

## Mutual Funds Reaction to Changes in Corporate Governance Levels

### Reação dos Fundos de Ações às Alterações nos Níveis de Governança Corporativa

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#### Abstract

The aim of this study is to analyze the reaction of equity mutual funds to changes in the classification of Brazilian public firms according to the special listing segments of the Brazilian Stock Exchange. To do so, we selected all firms who have experienced any change in their listing segment from January 2010 to November 2018; the final sample consisted of 34 firms. Regarding mutual funds, we considered all equity mutual funds with available data in the period. The results showed a positive and statistically significant relationship between the variables that indicate the sum of the percentage invested by funds in companies and the dummy variable for the month of change in the listing segment and the next two months. Therefore, institutional investors seem to increase investments in stocks of firms which moved to a listing segment with greater requirements in terms of corporate governance. This research contributes by providing evidence of the effect that corporate governance standards have on investment decisions of equity mutual funds. As for the limitations, this study is subject to the sample of 34 companies that had some change in the listing segments and the use of only the equity mutual funds category.

**Keywords:** Corporate Governance. Institutional Investors. Investment Decisions.

#### Resumo

O objetivo deste trabalho consiste em analisar a reação dos fundos de ações às alterações na classificação das empresas abertas brasileiras conforme os segmentos especiais de listagem da bolsa de valores do Brasil. Para isso, foram selecionadas todas as empresas abertas que sofreram alguma alteração em seu segmento de listagem no período de janeiro de 2010 a novembro de 2018, sendo a amostra final composta por 34 companhias. Quanto aos fundos de investimento, foram considerados todos os fundos de ações com dados disponíveis no período. Os resultados indicam uma relação positiva e estatisticamente significativa entre as variáveis para a soma dos percentuais investidos pelos fundos nas empresas e a variável *dummy* para o mês de mudança no segmento de listagem e os dois meses seguintes. Desta forma, a partir do momento em que as companhias mudam para um segmento de listagem com maiores exigências em termos de governança corporativa, os fundos de ações aparentam aumentar os investimentos em ações dessas empresas. Esta pesquisa contribui ao fornecer evidências do efeito que os padrões de governança corporativa das empresas exercem na decisão de investimento dos fundos de ações. Quanto às limitações, este estudo está sujeito à amostra de 34 empresas que tiveram alguma alteração nos segmentos de listagem e o uso de somente da categoria de fundos de ações.

**Palavras-Chave:** Governança Corporativa. Fundos de Ações. Decisões de Investimento.

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## 1 Introduction

Corporate governance can be seen as the focal point in terms of business management in the 21st century (Tricker, 2015). Virtually all the economies either developed or developing ones establish general corporate governance codes or enact new corporate laws to this end as it happened in the United States with the enactment of the Sarbanes-Oxley Act (Tricker, 2015). Furthermore, the global financial crisis that started in 2007 heated up the discussions on the importance of corporate governance practices and policies even more, bearing in mind that the main causes for the subprime mortgage crisis were attributed to factors such as information asymmetry and misaligned incentives associated to financial disintermediation by securitization, which increased the loan volume granted with high default risk (Bicksler, 2008).

According to Jensen and Meckling (1976), when one or more persons (principal) delegate their decision-making power to a third one (agent), considering that both seek their utility maximization, the agent is not always expected to act in line with the principal interests, thus generating conflict of interest between the parties. In such a context, according to Gillan and Starks (2003), the need for the corporate governance grows from the emergence of these conflict of interest among the stakeholders of a company, commonly referred to as agency problems. Tricker (2015) emphasizes that currently the agency problems became the main challenge in the operation and in the regulation of modern companies.

In general, the corporate governance can be understood as a set of mechanisms by means of which the minority stockholders and creditors, known as outsiders, protect themselves against the expropriation by the controllers and managers, called insiders (La Porta, Lopez-de-Silanes, Shleifer & Vishny, 2000). Such expropriation can occur in several ways and they usually involve the firm profit or asset appropriation (La Porta et al., 2000). In view of the above, the outsiders, either large or small investors, stockholders or creditors, need to be protected. In most countries, this

protection is provided by the market regulators, by the courts and also by the market participants themselves (La Porta et al., 2000).

The institutional investors are found among the market participants as it also happens in the Brazilian capital market. The institutional investors can be defined as institutions that hold high resource volume, which are transferred to the risk reserve or to the property income, as well as to the investment in the capital markets (Ferri & Soares, 2009). The investment funds, the insurance companies, the foundations and the investment banks are examples of institutional investors mentioned by Ferri and Soares (2009). Milani and Ceretta (2013) highlight that one of the most important ways of resource raising and investment refers to the industry investment fund, by considering that, in the Brazilian context, the growth of the fund market increased from the 1990s onwards. In 1972, there were only 88 investment funds, whereas the number was 896 in 1994, reaching 4,649 in 2009 (Milani & Ceretta, 2013).

According to Ferri and Soares (2009), these agents are seen by a large part of the financial community as sophisticated investors, who have greater capability to monitor and to discipline company managers. Doige, Dyck, Mahmudi and Virami (2015) showed that the institutional investors, by means of collective acts established in a formal organization, are able to deeply intervene in three aspects of the corporate governance in the companies in which they invest, namely: transparency, clearing structure and qualified majority voting in the board elections.

Moreover, Gillan and Starks (2003) affirm that the institutional investors may strongly influence the corporate governance, acting as a mechanism of external control either by directly interfering in the managers' activities, due to the extensive participation in the ownership structure, or indirectly when negotiating their quotas. In this sense, McCahery, Sautner and Starks (2016) found empirical evidences that when the institutional investors are dissatisfied with the corporate policies or decisions, they succeed in disciplining the managers and bringing benefits

in terms of governance by direct intervention in the company by discussing with the administrators and the board of directors behind the scenes or by an indirect one by threatening to sell their equity interest.

In view of the relevance of the corporate governance for the companies and their stakeholders, particularly their relationship with the institutional investors, among which the investment funds are noteworthy, improvements in the classification levels related to corporate governance are supposed to carry information content that is absorbed by the funds and that is used for decision-making of financial asset allocation in their portfolios. Li, Patel and Ramani (2020) argue that the investment funds, especially the mutual funds with active management, due to the investment objective variability with time horizons and differing views, influence the corporate decisions (e.g. socioenvironmental activities) from their choices in the resource allocation. In complement, Belinfanti (2008) affirms that understanding how the mutual funds affect the company is fundamental for the comprehension of the corporate governance mechanisms, such as, for example, the stockholders' rights.

The answers of the investment funds to the changes in the corporate governance levels still deserve further attention on the part of the literature, as the evidence on the influence of improvement in the firm classification levels, in terms of corporate governance, in the decision-making of resource allocation of investment funds are non-existent in the Brazilian market. This gap has motivated the accomplishment of this study, which is guided by the following research question: What is the reaction of the stock funds to the changes in the corporate governance levels of Brazilian public companies? With regard to this questioning, the general objective of this study is to analyze the stock fund reaction to the changes in the classification of the Brazilian public companies in the special listing segments of the Brazilian Stock Exchange.

This research is expected to contribute to the literature concerning the subject matter by providing perspective evidence of the stock funds

regarding corporate governance. The studies that address corporate governance and its relationship with the institutional investors are scarce although there are relevant findings in the literature, such as the ones which were briefly presented in the previous paragraphs. Ivanova (2017) affirms that the literature on institutional investors has their role in the monitoring of the firms in which they invest as the focus. Thus, this study advances by proposing a complementary vision to the others, as the studies on this subject matter generally aim to verify the influence of the institutional investors in the corporate governance, whereas the current study intends to show how the corporate governance standards of the companies influence the investment decision-making of stock funds.

In addition, Brazil is an interesting case to be studied, as the economy had great changes in the recent decades, making the country more attractive for companies to raise capital, thus encouraging the development of governance good practices. These changes in the Brazilian economy, in the period after the Plano Real (Real Plan), include intense economic growth, achievement of macroeconomic stability, levels of favorable investments for the government and for private companies, internationalization of national companies, high volume of initial public offerings in the Stock Exchange, capital market restoring with the New Market rise, and institutional investor growth (Black, Carvalho & Sampaio, 2014).

The rest of this article is organized as follows. In the second section, a brief theoretical framework is presented, in which aspects related to corporate governance, its relationship with the institutional investors, such as the investment funds, as well as the results of previous related studies are discussed. The third section consists of the methodology, in which the sample, the analyzed variables and the estimated models are described. In the fourth section, the results that were found and their implications are indicated. Lastly, the final considerations of the study are presented in the fifth section.

## **2 Theoretical framework**

### *2.1 Corporate Governance*

Corporate governance can be defined as a set of mechanisms, either institutional or market based ones, that induces company administrators, who determine how the firm will operate, to make decisions that maximize its value and that of their owners, i.e. the capital suppliers (Denis & McConell, 2003). Additionally, Tricker (2015) affirms that, in general, the corporate governance regards the manner in which the power is exercised in the organizations, covering the activities of the board of directors and its relationship with the stockholders, with the members, with those who run the company, with external auditors, regulators and with other stakeholders as well.

Bertucci, Bernardes and Brandão (2006) define corporate governance as a set of policies and practices related to various objectives, being greater visibility and transparency regarding corporate decision-making highlighted, aiming to minimize the eventual conflict of interest among the various firm agents. For Bertucci, Bernardes and Brandão (2006), the companies have interest in keeping high corporate governance standards because governance affects the company credibility and growth as well as it increases its market value and the stockholder return.

Another way of considering corporate governance is by means of the legal protection to the stockholders. When the stockholders finance the companies, they obtain certain rights or powers. Some of them include disclosure and standardized accounting rules, which allow the stockholders to have access to relevant information, dividend payment, participation and vote in stockholder meetings, extraordinary meeting call, among others (La Porta et al., 2000). These rights are generally protected by rules and enforcement, in such a way that the greater the protection to the investor, the greater the effectiveness of the corporate governance (La Porta et al., 2000).

One of the reasons that leads the investors to allocate their resources in the companies is precisely the fact that they receive control rights in return for the investment so that, if the company managers violate terms of the agreement, the investors can file lawsuits to guarantee their rights, that is, they are legally protected against any eventual expropriations by the company administrators (Shleifer & Vishny, 1997). Nonetheless, there are many differences in the nature of the legal obligations that the companies have before their investors and in the way that the courts interpret and ensure such obligations according to several countries (Shleifer & Vishny, 1997).

Shleifer and Vishny (1997) argue that when the legal protection itself does not offer enough investors' control right, they can obtain effective control rights when they become large ones. Such fact occurs due to the fact that when the rights are concentrated in the hands of a small number of investors with large participation in the cash flow, mutual agreement decisions are easier to be reached than when the control rights, such as the vote, were disperse (Shleifer & Vishny, 1997). In this sense, large institutional investors are urged to play a relevant role in the monitoring and reinforcement of governance practices, influencing the companies in which they invest.

Ingley and Walt (2004) point out two main arguments for such: the first one is from an economic perspective, focusing on the agency costs, the second one derives from the stockholder perspective, with emphasis on topics about corporate democracy. As the large institutional investors are generally stockholders who hold the ownership, they have, therefore, incentives to monitor and to control the corporate decision-making in order to reduce the agency costs and to protect the stockholder wealth (Ingley & Walt, 2004). The institutional investors are also encouraged to exercise their democratic rights, especially the rights to vote, in order to compensate for the inequality of power caused by the separation between ownership and control (Ingley & Walt, 2004).

## *2.2 Institutional investors and corporate governance*

The institutional investors have potential in order to play an important role in the financial markets in terms of corporate governance development as, due to the costs involved in the process, only large stockholders have adequate incentives to widely monitor the firm management (Gillan & Starks, 2003). In addition, if these investors will exercise such monitoring or if they will not, it will depend on the constraints that they are subject to, their objectives and their preferences for liquidity, factors that change according to the country, thus causing differences in the influence of the institutional investors on the corporate governance practices (Gillan & Starks, 2003). In general, the institutional investors are expected to increase the price liquidity, volatility and informativity in the markets in which they operate, resulting in better monitoring of companies and, consequently, in better corporate governance. (Gillan & Starks, 2003).

The monitoring by the institutional investors can also imply in higher firm value. Karpavicius and Yu (2017) argue, based on the agency theory, that the managers who have available cash flows are more prone to invest them in projects with negative net present value. In this type of situation, the dividends and the debts appear as mechanisms that inhibit the agency problems from the excess of cash flow, as the dividend and the debt interest payment reduce the managers' cash availability. The problem is that the dividends and the debts represent costs for the firm and reduce its financial flexibility, thus generating negative reflections in the market value. On such basis, Karpavicius and Yu (2017) affirm that the institutional investor monitoring can replace costly mechanisms of the agency cost control and, therefore, increase the firm value.

Investment funds characterize one of the examples of company monitoring by the institutional investors. Punsuvo, Kayo and Barros (2007) define corporate governance as a set of mechanisms that aim to increase trust in the relationship between investment funds and the companies in



which they invest. Zhu (2020) affirms that the hedge fund activism is increasing in the sense that the funds acquire participation in companies in order to press for changes in certain corporate policies, including changes in corporate governance mechanisms. He, Huang and Zhao (2019) complement that the market mechanisms, just like the institutional participation, are important in order to minimize inefficiencies from the governance externalities. In the context of the investment funds, Punsuvo, Kayo and Barros (2007) define corporate governance as a set of mechanisms that aim to increase trust in the relationship between the investment funds and the companies they invest in.

According to Brav, Jiang, Partnoy and Thomas (2008), the funds that adopt an active posture, i.e. that somehow use their partner rights to directly influence the board of directors or the company managers to act and make decisions in line with their objectives, succeed in reducing the agency costs, hence becoming an important mechanism of firm monitoring, including benefits for the other stockholders. Furthermore, the mentioned authors found empirical evidence of positive abnormal returns of hedge funds with activist posture, which would be from the incentives used in the companies they invest in.

The institutional investors are especially important in markets in which the legal protection to stockholders is fragile due to its monitoring capacity. Wang, Ashton and Jaafar (2019) provided evidence that the mutual fund investments are related to lower incidence of the accounting frauds and to higher probability of detecting them. Thus, the minority stockholders, even in environments of weak legal protection, succeeded in protecting themselves from opportunistic behavior and their wealth expropriation by the managers of the firms in which they invest by means of the institutional investors' monitoring activities (Fatima, Mortimer & Bilal, 2019).

Nonetheless, Carleton, Nelson and Weisbach (1998) affirm that the process by which the companies and institutional investors interact is more

complex than it is allegedly thought of. If a given institution is concerned about some topic that meets its interest in the firm it invests in, it will normally contact the company in private in order to obtain clarification and, depending on the company answer, it will decide about what to do (Carleton, Nelson & Weisbach, 1998). When the portfolio administrators feel that some company is managed improperly or it does not meet their requests, then their traditional approach is to follow the Wall Street Rule, that is, to sell this company stocks instead of encouraging changes in its policies (Carleton, Nelson & Weisbach, 1998).

Grounded on these arguments, it is assumed in this study that the stock funds allocate their resources in companies with high levels of corporate governance instead of requiring that the firms they invest in adapt to their needs in terms of governance. The following section furthers the discussions from the results observed in previous related studies here presented.

### *2.3 Previous related studies*

Admati and Pfleiderer (2009) examined if large stockholders would succeed in minimizing the conflict of interest between managers and stockholders by threatening to sell their equity participations in the firm. For this purpose, a model in which the managers' incentives were misaligned with those of the stockholders was estimated, considering that the large investors had privileged information about the managers' performance, as well as about their consequences for the firm value, so that, from such information, they would then sell their securities. Admati and Pfleiderer's results (2009) showed that the threat posed by the large stockholders to sell their positions based on private information is a mechanism that disciplines and aligns agent decisions with the principal interests, thus reducing the agency costs.

According to Ferreira and Matos (2008), the institutional investors are increasingly playing an important role in terms of corporate governance

in companies worldwide, as these investors are able to boost changes in the companies by directly showing their interests to the managers or by indirectly ceasing the investment in the company. This argument was empirically verified by McCahery et al. (2016) who found evidence that when the institutional investors are not satisfied with the policies or with the company decisions, they succeed in disciplining the managers and bringing benefits in terms of governance through direct intervention by means of discussions with the administrators and boards of directors behind the scenes, or by indirectly threatening to sell their participation.

In the investment fund context, this research focus, Duan and Jiao (2016) analyzed the choices from the largest 100 families of the North American mutual funds concerning their participation sale or the direct influence on the corporate decisions. The results showed that both decisions (stock sale or direct intervention) are used by the mutual funds as governance mechanisms, being used in situations in which the company managers' suggestions and proposals diverge from the institutional investors' conceptions and interests. The fund and the firm characteristics also demonstrated that they affect the decisions to be made (Duan & Jiao, 2016). For example, the funds with investments focused on the short term are prone to sell their participation instead of trying to directly influence the corporate decisions.

On the other hand, the institutional investors may not play an acting role in the development of the institutional corporate governance policies of the companies that comprise their portfolios. Bushee, Carter and Gerakos (2014) suggest that institutional investors who are sensible to good governance practices, instead of playing an active role in this sense, may simply invest only in firms that already have the corporate governance mechanisms of their preference. Bushee, Carter and Gerakos (2014) found empirical evidence that the institutional investors, who are sensible to corporate governance mechanisms, that is, when the governance

characteristics affect the investment decision, prefer to invest in companies that previously had such mechanisms.

To this end, Wahab, How and Verhoeven (2008) found a positive and statistically significant relationship between institutional ownership and corporate governance, thus suggesting that the institutional investors are attracted by companies with good corporate governance practices. In a similar study in the North American market, Chung and Zhang (2011) analyzed the relationship between corporate governance and institutional investors decision-making in the stock selection and found evidence that institutional investors prefer stocks from well managed companies because of liquidity, monitoring costs and fiduciary responsibility. Moreover, the results of the mentioned research also indicated that the proportion of stockholding institutions of a given company increases with the governance quality.

Ferreira and Matos (2008) proposed a global view on the factors that lead institutional investors to invest in companies internationally. From an extended database with institutions from several countries, stockholders of companies also from different countries in the period from 2000 to 2005, Ferreira and Matos (2008) verified that the institutional investors aim to invest in large companies and with strong governance indicators. In addition to the intrinsic elements of the companies, some national factors were relevant, such as, for example, the preference of the institutional investors for countries with strict accounting disclosure norms.

Additionally, Li, Moshirian, Pham and Zein (2006) examined factors of the governance macroenvironment that affect the decisions of institutional ownership. Li, Moshirian, Pham and Zein (2006) observed that countries with extended rights to the stockholders, enforcement and wide transparency requirement in the financial information disclosure are prone to own companies with greater participation of institutional investors. Moreover, in countries with macroenvironment of strong corporate governance, aspects such as capacity of strengthened intervention and lower

monitoring costs increase the propensity of the institutional investors to monitor and discipline the companies.

Bushee and Noe (2000) indicated findings of the influence that the disclosure practices exercise on the ownership composition of institutional investors in the companies and in the volatility of stock prices. Among the results, Bushee and Noe (2000) verified that the institutional investors are prone to invest in companies with better disclosure practices, considering that by attracting such investors, the stock price volatility is reduced, as certain institutional investors are interested in investments in the long run and low portfolio turnover. However, it has also been noted that the disclosure attracts transitory institutions as well, which emphasize the volatility of stock returns because of their short term investment horizons and aggressive negotiation strategies.

In addition to the transparency, principle of corporate governance related to disclosure, other governance mechanisms also influence the participation of institutional investors in firms. Lu and Li (2019) showed that the participation of executives and directors is positively related to the institutional investor ownership. Nonetheless, Lu and Li (2019) still emphasized that differences between the domestic institutional investor behavior and the foreign one concerning the governance mechanisms may exist. In the case of the non-electronic firms from Taiwan, which are predominantly family ownerships, Lu and Li (2019) observed that the foreign institutional investors with participation in these companies are more concerned about the CEO duality than about the domestic institutional investors.

Aggarwal, Erel, Ferreira and Matos (2011) verified if institutional investors affect the corporate governance by analyzing the participation of institutions in companies of 23 countries from 2003 to 2008. The results indicated that the company governance level presented themselves positively associated to the international institutional investments, that is, international institutional investors export good corporate governance

practices worldwide. Moreover, it has been found that the institutional investor growth in the ownership structure increases the company value, showing that the institutional investments not only affect the governance mechanisms but also exert effects on the company value.

Aggarwal, Klapper and Wysocki (2005) examined allocation choices of the North American investments of mutual funds actively managed in stocks from 30 emerging markets. Among the results obtained by Aggarwal, Klapper and Wysocki (2005), it has been found that specific policies from each country that involve high transparency in the accounting disclosure, strong protection to stockholders' rights and legal structure are positively associated to the North American mutual fund investments. Therefore, these results emphasize the important role that the corporate governance good practices play when attracting institutional investments.

### **3 Methodology**

#### *3.1 Sample*

In order to carry out this study, all public Brazilian companies listed on the Brazilian Stock Exchange which had some change in their classification in the special listing segments, which are called *Bovespa Mais*, *Bovespa Mais* Level 2, Level 1, Level 2 and New Market with data until May 2019 were selected. According to Procianoy and Verdi (2009), the companies listed in these special segments provided better corporate governance practices to their stockholders when compared to the other companies in the traditional market, because they hold greater requirements in terms of stockholder rights in these segments, especially the minority stockholders, and company transparency.

By taking into account that the objective of this study consists of analyzing the reaction of the investment funds to changes in company classification in the special listing segments of the Brazilian Stock Exchange, thus the sample of this study considers the investment funds, in addition to the companies listed in the mentioned segments. As such, all the

mutual funds of Brazilian stocks with available data until January 2019 were selected to represent them. Li et al. (2006) affirm that the impact on the corporate governance environment in the participation decisions is more expressive in the case of professional fund managers than in other types of institutions, such as, for example, the banks, justifying, then, the choice of stock funds for this study.

As to the time horizon analysis, the period from January 2010 to November 2018 was chosen. The initial date was chosen because it represents the beginning of the most detailed disclosure in the composition of the fund portfolios. The final date was chosen because it represents the last period with available data for changes in company classification in the special listing segments of the Brazilian Stock Exchange at the moment of the data collection.

It is worth mentioning that, as the adopted methodological procedures required that data regarding the participation of the funds in the companies in the two previous months and in the two months following the date of the change in the classification of each company listing segments were surveyed, all the companies with Initial Public Offer (IPO) and other operations that made the data collection impossible in the two previous months or in the following ones to the date of listing were excluded. Therefore, the data for the composition of these portfolio funds were accessed until January 2019, that is, two months after November 2018, considered as the final period for the changes in the firm listing segments.

The final sample of companies that had some change in the classification in the special listing segments of the Brazilian Stock Exchange during the survey sample period was 34 companies. The data regarding these companies with the respective date of change in the listing segment were obtained from the Stock Exchange (B3) and the Securities and Exchange Commission (SEC) - (CVM), on a monthly basis. The data concerning the composition of the fund portfolios were collected by using Economatica database, and further information on the funds was obtained

from the Information System of the Brazilian Association of the Financial and Capital Market Entities (ISBAFCME) - (SI-ANBIMA).

### 3.2 Variables

In order to analyze the institutional investor reaction to the changes in the classification of the public companies according to the special listing segments of the Stock Exchange, the companies that had some change in the classification and in the month in which the change occurred were identified. Afterwards, the companies were classified according to the change in the governance level change, that is, if there was a listing for a higher level, of higher governance requirement or change for lower level, with less requirements. It is worth highlighting that, in the period investigated in this study, the changes in the listing segments of all the companies of the samples were for segments of corporate governance higher requirements regarding the respective previous segment.

From the month in which the change in the listing segment for each of the companies occurred, the percentage invested in the respective company in the month of the change (month 0), the percentage invested in that company in the two previous months to the reclassification (month -1 and month -2) and in the two following months (month 1 and month 2) the change in the listing segment were verified in the portfolios of each fund. In addition, other variables to subsidize the subsequent analysis were estimated, namely:

i) *aloc*: represents the sum of the percentage invested by all the funds in a given stock in month  $t$ , that is, it consists of aggregate measure, so that 0% indicates that no fund allocated resources for that stock in a given month;

ii) *nlaloc*: represents the natural logarithm of the *aloc* variable. It is worth highlighting that number 1 was added to the formula due to the presence of values 0 for the *aloc* variable, thus, the measure for this variable was  $\ln(aloc + 1)$ ;



iii) *change*: dummy variable that receives value 1 for the month of change in the listing segment of a given company or in the months following this change, and 0 for the previous months to the change. For example, if a given firm altered its listing segment in month 5, then the observation regarding months 5, 6 and 7 received value 1, while months 3 and 4 received value 0;

iv) *NM*: dummy variable that receives value 1 when the change in the listing segment of a given company was for the segment New Market, and 0 for the other cases. For example, if a given firm altered its segment on the listing from Level 2 to the New Market, the received value was 1, and 0 in the other cases;

v) *nlta*: natural logarithm of the company total asset in the previous year. It is worth mentioning that, for one case, there was absence of the company total asset in the previous year, being the total asset used in the same year only in this case;

vi) *roa*: return index on the company asset in the previous year. As there was an absence of the return on the company asset in the previous year, the return on the asset in the same year was used only in one case.

Table 1 presents a summary of the research variables.

### 3.3 Analysis Procedures

In order to assess whether the change in the listing segment of a given company promotes some effect on the monthly average percentage allocated by the funds, descriptive statistics and linear regression model analyses were used, estimated by the ordinary least squares method. It is worth highlighting that they were not considered variables for the firm characteristics by considering the short period of time for the study, as these characteristics tend not to vary from one month to the other. The estimated econometric models are provided by the following generic expression:

$$Allocation_i = \beta_0 + \beta_1 Change\ in\ the\ listing\ segment + \gamma Control + \varepsilon_i \quad (1)$$

In which *Allocation* refers to the fund allocation percentage in stocks of the sample companies; *Change in the listing segment* refers to the dummy variable for the month of change in the listing segment and the two previous and subsequent months; *Control* is about the control variables;  $\beta_0$ ,  $\beta_1$  and  $\gamma$  correspond to the constant coefficients, interest independent variable and control variables;  $\varepsilon$  is the model error.

**Table 1.** Description of the Research Variables

Panel A: Dependent Variables		
Notation	Measurement	Source
Aloc	Sum of the percentage invested by all the funds in a given stock in month t.	SI-ANBIMA e Economatica
Nlalog	Natural logarithm of aloc variable, being added number 1 to the formula due to the presence of values 0 for the aloc variable and, thus, the measure for this variable was $\ln(\text{aloc} + 1)$ .	SI-ANBIMA e Economatica
Panel B: Independent Variables of Interest		
Notation	Measurement	Source
Change	Dummy variable that receives value 1 for the month of change in the listing segment of a given company or in the months following this change, and 0 for the previous months to the change.	SI-ANBIMA e Economatica
NM	Dummy variable that receives value 1 when the change in the listing segment of a given company was for the New Market segment, and 0 for the other cases.	Brazilian Stock Exchange
Panel C: Control Variables		
Notation	Measurement	Source
Nlta	Natural logarithm of the company total asset in the previous year. In one case, the total asset of the same year was used, due to the missing value in the database.	Economatica
Roa	Return index on the company asset in the previous year. In one case, the total asset of the same year was used, due to the missing value in the database.	Economatica

Fonte: Prepared by the Author.

## 4 Results

The objective of this study refers to the reaction analysis of the investment funds in stocks to changes in the Brazilian public company classification in the special listing segments of the Brazilian Stock

Exchange. Thus, the changes in the listing segments for a sample of 34 companies, which met established methodological criteria, were verified from January 2010 to November 2018. Table 2 indicates the listing segments and the quantity of companies belonging to each level.

**Table 2.** Changes in the Observed Listing Segments

Change in the Listing Segment	Number of Firms
<i>Bovespa Mais</i>	1
<i>Nível 1</i> (Level 1)	7
<i>Nível 2</i> (Level 2)	9
<i>Novo Mercado</i> (New Market)	17
Total	34

Fonte: Prepared by the Author.

As Table 2 shows, among the 34 changes in the listing segments of the observed companies, most of them (17 companies) had the New Market as allocation, which is considered the special listing segment with greater requirements in terms of corporate governance. For the other special segments, it was verified that 9 companies listed on Level 2, other 7 companies listed on Level 1, and only one company listed on *Bovespa Mais*. It is worth emphasizing that, for all the changes in the company listing of the sample, only changes of lower requirement segments to higher requirement segments were observed, that is, companies that were listed on the Traditional market or on Level 1, for example, altered their classification to segments with higher requirements, such as Level 2 or New Market. Evidence of companies that changed from a given special listing segment to another with lower governance requirements was not found.

This demonstrates that the companies that are already classified in the Brazilian market special segments (in certain specific cases, even some companies that were not listed before, but that listed on a certain special segment in the period) aim to keep their corporate governance standards or even to voluntarily abide to stricter criteria and rules in this sense, such as, for example, the adherence to the New Market. Therefore, these findings

reinforce the arguments presented by Gillan and Starks (2003), Bicksler (2008) and Tricker (2015) that corporate governance has increasingly received attention from several agents involved in the capital market, mainly from the 2000s, after relevant global events that increased the demands for good governance practices, such as the Enron case and the subprime one.

In Table 3, the descriptive statistics for the study variables are shown, namely: fund allocation percentage in the company stocks (*aloc*), natural logarithm of this percentage (*nlaloc*), total asset natural logarithm (*nlta*) and return on the asset (*roa*) of the firms from the sample.

**Table 3.** Descriptive Statistics for the Study Variables

Variable	n	Average	Std. Dev.	Min.	Max.
Aloc	170	481.194	968.710	0.000	5907.954
nlaloc	170	4.523	2.382	0.000	8.684
nlta	170	22.257	2.056	15.935	27.447
roa	170	0.149	31.752	-169.789	47.254

Fonte: Research Results.

It can be seen in Table 3 that the total quantity of observations for each of the variables was 170, because data were obtained for 34 companies in five distinct periods. It is noticeable that, in average, the sum of the percentage of fund allocation in stocks of the companies from the sample correspond to 481.19% per month, or average of 4.523 in the logarithmic scale. As to the variables for the firm characteristics, the total asset natural logarithm had an average of 22.26 and the profitability average was 14.9%.

As a way to indicate further information for the variables regarding the percentage of fund allocation, Table 4 presents the descriptive statistics detailed by allocation period (two previous months and two following ones, as well as in the month in which the change in the listing special segment occurred). The variable *aloc* represents the sum of the percentage allocated by all the funds in the stocks of companies that had changes in their listing

segments in the month in which the change occurred and in the two previous and following months to this change. In turn, the *nlaloc* variable represents the natural logarithm of the *aloc* variable.

**Table 4.** Descriptive Statistics for the Fund Allocation Variables

Month	Obs.	Average	Std. Dev.	Min.	Max.
variable: aloc					
-2	34	454.188	1,020.481	0.000	5,435.630
-1	34	467.927	1,095.489	0.000	5,907.950
0	34	505.550	934.430	0.000	4,538.070
1	34	487.077	897.829	0.000	4,530.990
2	34	491.228	939.854	0.000	4,742.920
variable: nlaloc					
-2	34	4.020	2.660	0.000	8.601
-1	34	4.018	2.702	0.000	8.684
0	34	4.903	2.150	0.000	8.420
1	34	4.864	2.128	0.000	8.419
2	34	4.810	2.159	0.000	8.465

Fonte: Research Results.

According to Table 4, the average of the percentage sum allocated by all the funds in stocks of companies that had change in their listing segment was lower in the two previous months (months -1 and -2) than in the month in which the segment change occurred (month 0), being 467.93% in the first previous month and 454.19% in the second previous month compared to 505.55% in the month of classification. In the two subsequent months (months 1 and 2), the sum average of the allocation percentages of all the funds showed a little lower than the one verified in the month of the segment change (month 0), being 487.08% in the first following month and 491.23% in the second month after the segment change.

Also according to Table 4, it is noticeable that the minimum percentage allocated by all the funds in a given company for each of the five months studied was 0%, that is, it means that at least one fund did not allocate resources to any stock in each month of observation. As to the

maximum value verified in the percentage sum of fund allocation in a given company, it can be seen that this total percentage was higher in the two following months to the month of change of the companies in the listing segments (month 1 and month 2), being 5,435.63% and 5,907.95%, respectively. The behavior of the values for the standard deviation was similar to the one observed in the maximum values.

Table 5 contains the results for the regression analysis that involve all the company changes in the listing segments for the five months of analysis, resulting in 170 observations. The dependent variable for the regression models was the *nlaloc* notation, which represents the natural logarithm of the sum of the allocation percentages of the funds in the companies. The independent variable was a dummy one (change) that receives value 1 for the month of change in the listing segment of a given company or in the two following months to this change, and 0 for the two previous months to the change. The models were controlled by size (*nlt*) and profitability (*roa*).

**Table 5.** Regression Analysis by Considering all the Companies

nlaloc	Coef.	Robust Std. Errors	t	P>t	[Conf. Interval 95%]	
change	0.840	0.296	2.840	0.005	0.257	1.424
nlt	0.782	0.081	9.700	0.000	0.623	0.941
roa	-0.029	0.005	-5.540	0.000	-0.039	-0.019
constant	-13.387	1.809	-7.400	0.000	-16.958	-9.816
Obs.:	170					
R <sup>2</sup>	38.33%					
R <sup>2</sup> (adjusted)	37.21%					

Fonte: Research Results.

According to the results indicated in Table 5, it can be seen that there is a positive and statistically significant relationship at the 1% level between the allocation percentages of the fund portfolio in companies that had change in their listing segment and the month in which this change

occurred and the other subsequent months. This means that when a given company changes from one listing segment to another of greater requirement in terms of corporate governance, the stock funds are prone to increase the allocation percentage of their portfolios in these company stocks from the moment in which this change happens.

Additionally, the aim was to verify whether the stock funds present some different reaction to the changes in the company listing according to the listing segment. This is justified by considering that in spite of the fact that all the special listing segments of the Brazilian Stock Exchange appreciate unique rules of corporate governance, some segments have greater requirements than others do. Accordingly, two other regression analysis similar to the previous ones were implemented, but by using a dummy variable(NM) that divide the companies into two groups, receiving value 1 when the change in the listing segment of a given company was for the New Market segment, and 0 for the other cases (*Bovespa Mais*, Level 1 and Level 2).

The division of the companies according to the change in the listing segment with a specific categorization for the New Market is grounded by considering that, according to Procianoy and Verdi (2009), this segment presents greater concern with the corporate governance, inclusively requiring that the social capital of the company is comprised only by common stocks. Therefore, the category with the companies that had change in the listing segment for the New Market ( $NM=1$ ) had 85 observations and the category with the listing changes for the other segments ( $NM=0$ ) also had 85 observations. Table 6 presents the regression analysis taking this categorization into account.

It can be noticed in Table 6 that there is a positive and statistically significant relationship at 1% level between the sum of the allocation percentages of the fund portfolio in companies that had change in their listing segment for the New Market in the month in which the change occurs and in the two subsequent months. This means that the stock funds

tend to increase the allocation percentage of their portfolios in stocks of companies that change their listing segment for the New Market from the month in which this change occurs. The results for the changes in the other segments did not prove to be statistically significant.

**Table 6.** Regression Analysis by Considering the Companies by Group

nloc	Coef.	Robust Std. Errors	t	P>t	[Conf. Interval 95%]	
NM = 0						
Change	0.303	0.380	0.800	0.428	-0.454	1.060
Nlta	0.949	0.081	11.670	0.000	0.787	1.110
Roa	-0.036	0.005	-7.590	0.000	-0.046	-0.027
constant	-16.741	1.925	-8.700	0.000	-20.571	-12.911
Obs.:	85					
R <sup>2</sup>	56.04%					
R <sup>2</sup> (adjusted)	54.41%					
NM = 1						
Change	1.378	0.383	3.600	0.001	0.615	2.140
Nlta	0.371	0.091	4.070	0.000	0.190	0.552
Roa	0.267	0.042	6.300	0.000	0.183	0.352
constant	-5.012	1.921	-2.610	0.011	-8.834	-1.190
Obs.:	85					
R <sup>2</sup>	52.88%					
R <sup>2</sup> (adjusted)	51.44%					

Fonte: Research Results.

Taking into account that the changes in the listing segments of the studied companies were all for segments with greater corporate governance requirements, the observed results imply that the Brazilian mutual stock funds increase the percentage invested in the companies from the month in which the segment change occurs and in the two subsequent months (positive relationship between the change for special listing segment with stricter criteria in terms of corporate governance and the sum of the percentage invested by the funds in the firm). This means that the improvement in the company corporate governance levels seems to attract



investments from the stock funds. These results revealed themselves consonant with several studies in the literature on the subject matter, such as the studies by Bushee and Noe (2000), Aggarwal et al. (2005), Li et al. (2006), Ferreira and Matos (2008), Wahab et al. (2008) and Chung and Zhang (2011).

These findings, in addition to enlarging the discussion on the subject matter, with focus on the Brazilian market, and corroborating previous studies that had already presented striking results about the relationship between the institutional investors and the firm corporate governance practices, carry two important contributions. First, the evidence showed that, in fact, the investment funds in stocks are sensible to firm corporate governance standards, so that, despite their active posture to directly influence the governance practices, the funds may simply choose to purchase stocks from the companies that already had good corporate governance standards, as Bushee, Carter and Gerakos (2014) suggest. Second, the results showed the relevance of the special listing segments of the Brazilian Stock Exchange as, from the research observations, the stock funds seem to consider the information content from the classification of the companies in these segments for their investment decision-making.

When verifying the stock funds reaction to the changes in the company classification according to the listing segment, by dividing the sample among the changes for the New Market and for the other special segments (*Bovespa Mais*, Level 1 and Level 2), the results showed that the stock funds are prone to increase their participation in the companies that adhere to the New Market, while the change evidence for the other segments was inconclusive. Therefore, the changes for the New Market segment have proven to be more relevant to the asset allocation decisions of the investment funds. This can be explained due to the fact that the New Market is the segment with greater requirements in terms of corporate governance (Procianoy & Verdi, 2009).

## 5 Conclusion

This study aimed to analyze the investment fund reaction to the changes in the classification of the Brazilian public companies according to the listing special segments of the Brazilian Stock Exchange. All the companies that had some change in their listing segment from January 2010 to November 2018 were selected being the final sample comprised by 34 companies. In order to represent the investment funds, all the mutual funds of Brazilian stocks with available data in the period were considered.

By analyzing the compositions of the fund portfolios with stocks from the companies that had change in their respective listing segments in the month in which the change occurred and in the two following months in comparison to the allocated percentage in these companies in the previous months to the change, the results indicated that, from the moment in which the companies change to a listing segment with greater requirements in terms of corporate governance, the stock funds are prone to increase the investments in these company stocks. The regression analyses indicated a positive and statistically significant relationship between the variable for the sum of the percentage invested by the funds in the companies and the dummy variable for the month of change in the listing segment and the two following months.

Furthermore, the aim was to verify if these results differ according to the adopted listing segment. Hence, the companies were divided into two groups: one for the companies that had changes in the listing segment for the New Market, considered as the one having greater requirement in the corporate governance practices, and another group for the companies that changed their classification for other segments (*Bovespa Mais*, Level 1 and Level 2). The results indicated that, for the group of companies that adhered to the New Market segment, the positive relationship between the percentage invested by the funds and the months from the date of the segment change remained as such. In turn, the results for the companies that adhered to the other listing segments were inconclusive.

In view of such results, this study is expected to contribute to the literature by providing new perspectives on the effect that the corporate governance standards of companies have on the decision-making of the stock fund investments, especially in the Brazilian market, in which the studies about governance, by considering investors in their analysis, have the individual stockholders as the main focus. Moreover, the researches on corporate governance that contemplate the institutional investors in general aim to verify how such investors interfere or may exert changes in the corporate governance standards of companies. Thus, this study also provides a complementary view to this discussion, as it addresses quite a distinct perspective, that is, it discusses how the corporate governance standards affect the asset allocation decision-making of the stock funds.

As to the study limitations, the final sample included only 34 companies that had some change in the listing segments, because certain operations, such as for example, IPOs, did not provide previous data at the adherence moment in a certain listing segment, making the comparison of the invested percentage by the funds in the previous and in the following months to the segment change impossible. Another limitation is using only the stock funds as institutional investors, although this choice was grounded on the literature based on the study by Li et al. (2006), it is known that the institutional investors include many other entities in addition to the investment funds, such as banks, insurers, pension funds, and several other legal entities that invest in the financial market. Finally, due to the low number of changes of listing segments in the assessed period, the *Bovespa Mais* and *Bovespa Mais* Level 2 segments were included, which, unlike the New Market segment, have the incorporation of small and medium size companies that seek the opening of capital gradually as the goal instead of the improvement of corporate governance practices, thus characterizing a sample limitation.

For future studies, it is suggested that other factors that represent information content in terms of corporate governance and that may

influence the institutional investors decisions should be considered, perhaps even variables for different governance dimensions should be used, such as ownership structure and control, protection to minority stockholders, manager compensation, transparency, composition of the board of directors, among others, and how the investors react to each of these elements should be verified. Furthermore, the invested percentage by each fund should be assessed individually in the companies that presented some change in the special listing segment in order to further discuss the evidence that was found, as it was considered an aggregate measure in this research.

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