability of CEO turnover. The survey conducted by Machado and Sonza (2022) with data from 230 Brazilian companies listed on B3 between 2010–2019 indicates an average tenure of executives in CEO positions of approximately 3.5 years. This characteristic of temporality is lower than that observed in the context of developed countries, such as the USA, where an average tenure of approximately 6.6 years was identified, based on the study by Leng and Pan (2022), which considered 2,651 publicly traded firms between 1993–2007. The tenure of Brazilian CEOs is also lower than other emerging economies, such as China, based on data from 1,161 firms in the period 2008–2016 collected by Liu and Jiang (2020), in which tenure of approximately 5.5 years was identified. These numbers characterize Brazil as having a higher volume of CEO turnover events than other jurisdictions.

The performance of regulatory agencies has undergone significant changes over time as a result of transformations in economic sectors and business complexities and due to the opportunistic behavior of the various agents participating in the regulatory process, making these agencies essential to coerce possible accounting and administrative irregularities (Schipper, 2003; Kothari et al., 2010).

2.2 Sanctioning Proceedings

Countries adopt different measures to investigate and punish irregularities committed by agents participating in the securities market. In the USA, the SEC is the agency responsible for introducing measures to detect and investigate irregularities, reduce information asymmetry, and improve the efficiency of markets, maintaining investors' integrity and protection, and enforcing administrative and civil procedures as sanctioning mechanisms (Nourayi, 1994; Silvers, 2016). Furthermore, it is responsible for issuing Accounting and Auditing Enforcement Releases (AAER), which indicate various processes related to accounting misconduct, presenting the nature of the actions and the effect caused on the financial statements (Borges & Andrade, 2019).

The China Securities Regulatory Commission (CSRC) is the country's main regulatory agency, supervising securities markets and investigating and disciplining fraudulent corporate behavior (Chen et al., 2016). Chinese proceedings related to illegal stock acquisition or stock price manipulation, financial statement fraud, and shareholder violation of fund provisions are presented through the China Stock Market and Accounting Research Database (CSMAR) (Borges & Andrade, 2019). As in the American market, sanctioning proceedings in the Chinese market are conducted through mechanisms that include administrative and civil actions. The possibility of civil actions to conduct administrative proceedings in China is based on legislation changes that occurred in 2019 (Chen, 2022).

Considering US market behavior, Silvers (2016) suggests that SEC supervision increases company value, supporting the idea that supervision by a government entity limits the risk of fraud. In this study, the author relied on a sample of foreign companies listed on the US stock exchange and identified higher share appreciation patterns for companies from countries with weaker legal environments when they came under SEC supervision.

The CVM is the Brazilian agency that investigates irregularities in the securities market. It conducts administrative proceedings that may result in sanctions and the application of punishments to offending agents. Although these so-called administrative sanctioning proceedings (or PAS) refer to administrative mechanisms, they do not prevent offenders from being held accountable for wrongdoings in civil or penal courts (Santos et al., 2020). As mentioned before in this article, CVM's PAS have been classified into three types over the years: ordinary, summary (until 2017), and simplified (since 2017) proceedings. The cases judged based on the summary or simplified proceedings address objective infractions, considering lower fines and shorter deadlines, while ordinary proceedings involve more extended trial periods and penalties with higher fines (Borges & Andrade, 2019; CVM, 2014, 2017, 2021).

Penalties applied by the CVM may include acquittal, warning, and fine considered to be minor sanctions, while suspension from holding office, temporary disqualification from holding office, suspension, revocation of authorization or registration, and the prohibition of acting in certain market operations are examples of severe sanctions (Coelho, 2004; Borges & Andrade, 2019). Appendix B illustrates the Brazilian scenario by presenting the number of PAS registered from 2011 to 2021.

2.3 Previous studies and hypothesis development

Previous and similar studies on administrative sanctioning proceedings include Fontes (2013), Fusiger et al. (2015), Karpoff et al. (2014), Smetana (2015), Melo et al. (2017), and Xu et al. (2017), Pukthuanthong et al (2018) and, more recently, Borges and Andrade (2019), Santos et al. (2020), and Chang et al. (2021).

The research by Fontes (2013) evaluated the behavior of the boards of directors of Brazilian listed companies subjected to CVM's PAS based on the theory of agency and the stakeholder theory. The research demonstrated that board members prioritize the interests of controlling shareholders to the detriment of minority shareholders, do not see themselves as managers, are unaware of the relevant legislation, and require the technical qualifications necessary to face the complexity of the corporate world.

The study by Fusiger et al. (2015) identified the main infractions committed by independent auditors in Brazil, whether individuals or legal entities, which led to PAS. The authors concluded that errors in issuing the report, followed by the lack or inadequate execution of planning and audit procedures, were the most frequent infractions.

Karpoff et al. (2014) reported that 89% of CEOs who were subjected to SEC administrative proceedings and found guilty of earnings manipulation lost their jobs. Melo et al. (2017) examined the quality of accounting information and the impact of the CVM's administrative proceedings on this aspect. The authors demonstrated that the CVM characterizes poor-quality accounting information as a severe infraction.

Xu et al. (2017) found that the actions of the Chinese Securities Regulatory Commission are still considered ineffective and insufficient in combating crimes in the securities market despite the growth in the number of inspections since 2011. The authors also found that private companies face a stricter regulatory environment with more severe penalties, while state-owned companies, particularly those controlled by the central government, are in a less severe regulatory environment.

Pukthuanthong et al. (2018) examined operational and performance changes due to forced CEO turnover caused by disputes between boards of directors and CEOs over the strategic direction of companies. The authors concluded that forced CEO turnover due to these disputes tends to be preceded by significant operational performance and corporate stock value declines. They also identified that corporate performance improves after the firm's executive leadership change.

Borges and Andrade (2019) examined how companies listed on the Brazilian stock exchange, B3, were classified concerning PAS established by the CVM, focusing on sector categorization. The results indicated that firms in the financial sector presented the highest number of PAS. These infractions typically correspond to errors in disclosing or concealing information and irregularities in the financial statements. Correspondingly, fines were the most common penalties imposed by the CVM.

Santos et al. (2020) studied the impact of irregularities under analysis and/or judged in PAS on the market value of Brazilian companies, concluding that the irregularities that occurred in the analyzed period did not impact the market value of Brazilian companies.

Thus, Brazilian literature primarily focuses on investigating issues related to regulatory action within the context of the Brazilian capital market, with a significant emphasis on conducting descriptive surveys. In the international context, Chang et al. (2021) analyzed the effects of SEC enforcement actions on the forced turnover of CEOs guilty of administrative misconduct in violation of the Sarbanes Oxley Act (SOX). The authors concluded that CEO turnover is likely associated with SEC enforcement, primarily for SOX 303 and 305 violations. The results also indicated that in the post-SOX period, CEOs lost their jobs when companies faced bankruptcy proceedings, criminal charges, and restated profits. However, no Brazilian studies were found that associated the likelihood of forced CEO turnover with the announcement of PAS against listed firms. Therefore, the following research hypothesis is presented:

Hypothesis: The likelihood of forced CEO turnover increases following the announcement of PAS.

3 Methodology

Considering the objective of investigating the likelihood of forced CEO turnover occurring in the Brazilian context following the CVM announcement of the establishment of PAS, this research is classified as empirical, correlational, and quantitative. It is empirical because the conclusions are based on data collected from real observations/events; correlational, given the emphasis on investigating the existence of a relationship between the occurrence of CEO turnover and PAS; and quantitative, considering the use of statistical methods to perform data analysis (Kumar, 2011).

Two data sources were used to empirically test the hypothesis listed in section 2. Firstly, we utilized the B3 website to obtain information about the listed firms and their operating sectors. The CVM website was the second source of information, where it was possible to collect two types of information: (i) the PAS started by CVM against firms listed in B3; and (ii) annual data on the companies' leadership structure – in the reference forms (FRE) the firms deliver to the CVM – and identification of possible occurrences of changes in this structure throughout the analyzed period – in the minutes of ordinary/extraordinary general meetings and of boards meetings, and in relevant facts disclosed.

CVM regulated the format and requirements of the FRE on December 7, 2009, through Normative Instruction 408/2009, which came into force on January 1, 2010 (CVM, 2009). Considering the impossibility of comparing the first year of these documents' disclosure with the previous year to identify changes in the firms' leadership structures, the study sample comprised firms listed on B3 between 2011 and 2021. Table 1 presents the sample composition.

Table 1
Sample Composition

	Firms listed on B3	(458)
(–)	Firms listed as non-active or lacking information (2011 – 2021)	(186)
(=)	Firms listed on B3, which were part of the sample (2011 – 2021)	272

The following metrics were outlined for constructing the dependent and independent variables used in this research, which are listed in Appendix A. As discussed in Section 2, the literature has highlighted several characteristics at the firm and sector levels, related to corporate governance, the specificities of managers, and other aspects related to the occurrence of CEO turnover. However, given the divergent findings, there is no consensus in academic research concerning the study of these types of events regarding which variables are relevant. In this sense, the study first considers variables indicating turnover and regulatory enforcement, together with control variables related to the size of the companies and the board of directors' monitoring capacity over the executive leadership. Appendix A describes the construction of each of the variables.

Following what is established in the literature on CEO turnover, the study was conducted based on two perspectives. First, it examines whether or not CEOs leave the companies. Second, it observes the three possibilities: no turnover, forced turnover, or voluntary turnover (Parrino, 1997; Hazarika et al., 2012; Matos & Colauto, 2017).

Thus, “no turnover” was the classification for cases where the CEO remained in office between a given year and the following year, observing the executive’s recruitment dates (Parrino, 1997). “Forced turnover” was the classification for cases where the CEO left the firm due to at least one of the following situations: (i) there is a clear description that the previous CEO was fired; (ii) there was no communication between the time of recruitment and departure regarding the need to change the individual occupying the CEO position; (iii) the previous occupant of the CEO position did not leave due to health-related problems or death; (iv) after leaving the CEO position, the executive does not occupy any other position within the company or no longer holds any accumulated positions, such as positions in the top administration or a seat on the company’s board (Parrino, 1997; Campbell et al, 2011). Cases in which the CEO turnover did not occur due to any of the situations listed for forced turnover (Parrino, 1997) were classified as “voluntary turnover.”

The use of PAS as a metric related to CVM’s regulatory performance is based on the understanding that the regulatory entity of the Brazilian capital market uses its authority to monitor and punish infractions by economic agents (Dantas et al., 2011). Therefore, such proceedings were considered the materialization of CVM’s enforcement activity.

According to the literature, higher levels of corporate governance may suggest that firms have greater potential to minimize the occurrence of irregularities and punish CEOs involved in misconduct (Hazarika et al., 2012). Therefore, this study considered control variables related to these firm characteristics, specifically those touching on the monitoring capacity of the board of directors: board size (“Size_BD”), board remuneration (“Remuneration_BD”), and CEO duality (“Duality”). Finally, a variable was also considered to control the size of the firms (“Size”), given that the occurrence of CEO turnover based on performance indicators tends to be lower in larger firms (Brickley, 2003; Chen et al., 2016; Dah & Frye, 2017; Pukthuanthong et al., 2018).

We used binary and multinomial logistic regression (Fávero & Belfiore, 2017) to conduct the study in two stages. The first considered the mere occurrence of CEO turnover to estimate the likelihood from a dichotomous perspective, applying a binary logistic regression model and using “Turnover” as the dependent variable. Secondly, the likelihood of CEO turnover occurring was estimated, considering the three possibilities: (i) no turnover, (ii) forced turnover, and (iii) voluntary turnover. A multinomial logistic regression model was applied for this second analysis, using “Turnover_Type” as the dependent variable.

Finally, all empirical strategy specifications include fixed effects of time and sector. Silvers (2016) and Ongsakul et al. (2022) suggest that CEO turnover can occur with greater frequency in specific sectors and periods. Therefore, the inclusion of time-fixed effects controls shocks that can homogeneously affect all firms and vary over the years, while sector-fixed effects are crucial to control unobservable, invariable, and specific characteristics of each sector that can affect the volume and type of turnover occurrences within the different economic sectors of the Brazilian market.

4 Presentation and Discussion of Results

Figure 1 shows the distribution of CEO turnover occurrences for the firms in the sample during the period from 2011 to 2021. Of the total of 272 companies, examining the three classifications for CEO turnover, the most prevalent was “no turnover” in all years, occurring in a range of approximately 79.4% (in 2015 and 2018) to 91.5% (in 2011) of the firms.

In cases where CEO turnover was observed, those classified as ‘forced’ were more frequent, with a variation from 5.5% (in 2011) to 14.3% (in 2014). The numbers for voluntary CEO turnover ranged from 2.9% (in 2011) to 7.4% (in 2015, 2017, and 2018). These trends align with the findings of Matos and Colauto (2017), who observed that voluntary CEO turnover—or announcements of changes in the firms’ executive leadership using justifications of this nature—tend to occur less frequently.

Figure 2 displays the number of Administrative Sanctioning Proceedings (PAS) completed (i.e., initiated, processed, and judged) by the CVM against firms that make up the sample during the period. The CVM’s website published minutes of 547 PAS. Out of these, 158 were proceedings against companies listed on the Brazilian stock exchange B3. Among these, 121 were PAS against firms that met the requirements and composed the sample used in this research. Among the 272 firms in this sample, 60 were subjected to at least one PAS.

The beginning and end of these processes may not necessarily occur within the same year. Specifically in relation to the 121 PAS examined here, the average time between the start and the final decision is approximately 2 years and 8 months. The shortest and longest observed periods are approximately 7 months and 7 years, respectively. Thus, the reduction in the volume of PAS openings in more recent years, as illustrated in Figure 2, results from the failure to present processes that have not yet been completed.

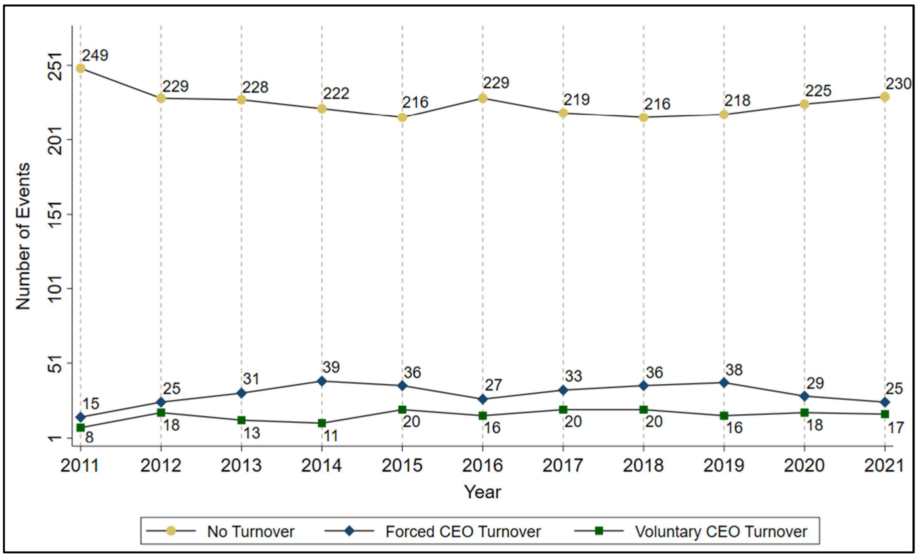

Figure 1 - Annual Distribution of CEO Turnover in Brazilian Firms

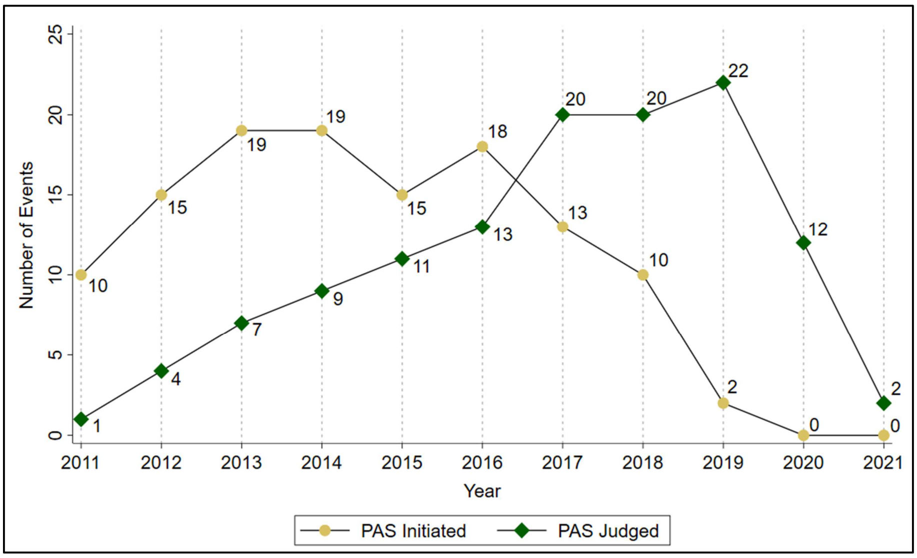

Figure 2 - Annual Distribution of PAS Initiated and Judged by the CVM Against Firms Listed on B3

Table 2 shows descriptive statistics of independent control variables.

Table 2
Descriptive Statistics – Independent Control Variables

Variable	Obs.	Mean	Standard deviation	Mínimum	Maximum
$Size\_BD_{it}$	2,992	6.41	3.74	0	30
$Remuneration\_BD_{it}$	2,992	2,263,992	7,286,713	0.00	211,438,336.00
$Size_{it}$	2,992	36,626,715.82	163,498,341.80	8.00	2,069,206,016.00

For "Duality," it is worth highlighting that the occurrence of this leadership structure throughout the analyzed period was less frequent compared to the non-duality structure. The presence of the same individual holding both the positions of CEO and chairperson of the board of directors occurred in a range that varies from approximately 11.0% (in 2020 and 2021) to 27.9% (in 2011) of the firms in the sample (Figure 3).

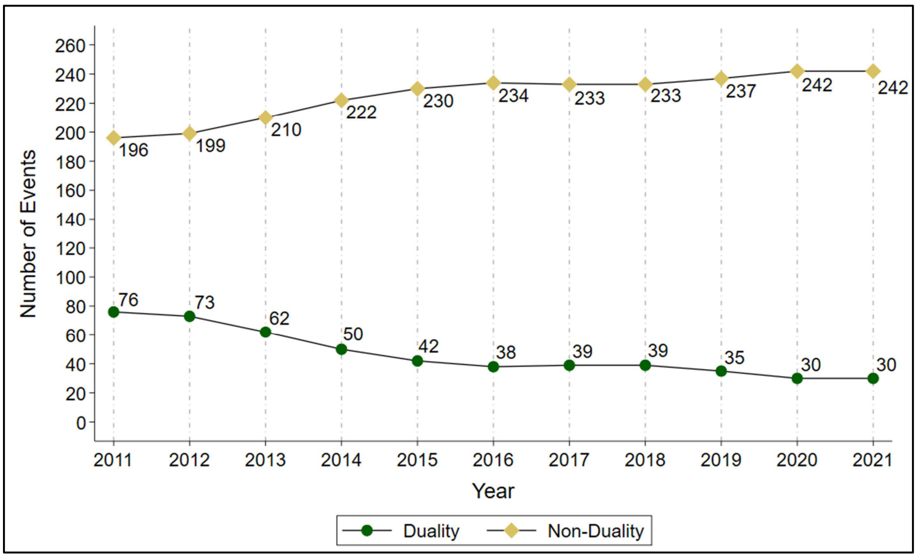

Figure 3 - Annual Distribution of Duality Among Firms Studied

Table 3 presents the results of the logistic regression models, with two sets of results for each analysis. Columns 1-2 report the results for the binary logistic regression model, while columns 3-6 report the results for the multinomial model. All specifications include fixed effects of time and sector. The calculations leading to the numbers in columns 1, 3, and 5 consider the sample, whereas the numbers in columns 2, 4, and 6 were calculated considering the population (total firms listed on B3). This measure allows for comparison, illustrating that the inferences made based on the sample are maintained when considering an unbalanced panel data set. Column 7 summarizes the expected results based on the logic discussed in Section 3.

Table 3
Regression Results

Independent Variables	Binary Logistic Regression		Multinomial Logistic Regression				Expected Result (+ or -)
			Category 0 – No Turnover (Base Category)				
			Category 1 – Forced CEO Turnover		*Category 2 – Voluntary CEO Turnover*		
	Dependent Variable: Turnover		Dependent Variable: Turnover_Type				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
PAS (*Standard error*)	** 0.339 *(0.164)*	*** 0.410 *(0.154)*	0.211 *(0.199)*	0.267 *(0.188)*	** 0.569 *(0.242)*	*** 0.658 *(0.224)*	+
Size_BD (*Standard error*)	*** 0.368 *(0.118)*	*** 0.352 *(0.108)*	** 0.311 *(0.143)*	** 0.329 *(0.130)*	** 0.473 *(0.183)*	** 0.396 *(0.169)*	+
Remuneration_BD (*Standard error*)	** –0.034 *(0.016)*	–0.015 *(0.013)*	–0.021 *(0.019)*	–0.008 *(0.016)*	** –0.058 *(0.023)*	–0.028 *(0.020)*	-
Duality (*Standard error*)	*** –0.901 *(0.188)*	*** –0.861 *(0.177)*	*** –0.826 *(0.224)*	*** –0.818 *(0.213)*	*** –1.042 *(0.319)*	*** –0.943 *(0.295)*	-
Size (*Standard error*)	–0.007 *(0.029)*	–0.025 *(0.026)*	–0.010 *(0.035)*	–0.014 *(0.031)*	–0.006 *(0.047)*	–0.051 *(0.043)*	+
Balanced panel	Yes	No	Yes	No	Yes	No	
Fixed effect time	Yes	Yes	Yes	Yes	Yes	Yes	
Fixed effect sector	Yes	Yes	Yes	Yes	Yes	Yes	
Observations	2.992	3.555	2.992	3.555	2.992	3.555	
LR Chi2	138.34	156.33	162.03	180.95	162.03	180.95	
Prob > Chi2	0.000	0.000	0.048	0.045	0.048	0.045	

Note: *, **, and *** indicate statistical significance, respectively, at 10%, 5%, and 1%.

Based on X^2 test and considering a significance level of up to 10%, the null hypothesis that all estimated parameters are statistically equal to zero is rejected. This means that at least one of the independent variables is statistically significant in explaining the probability of occurrence of the event investigated in the analyses conducted using logistic regression models (see lines "LR Chi2" and "Prob > Chi2" in Table 3).

The results presented in Columns 1-2 of Table 3 referring to binary logistic regression indicate that the dependent variable of interest – PAS – is statistically significant at least at the 10% level. This suggests that the PAS initiated by CVM against Brazilian listed firms positively influence the likelihood of CEO turnover.

Among the control variables, all those related to the board of directors' monitoring capacity proved to be significant for the sample. Generally, these findings support the statement made by Hazarika et al. (2012) that good corporate governance practices increase the potential for firms' internal monitoring structures to discipline managers who engage in misconduct. The findings for the board size proxy indicate a positive influence of this variable on the likelihood of CEO turnover. This aligns with the position presented by Pukthuanthong et al. (2018) that larger boards have a greater capacity to curb inappropriate practices by companies' executive management, even if they are slower in making decisions.

The variables of remuneration of the board of directors and CEO duality negatively influenced the likelihood of CEO turnover for the sample analyzed. The findings for the variable "Size_BD" support what is suggested by Dah and Frye (2017), who point out that excessive levels of compensation for board members tend to be a sign that the board has been captured by the executive in order to gain additional protection for maintaining the CEO position, potentially leading to a weakening of the Board's monitoring capacity. The negative influence found for "Duality," in turn, aligns with the understanding that the board's supervisory power is minimized when the same person holds both the position of CEO and board chairperson, given the concentration of executive and monitoring powers to this single individual (Chen et al., 2016; Dah & Frye, 2017; Pukthuanthong et al., 2018).

The only variable considered in the model that did not present a significant influence was "Size." This suggests that the organizational complexity captured by the proxy for company size does not indicate variations in the occurrence of CEO Turnover. Even though there is potential for it to be a mediator in the relationship between corporate performance and CEO turnover, as highlighted by Brickley (2003), this was not observed in the current analysis.

All findings noted for the binary analysis with the main sample are reiterated when conducting the analysis with the unbalanced panel, with the exception of the variable "Remuneration_BD," which was not significant for the sample, despite maintaining the same expected result (negative).

Considering the results from the multinomial logistic regression model (columns 3-6, Table 3), based on the three possibilities for CEO turnover—no turnover, forced CEO turnover, and voluntary CEO turnover—it was possible to observe that the variable indicating the occurrence of PAS against firms presented a positive and significant result for voluntary CEO turnover (category 2), but not for forced CEO turnover (category 1), in the two sets of analyses conducted.

This reveals that in the samples studied and compared to "no turnover" (category 0), facing PAS initiated by the CVM increases the likelihood of voluntary CEO turnover, while the results pointed out that going through these proceedings has no effect on forced CEO turnover. This finding contrasts with the evidence and perceptions shown in studies carried out in developed markets, such as the USA (Karpoff et al., 2014; Chang et al., 2021) and other emerging economies, such as China (Chen et al., 2016). In these studies, CEOs accused of corporate fraud were more likely to leave their positions forcibly

The estimates obtained by the multinomial logistic regression model, as presented in Table 3, were derived from comparing categories 1 and 2 (i.e., forced and voluntary CEO turnover) with category 0 (i.e., no turnover). This allowed us to compare variations in the likelihood of occurrence for each category in relation to the likelihood of no turnover. However, this analysis did not show estimates that indicate the comparison of probabilities between each type of turnover. To address this point, a complementary multinomial logistic regression model was carried out, changing the base category to category 2, so that probability analyses were computed using the possibility of a CEO's voluntary resignation as the base for comparison. The results of this complementary model are presented in Table 4. The complementary model includes the same specifications as the central analysis presented in Table 3.

The validity statistics of the complementary model are identical to those of the central model (lines "LR Chi2" and "Prob > Chi2" in Table 4), considering that the only change refers to the choice of the base category. Column 1 of Table 4 compares variations in the probability of no turnover in relation to voluntary CEO turnover. The magnitude of the estimates obtained for all variables considered are the same as the results presented in Column 5 of Table 3, with opposite expected results (positive or negative) due to the change in the category used as the base.

Column 2 of Table 4 presents the results for analyzing probability changes by comparing the likelihood of forced CEO turnover in relation to voluntary CEO turnover. In this analysis, the variable indicating the establishment of PAS against firms had a negative expected result. This suggests that firms facing PAS would have a lower probability of forced CEO turnover compared to voluntary CEO turnover. However, this interpretation cannot be statistically accepted because it does not reach a significance level of at least 10%.

The perception of divergence between different levels of "quality" of the regulatory environment and how enforcement activities materialize and affect aspects of management in the face of misconduct within the capital market aligns with the evidence and arguments presented by Pache and Santos (2010), Banerjee (2011), and De Luca et al. (2021). Therefore, it is possible to infer that, although identifying and disclosing potential inappropriate conduct are measures that affect the likelihood of CEO turnover, forced CEO turnover as a punishment mechanism does not occur in the Brazilian institutional context.

Table 4
Results of Multinomial Logistic Regression with Change in Base Category

Independent Variables	Multinomial Logistic Regression	
	Category 2 – Voluntary CEO Turnover (Base Category)	
	Category 0 – No Turnover	*Category 1 – Forced CEO Turnover*
	Dependent Variable: Turnover_Type	
	(1)	(2)
PAS (*Standard error*)	** –0.569 *(0.242)*	–0,358 *(0.290)*
Size_BD (*Standard error*)	** –0.473 *(0.183)*	–0.161 *(0.218)*
Remuneration_BD (*Standard error*)	** 0.058 *(0.023)*	0.369 *(0.028)*
Duality (*Standard error*)	*** 1.042 *(0.319)*	0.217 *(0.380)*
Size (*Standard error*)	0.006 *(0.047)*	–0.005 *(0.055)*
Balanced panel	Yes	
Fixed effect time	Yes	
Fixed effect sector	Yes	
Observations	2,992	
LR Chi2	162.03	
Prob > Chi2	0.048	

Note: *, **, and *** indicate statistical significance, respectively, at 10%, 5%, and 1%.

A potential justification for the scenario above is that the departure of the CEOs would be motivated voluntarily (or not captured as forced by the mechanisms used in this research) after the risk of regulatory litigation was identified. This would be more prevalent in cases where the person occupying the position of CEO was listed as one of the accused at the time of the PAS. This position is supported by testing whether there is a relationship between the type of turnover and the nominal identification of active CEOs being accused in PAS, as shown in Table 5.

Among the 511 occurrences of CEO turnover between 2011 and 2021, 334 were forced CEO turnovers, 177 were voluntary CEO turnovers (Figure 1), and 141 occurred in firms that were subjected to PAS. In this context, most CEOs were kept in their positions even though they were nominally accused. In the minority of the cases where the CEOs left the company, approximately 12.1%, the CEOs were accused of misconduct in PAS, which suggests that being held accountable for irregularities by regulatory agencies is not the main factor leading to CEO turnover. Therefore, the proportional difference in the distribution of the two alternatives (forced or voluntary turnover) is highlighted. The proportion of accused CEOs who left their position voluntarily was 16.4%, while the proportion of accused CEOs was 9.3%. The crossing of these two characteristics, added to the lack of a statistically significant relationship between them (chi-square test with two degrees of freedom = 3.247, Prob = 0.197), strengthens the above arguments.

Table 5
Relationship Between Turnover and CEOs Nominally Accused in PAS

CEO Nominally Accused	**CEO Turnover**			**Total**
	No Turnover	**Forced CEO Turnover**	**Voluntary CEO Turnover**	
No	473	78	46	597
Yes	46	8	9	63
Total	519	86	55	660
Pearson chi2(2) = 3.247		Prob = 0.197		

Furthermore, similarly to the results from the binary analysis, the evidence provided by the multinomial logistic regression also suggests significant influence of the size of the board of directors and CEO duality and the lack of statistically significant influence for the variable "firm size." The variable "Remuneration_BD" only proved to be relevant to affect the occurrence of turnover in the case of voluntary CEO turnover and for the estimations carried out with the study sample.

It is important to highlight the relationship between the variables of CEO duality and CEO turnover. This is due to the high degree of statistical significance and the low variability when calculating the negative influence of the first variable on the likelihood of the second variable occurring. Table 6 presents the distribution of the leadership structure in relation to the presence of duality among the firms in the sample that faced PAS throughout the analyzed period.

Table 6
Relation Between Duality and Turnover

Duality	CEO Turnover			Total
	No Turnover	Forced CEO Turnover	Voluntary CEO Turnover	
No	386	81	50	517
Yes	133	5	5	143
Total	519	86	55	660
Pearson chi2(2) = 22.653		Prob = 0.000		

For the comparison between no turnover and both forced and voluntary CEO turnover, there is a high concentration of no turnover when the CEO also holds the position of chairperson of the board of directors. This accounts for approximately 34.5% of the total number of cases with no turnover. In cases of turnover, a significantly lower proportion of duality structure is identified, which varies between 6.2% for forced and 10.0% for voluntary CEO turnover. Additionally, the relationship between the variables "Duality" and "Turnover_Type" is statistically significant (chi-square test with two degrees of freedom = 22.653, Prob = 0.000). This supports the notion that the board of directors' monitoring potential decreases when there is CEO duality in the organizations (Chen et al., 2016; Dah & Frye, 2017; Pukthuanthong et al., 2018).

In summary, the research results suggest that the likelihood of CEO turnover tends to be a forced turnover when boards are larger, as the CEO has significantly less power to influence board members. Conversely, CEO turnover tends to be voluntary when there is CEO duality.

Finally, the results lead to the rejection of the hypothesis highlighted in Section 2, as the likelihood of forced CEO turnover decreases following the announcement of PAS by the CVM. The Brazilian context suggests a more frequent occurrence of voluntary CEO turnover, contrary to the results found by Chang et al. (2021), who found that the likelihood of forced CEO turnover is associated with SEC inspection actions in the North American securities market.

5 Final Considerations

This research aimed to investigate the probability of forced CEO turnover occurring in the Brazilian context following the announcement of PAS by the CVM. This empirical, correlational, and quantitative study was carried out based on data from 272 firms listed on the Brazilian stock exchange B3 between 2011 and 2021 and information from PAS initiated and judged by the CVM during this same period.

The results showed that PAS, aimed at investigating potential irregularities by economic agents linked to listed firms, increases the likelihood of CEO turnover. When considering the types of CEO turnover, whether forced or voluntary, the announcement of PAS is more often followed by voluntary CEO turnover. No effects were perceived on forced CEO turnover when comparing these two types with no turnover. Thus, these results suggest that the boards of directors of Brazilian companies have not held CEOs accountable in firms where corporate frauds were identified. This contrasts with what is observed in the North American and Chinese context, where there is greater pressure for forced CEO turnover due to the occurrence of regulatory disputes (Karpoff et al., 2014; Chen et al., 2016; Chang et al., 2021).

The variables related to the board of directors' monitoring capacity – board size, board remuneration, and CEO duality – proved to be significant in altering the likelihood of CEO turnover. The variable "company size" did not show a considerable influence, which denotes that the organizational complexity captured by the proxy does not indicate variations in CEO turnover.

The results may be of great relevance to the various participants in the securities market (administrators, majority and minority shareholders, members of financial committees, intermediary agents, and other stakeholders) to demonstrate that the likelihood of CEO turnover is greater due to the announcement of PAS by the CVM, but also because Brazilian companies do not fire their executives following the start of sanctioning proceedings by the regulatory authorities.

This study presents theoretical and practical contributions. Theoretically, it contributes to advancing the literature on the relationship between CEO turnover and regulatory performance in capital markets, considering that investigations related to such events on this aspect of firm leadership structure are generally supported by variables that measure performance and corporate governance characteristics. This has led scholars on the subject to conflicting findings. Thus, this research contributes to the literature by evaluating the probability of regulatory actions related to the leadership structure of companies (CEO turnover), focusing on the Brazilian securities market.

Concerning practical contributions, studying forced CEO turnover associated with the announcement of administrative sanctioning proceedings advances discussions on the importance of the regulatory and supervisory role of the CVM in relation to its performance in the face of corporate offenses committed by administrators, shareholders, members of financial committees, intermediary agents, and other stakeholders participating in the securities market, to improve the quality and transparency of information for its various stakeholders, as well as the effectiveness of sanctions applicable in the face of such irregularities.

The main limitation of this research lies in the potential inaccuracies in categorizing the types of CEO turnover based on the mechanisms used. Strategies for "camouflaging" forced turnover as voluntary and vice versa, which are not included in the documents used for this study, may not be captured. Despite this, most of the incidents that differentiate the forms of CEO turnover were covered in the studies by Parrino (1997) and Campbell et al. (2011), who provided the basis for our classification, which minimizes any potential problems of inaccurate classifications. Attention is also drawn to the impossibility of extending the analysis to before the period considered, considering that information on the leadership structure of firms through the Reference Forms only became mandatory from the 2011 fiscal year, making it impossible to explore the totality of sanctioning processes initiated by the CVM. Despite this, stability was seen in the results obtained from the different sample configurations presented.

Finally, to investigate whether the estimates obtained remain stable, it is suggested that future research carry out analyses with other governance metrics – board members independence and establishment of an audit committee, for example – and specificities of CEOs that may be associated with their management skills – age, area of training, time in the position, among others.

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