

Minority Shareholder Empowerment and Board Gender Diversity*

Luis Antonio Gioia Ettore[†]

Preliminary and incomplete. Please do not circulate.

Abstract

I study whether minority shareholder empowerment, enabled by the remote voting adoption, impacts board gender diversity through greater foreign shareholder participation and influence. I constructed a unique governance and activism dataset, including administrative and hand-collected data. In a natural experiment setting, the Difference in Differences approach estimates that the mechanism increased the voting turnout in 8 p.p. in the first year of adoption. The reform also allowed the creation of more monitoring committees. 98% of the users are international investors. Analyzing the investing patterns of four of the biggest funds and corporate diversity pushers world-wide, I find that they enhanced considerably the number of invested companies, starting during the remote voting adoption. Mainly, I document an increase of approximately 3 p.p. in the percentage of women on boards, representing nearly 50% of the pre-adoption ratio of female directors. The results have several policy implications related to minority shareholder engagement and corporate governance structures. In particular, they provide evidence on the potential of the participation of international investors with universal ownership as a mechanism to reduce the gap in the quality of governance practices between developed and emerging economies and address strategies to enhance corporate board gender diversity other than quota-related regulations.

Keywords: corporate governance; shareholder activism; minority institutional investors; remote voting; board gender diversity.

JEL Classification: G23, G30, G34, G38, M14.

* I gratefully acknowledge FAPESP for financial support, grant 2019/26940-6.

[†] Tilburg University & University of São Paulo. Email: luisettore@usp.br or l.a.ettore@tilburguniversity.edu.

1. Introduction, theoretical background and hypotheses

1.1. Context

A factor with potential relevance to the proper functioning of the governance system is the presence of shareholder activism (Gantchev, 2013). Activism refers to the attempt to change decisions that are unsatisfactory to shareholders without a change in control (Gillan & Starks, 2007), or it could be understood as an active monitoring with a possibility of interfering on management (Tirole, 2006).

Historically, the behavior of minority shareholders has been passive in most countries, including Brazil, possibly due to characteristics of their ownership structure, such as the prevalence of defined control and high ownership concentration (Sternberg, Leal, & Bortolon, 2011; Claessens & Yurtoglu, 2013; Judge, Gaur, & Muller-Kahle, 2010; Punsuvo, Kayo & Barros, 2007). Besides, research on shareholder activism in emerging markets is rare or absent (e.g., Chung & Talaulicar, 2010; Claessens & Yurtoglu, 2013).

Nevertheless, such structural barriers to activism might be retreating. As described by Guimaraes et al. (2019), ownership concentration has decreased in the Brazilian market due to the emergence of hybrid ownership structures and the requirements to list only voting stock (related to the highest stock exchange listing segment). These changes lead to a greater possibility to identify and investigate the shareholder activism in the Brazilian context. Furthermore, as argued by Chung and Talaulicar (2010), the phenomenon of globalization, especially in financial markets, was able to make shareholder activism, generally an Anglo-Saxon matter (Poulsen, Strand, & Thomsen, 2010), occur in other markets as well.

Greater activism can lead to the improvement of corporate governance practices and structures. Besides, as one of the unified conclusions from the engagement literature, the weaker the environment and companies in terms of governance, the greater the possibility of those firms being targeted by activists in order to make corporate changes and, consequently, being rewarded profitably in the long-term.

1.2. Corporate Governance and Investor Engagement in Brazil

Recent research on shareholder activism and its impact in Brazil confirm this changing behavior. Leal, Carvalhal and Iervolino (2015) report improvements in the governance of Brazilian companies in general during the period from 2004 to 2013. In line with this fact, Vargas et al. (2018), Collares (2020) and Maranhão, Bortolon and Leal (2020) find evidence consistent with the growth of activism in Brazil.

Pereira (2021) conducted extensive and rare interviews with major Brazilian institutional investors to understand whether and how they engage and how it affects the Brazilian corporate governance. Pereira (2021) finds that (i) investors do not want to be seen as activists and prefer to call themselves “collaborative activists”. Activism has a negative connotation since it is associated with confrontation, only large public pension funds use the term to describe their actions. (ii) Confrontation is avoided through prior scrutiny of companies’ governance and activism is a reactive defense mechanism because investors do not believe it is effective when companies have clearly defined controlling shareholders. (iii) Brazilian independent asset managers do not believe activism is effective because of the large presence of defined controlling shareholders with over half of the voting capital. They do not see it as their roles to take action to induce performance or governance improvement other than what might be achieved by convincing management in the ordinary course of business in private meetings. (iv) Consciousness

of voting as a fiduciary duty is increasing among stewardship signatories but accountability is incipient. Collaboration on votes is becoming more common but it is neither frequent, regular nor with the same parties. Independent asset managers have voting policies in place and some enact such policies based on beliefs, habit or for relationship reasons. (v) Pro-active activism is limited to and primarily associated with public pension funds proposing candidates to board seats, requesting separate elections for minority or preferred shareholders, and requesting the creation of a supervisory council.

These findings are key to observe how shareholder engagement happens in Brazil: mainly through private meetings – the so-called behind-the-scenes activism – while voting in Annual General Meetings (AGM) matters is seen as a possible threat of engagement that might be avoided by both the management and the Brazilian institutional investors in order to dissipate public confrontation and any harm to the firms' image. As importantly, the board and supervisory council are the most targeted bodies in most companies.

1.3. Remote Voting

The Brazilian financial system has undergone significant reform in recent years. One example is the requirement of greater disclosure since 2010, increasing both the quantity and the quality of mandatory information disclosed by companies. There was also new regulation regarding proxy requests and voting. Another relevant change was the adoption of remote voting (Guimaraes et al., 2019).

In convergence with a scenario of over a decade of new regulation aiming to improve the Brazilian corporate governance landscape, the Brazilian Securities Commission (CVM) regulated and implemented, through Instruction 561 of 2015, a

procedure for remote voting. As a channel with greater accessibility and lower cost, this mechanism allows shareholders to have a greater participation in the decisions placed at the general meetings by voting, submitting proposals or asserting presence, thus contributing to the improvement of governance mechanisms in the Brazilian market (CVM, 2014).

The regulation introduces the remote voting ballot form (form containing the matters to be voted), the possibility of inclusion of candidates and minority shareholder proposals, deadlines, and ways of sending the form, among other aspects. The adoption of remote voting was optional in 2016 (only six companies adopted voluntarily), mandatory for companies included in the IBRX-100 and/or Ibovespa indices in 2017, and from 2018 onwards, mandatory for other publicly traded companies registered in category A (companies authorized to trade any public securities) and that have publicly traded stocks. The remote voting is not an electronic or online voting. Investors must fill the ballot form out and then return it to the company.

Over time, some countries allowed shareholders to vote electronically or by mail, such as France, Germany, Italy, the Netherlands and Spain (Network Briefing, 2017), as well as the United States (SEC, 2012) and China (Gao et al., 2019). However, in these countries, companies are not obliged to use such mechanism and corporate laws might hinder the use of online voting (Gao et al., 2019). With the exception of China (Gao et al., 2019), I have not found, in the literature of the countries mentioned above and others, studies that attempt to specifically investigate electronic or mail voting as a mechanism of investor activism and governance improvement. Gao et al. (2019) provide supportive evidence regarding this literature gap.

Guimaraes et al. (2019) claim that the enactment of initiatives such as remote voting could be strategically relevant due to the increasing importance of foreign institutional shareholders. It would be important to reduce bureaucracy (for presenting proposals and voting, ultimately) and to improve companies' regulatory disclosure. Such developments could lead to greater activism. Consistently, Poulsen et al. (2010) concluded, investigating activism in the Swedish market, that foreign ownership may increase activism. Consequently, there could be more efficient corporate governance practices and more valuable firms. Furthermore, as a policy debate, it is important to raise the question of how to incentivize shareholders to be more active (McCahery et al., 2016). The remote voting mechanism adopted in Brazil could address some of the obstacles discussed by McCahery et al. (2016) that make investor less active, in particular, lack of incentive to engage (costly mechanism) and legal barriers.

According to Pereira (2021), the voting process in Brazil has improved considerably with the introduction of remote voting, but it is still expensive. Mainly, remote voting made it easier for foreign investors to participate and decreased the costs associated with shareholder participation. However, such cost reduction remains limited because of further bureaucratic and legal hurdles.

1.4. Minority Shareholder Empowerment

Larger firms typically separate ownership and control functions. Thus, owners delegate a major part of the decision-making to managers as agents. These economic agents have conflicting interests and objectives, generating agency problems. Given this conflict of interests and the difficulty to monitor management, in order to solve these problems, owners incur in monitoring costs (Jensen & Meckling, 1976). Agency Theory addresses such relationships between economic agents.

There are several corporate governance mechanisms carrying specific purposes, with a general objective being to reduce the harmful effects of conflicts of interest among stakeholders in the organizations (Silveira & Barros, 2008). For instance, some mechanisms contribute to the alignment of the interests of the parties through incentives to the agents, while others seek to increase monitoring, preventing agency conflicts from producing negative outcomes, especially from the point of view of the owners. Among others, shareholder engagement is a possible governance mechanism (Sharfman, 2015). That is, investor activism may help remedy agency problems (Marler & Faugère, 2010).

As Gillan and Starks (2007) describe, activism aims to deal with agency problems by trying to intervene in the decision-making process and to improve the company's decisions, avoiding possible losses due to choices that are unfavorable to shareholders in general or to groups of shareholders in particular. Activists will attempt to raise awareness and monitor managers to improve their firms' social or financial performance (Chung & Talaulicar, 2010).

Activist shareholders incur in private costs (Admati, Pfleiderer & Zechner, 1994). Such costs derive from the participation and monitoring of shareholders in order to reduce the conflicts of interests between management and shareholders, and/or controlling shareholders and minority shareholders. Consequently, there is a trade-off between the returns provided by the participation and monitoring and its costs of implementation (Shleifer & Vishny, 1986).

Regarding the costs of shareholder activism, Gantchev (2013) investigates if activism provides positive net returns to the activists through the mitigation of agency costs. The author estimated the costs based on three approaches that are well-known in the activism literature: demand negotiations, board representation, and proxy contests.

An important insight from the analysis by Gantchev (2013) is that subtracting the costs, the average abnormal return is reduced by two-thirds. Thus, implementation costs should play a relevant role in the decision-making of activists.

The remote voting mechanism enables greater participation while it might reduce the costs of the activist strategies (Guimaraes et al., 2019). The possibility of voting at a lower cost may foster the engagement of larger investors, as well as provide incentives to participate to smaller shareholders by decreasing the free-rider problem.

Gao et al. (2019) study whether online AGMs can increase the participation of shareholders in corporate governance. The authors find that (i) online participation provides a cost-effective way to engage in corporate governance issues, (ii) online AGMs can increase the participation of investors, especially minority investors, as well as improve corporate governance and (iii) there is evidence of significant positive stock returns surrounding the initiation of online meetings.

Therefore, I expect that the remote voting increases shareholder activism, and consequently, there should be an improvement on corporate governance structures and practices, as well as an increase in the firms' value. For instance, a greater participation could lead to relevant governance achievements such as more minority proposals to be voted, more representative boards, greater management sensitivity to the remuneration proposals etc., and these improvements could be value increasing.

More specifically, this research investigates the potential for minority shareholder empowerment caused by such reform. That is, minority shareholder activism enabled and empowered by the implementation of remote voting. Relatedly, it is relevant to observe whether it is possible to mitigate both agency problems: (i) minority shareholders and management and (ii) minority shareholders and controlling shareholders. In contexts with

concentrated ownership and relatively weak governance, controlling shareholders may have strong incentives and opportunities to divert corporate resources to their private interests (Jiang, Lee & Yue, 2010).

Dressler (2020) shows that the dynamics of activism and voting power in an environment with concentrated ownership might enforce specific characteristics as well as engagement strategies to achieve their goals. In particular, Dressler (2020) finds that the stronger the shareholder, the higher the probability that they will vote in favor of a management sponsored proposal. Therefore, minority shareholder engagement happens through pre-vote negotiations. Furthermore, the advancement of minority shareholder protection matters operates through proposal selection, rather than through direct voting.

1.5. Foreign Investor Engagement

I study the role of foreign investors as the sub-group of minority shareholders that is most likely to lead engagements and possibly private negotiations in the wake of the introduction of the remote voting mechanism. This hypothesis is reinforced by the historically passive behavior of Brazilian institutional investors. In addition, the incentive to participate provided by the remote voting rule should be stronger for international investors, since domestic shareholder face lower costs to attend general meetings in person.

In this context, foreign shareholders might be able to bring better governance practices to the Brazilian corporate governance environment and influence Brazilian minority investors towards a more active behavior. There's evidence that institutional investors promote good corporate governance practices around the world. Moreover, institutional investors affect not only which corporate governance mechanisms are in place, but also their outcomes (Bena et al., 2017; Aggarwal et al., 2011).

Accordingly, Maranhó, Bortolon and Leal (2020) describe that minority investors should not construe domestic institutional investors as evidence of strong external monitoring in Brazil. On the other hand, foreign institutional investors seem to have a positive impact on the governance practices of companies.

There were in recent years a series of coordinated statements among key shareholders to signal consistently the movement towards sustainable and responsible investing, such as: (i) nearly 2,000 CEOs have pledged to advance diversity, equity and inclusion (DEI) actions within their firms (PwC, 2021); (ii) more than 3,000 investors in 2020 signed the United Nations' Principles for Responsible Investment (UNPRI)[‡] network, committing to incorporate ESG issues into investment analysis, decision-making processes, and ownership policies; and (iii) in 2019, nearly 200 CEOs that compose the Business Roundtable issued a statement[§] as to redefine the purpose of American corporations in order to serve all of the society, embracing a commitment to all stakeholders, presented as customers, employees, suppliers, communities and, then, shareholders.

One of the main examples of the influence of foreign shareholders in their invested companies' governance structure is the enforcement of greater board diversity. Major investors have targeted specifically such issue. Since 2017, BlackRock, Vanguard and State Street, the 3 biggest institutional investors world-wide ("The Big Three") launched campaigns encouraging companies to increase board gender diversity. Gormley et al. (2022) studied such setting and estimate that their voice led firms to add at least 2.5 times as many female directors in 2019 as they had in 2016. Another major investor, Norges Bank Investment Management (NBIM), the world's largest sovereign wealth fund,

[‡] <https://www.unpri.org/pri>

[§] See: <https://opportunity.businessroundtable.org/wp-content/uploads/2020/06/BRT-Statement-on-the-Purpose-of-a-Corporation-with-Signatures.pdf>

required that their invested companies to have at least 30% of female board members. Using this setting, Liang and Vansteenkiste (2022) find positive returns for firms with a female director shortage, especially in firms with low institutional ownership.

Such effort to enhance board gender diversity might influence other shareholders as well as other environments. Therefore, I analyze whether those waves of investor engagement towards better governance practices can lead to a more gender diverse boardroom in Brazil.

1.6. Board Gender Diversity

An essential component of corporate governance is shareholder representation in the board of directors. If the influence of investors on directors' elections is weak, so will be the link between owners and managers (Cai, Garner, & Walkling, 2009). Fos, Li and Tsoutsoura (2018) find that shareholders pay attention to directors' elections, and such scrutiny have relevant implications for corporate governance. Shareholders, thereby, use voting as a channel of communication with the boards of directors (Yermack, 2010). The analysis of how boards affect corporate polices might be particularly relevant in emerging markets because boards of directors may be more easily captured by management and controlling shareholders in such environments (Giannetti et al., 2015).

The duty of the board of directors, especially monitoring, may depend largely on the characteristics of the directors (Adams, Hermalin, & Weisbach, 2010). Arguably, the demographic aspect of the board that has been receiving significant research attention is gender. Although there's mixed evidence in the literature on the impact of board gender diversity on firm value, the prevailing perspective holds that women directors can diversify the set of boards' expertise more than do their male counterparts, bring unique skills to corporate boards and enhance boards' advisory effectiveness by contributing

diverse skills (Kim & Starks, 2016). Moreover, the presence of female directors is evidenced to increase both social and environmental performances (Ginglinger & Gentet-Raskopf, 2021; Hsu, Li, & Pan, 2022).

Importantly, Marquardt and Wiedman (2016) find that companies with low board gender diversity attract activists. Regarding the profile of investors, they evidence that both financially and socially driven activists are successful in enhancing gender diversity in target firms and without the need of a formal shareholder proposal.

1.7. Hypotheses

Given the scope of my research, I delineate three research hypotheses. First, the expectation is that the remote voting implementation leads to greater minority shareholder participation. In a context with high ownership concentration, an easier way to engage may positively affect minority engagement:

H1: Remote voting increases minority shareholder participation.

Additionally, due to the historically low level of activism from Brazilian minority shareholders, and mainly, the significant reduction of voting costs of international investors provided by the remote voting reform, it is expected that international investors lead the remote voting usage:

H2: Remote voting increases foreign shareholder participation more than domestic shareholder participation.

Finally, with the possibility of foreign shareholders bringing corporate governance expertise and better practices, it is expected that they target the issues that are the most dissonant from an international high-level standard of corporate actions. Given the enforcement through world-wide campaigns by lead investors and the low levels of

board gender diversity, it is expected that the minority shareholder empowerment provides more opportunities for female directors in Brazilian companies:

H3: Remote voting increases board gender diversity.

1.8. Contribution and Novelty of the Research

To the best of my knowledge, this study is the first aiming to provide a causal link between minority shareholder empowerment and board gender diversity. Furthermore, the hypothesized mechanism enabling this connection, namely, the threat of engagement by foreign shareholders taking advantage of a remote voting procedure, has not been investigated yet. Relatedly, this research addresses an important open and inconclusive debate about the best approach to increase board gender diversity, including government regulations and quotas.

Regarding the research data, I built a unique and rich dataset, including administrative and hand-collected data, information from domestic and international platforms, and data with a high level of detail, in firm-, director- and shareholder-level.

Furthermore, this research addresses the ongoing debate on the challenges regarding the connection of international investors and the casting of their votes. Iliev et al. (2015) argue that regulators around the world must improve the ability of shareholders to vote and that global investors should be able to cast their votes efficiently. Such phenomenon is fostered by the globalization of institutional activism following the fast-growing importance of institutional investors in international capital markets (Chung & Talaulicar, 2010). Relatedly, Guimaraes et al. (2019) argue that the implementation of remote voting in Brazil could be strategically relevant to increase the participation of foreign institutional shareholders.

Finally, this is one of the first investigations on the topic of remote voting and its effects, a topic that has not been well studied in the international literature on shareholder activism. Besides, in terms of practical implications, it will be an opportunity to empirically observe whether and how the behavior of investors is affected by the prospect of exerting greater monitoring and control at a lower cost. That is, I aim to investigate whether this new regulation makes investors more active (McCahery, Sautner, & Starks, 2016) and its implications for corporate governance. The results from this investigation might be of interest to several stakeholders, including practitioners, Brazilian regulators (interested in knowing if it is working and how it could be improved) and international regulators (studying the adoption in other countries, as a corporate governance improving policy).

2. Identification strategy and methodology

2.1. Difference in Differences (DiD)

I outline a natural experiment exploiting the exogenous variation provided by the CVM requirements. The period before the mandatory remote vote will comprise a 6-year period (2011 to 2016) or a 3-year period (2014 to 2016) – this strategy was chosen due to the fact that most public corporate governance information about the Brazilian capital market started in 2010, and therefore, the first years of corporate governance disclosure might have flaws and certainly have missing values - and the post-treatment period is the year of 2017. The treatment group is composed by the companies that mandatorily adopted the remote voting in 2017. The companies that had to adopt mandatorily in 2017 are the firms included in the Ibovespa and/or IBRX-100 indices in the year when the regulation was published. The remaining companies comprise the control group.

The DiD model is shown below:

$$y_{i,t} = \beta_0 + \beta_1 Time_t + \beta_2 Indices_i + \beta_3 RemoteVote_{i,t} + \gamma^k X_{i,t}^k + \varepsilon_{i,t}. \quad (1)$$

Where:

- y is the dependent variable, being in this analysis: voting turnout at AGMs and the percentage of women on board;
- $Time$ is a dummy variable equal to 1 in the year 2017 and 0 during the 3-year or 6-year period;
- $Indices$ is a dummy variable equal to 1 for companies included in the Ibovespa and/or IBRX-100 indices and 0 otherwise;
- $RemoteVote$ is a dummy variable resulting from the interaction of $Time$ and $Indexes$. β_3 represents the effect of remote voting on each dependent variable y , for each company i and year t ;
- X^k represents the vector of k possible control variables, for each company i and year t .

The parallel trends assumption is the main identifying assumption of the Difference in Differences strategy. If the parallel trends assumption does not hold in the baseline model (i.e., the regression including only $Time$, $Indices$, and $RemoteVote$), it is relevant to control for the variables that may lead to the differential trending of the treatment and control groups. According to Goranova et al. (2016), the literature points to potentially useful control variables in activism studies, namely: profitability, industry, liquidity, and leverage.

In addition, in a setting with multiple pre-treatment periods, it might be helpful to use a linear control to capture the unparallel evolution regarding both groups. Technically, this approach allows the possibility of heterogeneous trends. Therefore, in a setting with firm and year fixed effects, there could be added in equation (1) the following control variables: $LinearControl_t$, where year 1 = 1, year 2 = 2, ..., year N = N, and the interaction between $LinearControl_t$ and $Indices_i$, leading to the main control variable $HeterogeneousTrends_{i,t}$ (Wooldridge, 2021).

2.2. Regression Discontinuity Design (RDD)

To identify the causal effect of the remote voting implementation, I will also apply a Regression Discontinuity Design. In this research, the discontinuity relates to the inclusion or not of companies in the IBRX-100 Index in 2017, since being part of the IBRX-100 and/or the Ibovespa Index were the criteria determined by CVM for the mandatory adoption of the remote voting mechanism in the first year (2017). IBRX-100 is composed by the 100 stocks (tickers) with the highest Trading Index (a continuous Index computed by the São Paulo Stock Exchange (B3), that takes into account the number of trades and the volume of trading). Thus, the Trading Index is the running variable in my approach. It is worth noting that 94 companies were forced to adopt (instead of 100) because some companies had two tickers in this index. In addition, all companies included in the Ibovespa index were also included in the IBRX-100 index.

The critical identifying assumption is that the companies whose Trading Index are immediately below the threshold for the inclusion in the IBRX-100 index are comparable to the those whose Trading Index are immediately above the same threshold. That is, companies cannot precisely manipulate their assignment in the IBRX-100 index in order, for example, to bypass the CVM regulation. I could then compare treated (i.e.,

mandatorily adopting remote voting) and untreated companies with similar Trading Index. Therefore, the reduced-form RDD model can be stated as follows:

$$Y_i = \tau(T_i \geq c) + \rho(T_i) + \varepsilon_i, \quad (1)$$

where Y_i is the dependent variable; T_i is the company i 's Trading Index; c is the threshold (i.e., the minimum Trading Index for inclusion in the IBRX-100 index), that is, $(T_i \geq c)$ is a dummy variable equal to 1 for companies that have a Trading Index equal to or greater than the threshold, and are therefore included in the IBRX-100 Index (composing the treatment group) and 0 otherwise; ρ is a nonparametric function and ε_i is a random term. ρ captures the systematic relationship between the Trading Index and the outcome of interest and the coefficient τ represents the discontinuity in this relationship around the 94th company's Trading Index. That is, τ is the effect of being included in the IBRX-100 and therefore of being obliged to adopt the remote voting.

3. Description and treatment of data, sample and setting

By 2019, 334 companies had adopted the remote voting mechanism. Table 1 shows the criteria for the remaining sample of firms:

Table 1 - Sample

Exclusions	2017 adopters	2018 adopters	Total
Full sample	94	240	334
Voluntary adoption	3	7	10
Interrupted use	2	6	8
Late adoption	0	9	9
Unmatching TI score	1	0	1
Remaining sample	88	218	306

All 2017 adopters complied correctly. 27 companies were excluded by voluntary adoption, interrupted use and/or late adoption. After that, I ranked all companies by the Trading Index to observe whether there would be an overlap between treatment and

control groups, and only 1 company from the treatment group had a TI score that did not match their group by being after the 88th company with the control companies, and, thus, was excluded. Regarding the data and its novelty, Table 2 shows their description and respective source:

Table 2 - Data Description

Variables	Source
Remote voting usage	B3 administrative database
Voting turnout	Hand-collected (AGMs minutes)
Women on board (company level)	Comdinheiro
Women on board (director level)	Comdinheiro, hand-collected (CVM ref. form)
Women on board (Argentina, Chile, Colombia, Peru and Mexico)	BOARDEX
Governance Segments, Supervisory Council and Audit Committee	Comdinheiro
Shareholder ownership (>5%)	Comdinheiro, hand-collected (CVM ref. form)
Shareholder ownership (all)	Thomson Reuters-Refinitiv, hand-collected
Control Variables, Trading Index	Comdinheiro

One important concern from this type of research design is that treatment and control groups might significantly differ in ways that hinder the identification of the causal parameters of interest. I intend to show that, in terms of corporate governance structure, both groups can be made comparable. Using the properties and characteristics of the data and companies of the sample, I propose to use suitable sub-samples as control groups in order to mitigate the heterogeneity between treatment and control groups. Although the implementation through index companies has a size and liquidity bias, I argue that the following 88 companies can be used as a comparable control group.

Table 3 - 88/88 Approach

Governance Listing Segment	Treatment Group (1st 88)	Control Group (2nd 88)	Others (130)
Lowest level (Corporate Law)	6,80%	25,00%	93,00%
Mid-levels	31,80%	10,20%	7,00%
Highest level (Novo Mercado)	61,40%	64,80%	0,00%
Total	100,00%	100,00%	100,00%

There are 6 levels of corporate governance listing segments in the Brazilian market, from the basic level, where what is required is essentially the Brazilian corporate law, to the highest level called Novo Mercado. Intermediate levels (i.e., Bovespa Mais, Bovespa Mais Nível 2, Nível 2 and Nível 1) intend to accommodate the different characteristics and profiles of the listed companies. The mandatory rules of the Novo Mercado include ownership structure with only voting shares, 100% Tag Along, at least 2 or 20% of independent directors, at least 25% free float or 15% average daily trading volume and simultaneous disclosure in English and Portuguese of relevant information.

Ranking only by the Trading Index, as a liquidity measure, the first 88 companies from the control group have a similar structure in terms of governance listing segments compared to the mandatory treatment group (e.g., 60% of each group are Novo Mercado companies). As importantly, it is worth noting how different governance-wise is the remaining set of non-treatment companies, with more than 90% of them applying only to the corporate law. Including these companies in the control group could therefore hinder the identification of the effect of the remote voting.

4. Empirical analysis

4.1. Shareholder participation and remote voting

I have empirically analyzed the minority shareholder participation, that is, voting turnout (quorum) at the mandatory general meeting, where the most important matters are usually discussed, including distribution of profits, compensation package and board elections. In a context with high ownership concentration, it is possible to assume that any relevant variation in the AGMs quorum represents the voting turnout of minority investors. Therefore, the first-year effect is a possibility to observe whether the remote voting was used to empower minority investor.

Table 4 – DiD estimates for voting turnout

Equations	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)	(XI)	(XII)	(XIII)	(XIV)
RemoteVote (%) (Robust standard error)	7.33*** (2.29)	5.76** (2.57)	8.60*** (2.39)	6.89** (2.66)	6.31** (3.01)	7.96** (3.29)	6.13** (3.08)	8.13** (3.16)	9.61*** (3.18)	6.66* (3.53)	8.08*** (1.94)	9.19*** (2.01)	9.20*** (2.75)	10.55*** (2.84)
Full Sample	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No
88/88 Approach	No	No	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes	No	No
NM companies as sample	No	No	No	No	No	No	No	Yes	Yes	Yes	No	No	Yes	Yes
RV users as treatment group	No	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	No	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Allowing Heterogeneous Trends	No	Yes	No	Yes	No	No	Yes	No	No	Yes	No	No	No	No
3-year pre-treatment period	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes
6-year pre-treatment period	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Number of Observations	957	957	911	911	615	584	584	439	413	413	513	473	328	299
Average voting turnout pre-adoption	70.69	70.69	69.43	69.43	68.10	67.61	67.61	66.39	66.24	66.24	70.98	69.43	69.05	66.92

Notes: The table reports OLS regression estimates of the AGMs' turnout (%) (number of voting shares that voted/total of voting shares) using a DiD identification strategy. RemoteVote_{i,t} is the variable that represents the effect of remote voting on the AGM quorum (voting turnout), obtained as the interaction of Time_t (post-adoption dummy variable) and Indices_i (dummy indicating participation in a stock exchange index whose components mandatorily adopted the remote voting mechanism). In a Firm and Year Fixed Effects setting, the last two dummies are dropped. Full sample comprises 306 companies. 88/88 Approach regards the use of a sub-control group of 88 companies that both treatment and control groups share similar corporate governance structures. NM companies as sample refers to only using firms listed in the highest corporate governance segment in the Brazilian market, Novo Mercado, summing up to 111 companies, being 54 from the treatment group. Using RV users as treatment group, the 16 companies that had no investors using the remote voting mechanism are excluded, therefore, the treatment group totalizes 72 companies. Firm and Year Fixed Effects are used in all equations. Control variables account for firm size, liquidity, profitability, and leverage. To argue the allowance of heterogeneous trends, it was added the following control variables: LinearControl_t, where year 1 = 1, year 2 = 2, ..., year N = N, and the interaction between LinearControl_t and Indices_i, leading to the main control variable HeterogeneousTrends_{i,t}. 3-year pre-treatment period refers to 2014 to 2016 and 6-year pre-treatment period refers to 2011 to 2016. This strategy was implemented due to the possibility of low-quality data during the first years as well as missing values given that most corporate governance data in Brazil started to be disclosed in 2010, therefore, there could be a learning curve by the companies. As a matter of fact, for the variable quorum, the period 2011 to 2013 had missing values in approximately 45% of the observations, while the period 2014-2016 had 27%. For example, some companies, specially before 2016, disclosed that: “shareholder representing more than 2/3 of the voting capital”, “more than 50%”, “the legal minimum quorum”, etc. Therefore, I could not assume what quorum it would be. In one type of writing, I could collect: “shareholder representing 100% of the voting capital”, “unanimity”, “totality of voting capital”. In all equations it is used a 1-year pos-treatment period (2017). Average voting turnout pre-adoption regards the average quorum of the referred pre-treatment period for the treatment group. Standard errors (in parentheses) are clustered at the firm level; p-values are described as: *** p<0.01, ** p<0.05, * p<0.1.

I find consistent evidence that the remote voting implementation increased shareholder participation, thus becoming a potential mechanism for minority shareholder empowerment. Using a variety of settings, samples, control groups, pre-treatment periods, and control variables, as shown in Table 4, I estimate that the mechanism is able to enhance the overall participation in general meetings by about 8 p.p. considering the companies that adopted the remote voting in the first year of implementation (2017).

From the 88 companies of the treatment group, 16 companies did not receive any remote voting ballot form from their investors. If the remote voting has a real effect on the outcome, it is reasonable to expect that, when analyzing the 72 companies that have the most engaged investors (RV users), there will be stronger results compared to the ones with the full treatment group. Interestingly, with companies that have remote voting users, the effect has a greater coefficient (8.2 p.p. versus 7.47 p.p.) as well as with greater statistical significance.

It is also worth noticing that the high level of ownership concentration preconized by the literature and anecdotal evidence are confirmed in my estimates. The average quorum pre-adoption is around 68% for the treatment group, thus, the remote voting effect increased more than 10% on average, with the possibility to reach 15% of participation enhancement. These results are even more meaningful when observing that this increase is due to minority shareholder participation (given that the controlling shareholders vote every year). The quorum pre-adoption for the control group is considerably higher, as one would expect, averaging 78%, ranging from 75% with Novo Mercado companies to 83% with the full sample, another compelling evidence of the ownership concentration in the Brazilian market.

Related to the voting rates in the AGMs' matters, although most treated companies in the first year of adoption did not have such items approved by unanimity, presenting

some level of dissident voting, approval percentages remain high. For instance, considering one of the most controversial matters, the management compensation package, it had around 94% of approval on average. This reinforces the argument that minority investors use their voting right, fostered by the remote mechanism, primarily as a threat of engagement instead of a publicly confrontational instrument. The main reason is that creating a public fight with a steady controlling shareholder and management, despite working with them, may have a negative cost-benefit balance.

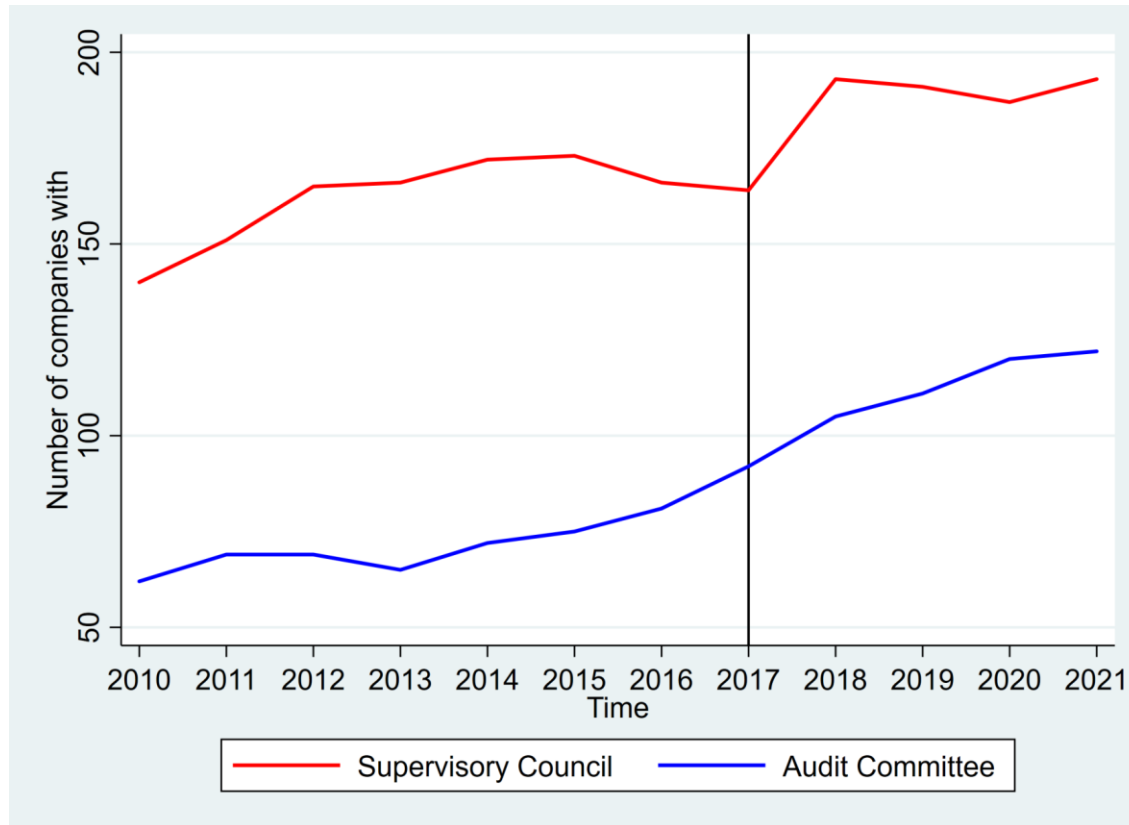
One of the possibilities brought by the remote voting ballot form is the installation of the supervisory council⁵. It is a body enabled by the Brazilian corporate law which has extensive powers to investigate the company's financial reporting and can state their opinion at AGMs. The supervisory council can be a permanent or temporary body. It is permanent when such provision is included in the firm's bylaws. Otherwise, it is temporary when created on demand by minority shareholders representing 10% of the common (voting) shares or 5% of the preferred (non-voting) shares. It expires at the next AGM, but the shareholder demand for the supervisory council can be renewed at that meeting.

Specifically, the Brazilian corporate law concedes the following rights regarding the supervisory council: (i) minority shareholders holding at least 10% of the voting shares have the right to elect one member; (ii) holders of preferred shares have the right to elect one member; (iii) the controlling group can elect the remaining members, in a number equal to those elected by minority shareholders plus one, and thus can control the supervisory council, if it chooses to; (iv) even if they are outvoted, minority shareholder

⁵ Supervisory council can be seen in the literature as fiscal board or a combination of those words: supervisory board or fiscal council.

representatives can demand to inspect the company's books, resulting in a possibility to harm the public image of the company's executives and controllers.

Figure 1 – Evolution of monitoring bodies



In Figure 1, I compare two monitoring bodies that differ in two core aspects: installation and subordination. The supervisory council is a body requested by minority shareholders and unsubordinated, whereas the audit committee is not requested by shareholders, being installed by and subordinated to the board. Using the evolution of the audit committee installation as a baseline, it is possible to observe that the number of supervisory councils created seems to have been directly impacted by the remote voting implementation, changing its historical level of around 150 companies to around 190 companies, which remained relatively constant from 2018 on. The number of audit committees has a linear growth but no spike in its evolution, as expected, since its creation should be unrelated to shareholder actions and the remote voting influence. As this

analysis comprises the full sample, it is expected that most installations occur from 2018 on, the first year of adoption of more than 70% of the companies.

This is supporting evidence for the use of remote voting as well as of the argument of a non-publicly confrontational strategy of engagement. With a much less costly option to request the installation of a monitoring body, minority investors exerted their right swiftly. I argue that more than the effectiveness of the monitoring role of the supervisory council itself, the continuous request of installations symbolizes the vigilant presence and awareness of minority investors towards more accountable and less expropriating management and controlling shareholders.

4.2. Foreign Investor Engagement

Regarding the number of voting ballots returned by investors, there was a steady increase overtime. Few ballots were returned in 2016 (optional adoption year). There was an increase in 2017, as companies included in two stock exchange indices had to adopt the remote voting, and from 2018 there was a significant increase as all listed companies should be able to provide such voting channel to their investors. The trend from 2020 on was likely impacted by the Covid-19 pandemic, as it fostered remote participation.

Relatedly, the evolution of the number of shareholders that used the mechanism increased in a much lower rate. It is reasonable to assume that the core group of investors remain the same through the years (the São Paulo Stock Exchange does not provide information at the investor level, disclosing only the aggregated data). For example, comparing 2017 and 2018 as the first years of adoption, while there was an addition of more than 40,000 RV ballots returned, the increase in the number of investors participating was less than 500, resulting in a spike of used RV ballots per shareholder. That is, the same investors that could vote in 94 companies, later could vote in all their invested companies in Brazil.

Observing their voting behavior, foreign RV users utilize it approximately 20 times a year. It is important to mention that this average ratio cannot be directly related to the number of companies because Brazilian companies can hold more than one general meeting a year – the mandatory one by April, and others for discretionary matters. When isolating only the mandatory AGMs, nearly 4,000 ballot forms were used in 2017, and around 30,000 from 2018 onwards. Thus, the avid foreign remote voting user would vote for around 10 companies on average every year.

Table 5 - RV investor usage

Year	Number of RV ballots	Number of Investors	RV ballots per Investor
2016	528	419	1.3
2017	11,694	2,481	4.7
2018	53,414	2,928	18.2
2019	60,554	3,336	18.2
2020	76,750	3,732	20.6

Table 6 presents the stable prevalence of foreign investors as the very main users of the remote voting mechanism, in accordance with my research hypothesis. Looking at which countries compose such percentages, US investors are, with significant distance, the main users, followed by European minority shareholders.

Table 6 - RV investor usage by country

Country	2017	2018	2019	2020
All foreigners	98.7%	98.9%	98.6%	98.2%
United States	63%	60%	59%	56%
Ireland	8%	7%	7%	7%
Great Britain	6%	7%	7%	7%
Canada	6%	7%	7%	6%
Luxembourg	4%	4%	4%	5%
Australia	3%	4%	4%	4%
Japan	3%	2%	2%	3%
Cayman Islands	1%	1%	2%	2%
Brazil	1%	1%	1%	2%
Netherlands	1%	1%	1%	2%

Investors from 29 different countries used the remote voting in 2017, 39 in 2018 and 2019, and 45 in 2020. In the period from 2017 through 2020, investors from 54 countries used this mechanism. Regionally, North America leads with 63.9% of the returned remote voting cards, with a relevant difference from Europe, with 23.2%. Asia and Oceania combined account for 9,1% of the remote voting usage. South America-based investors returned only 1.7% of the voting ballots during this 4-year period.

Analyzing the profile of investors that are using the remote voting as a mechanism of participation, Anglo-Saxon cultures prevail, where shareholder engagement is typically more frequent. Almost all the users of the remote voting are institutional investors. As hypothesized, due to the remote voting design and the reduction of participation cost for international shareholders, they are the key users of the mechanism. Brazilian minority investors, on the other hand, when they intend to participate, as the engagement culture in Brazil is underdeveloped, they rather attend AGMs in person.

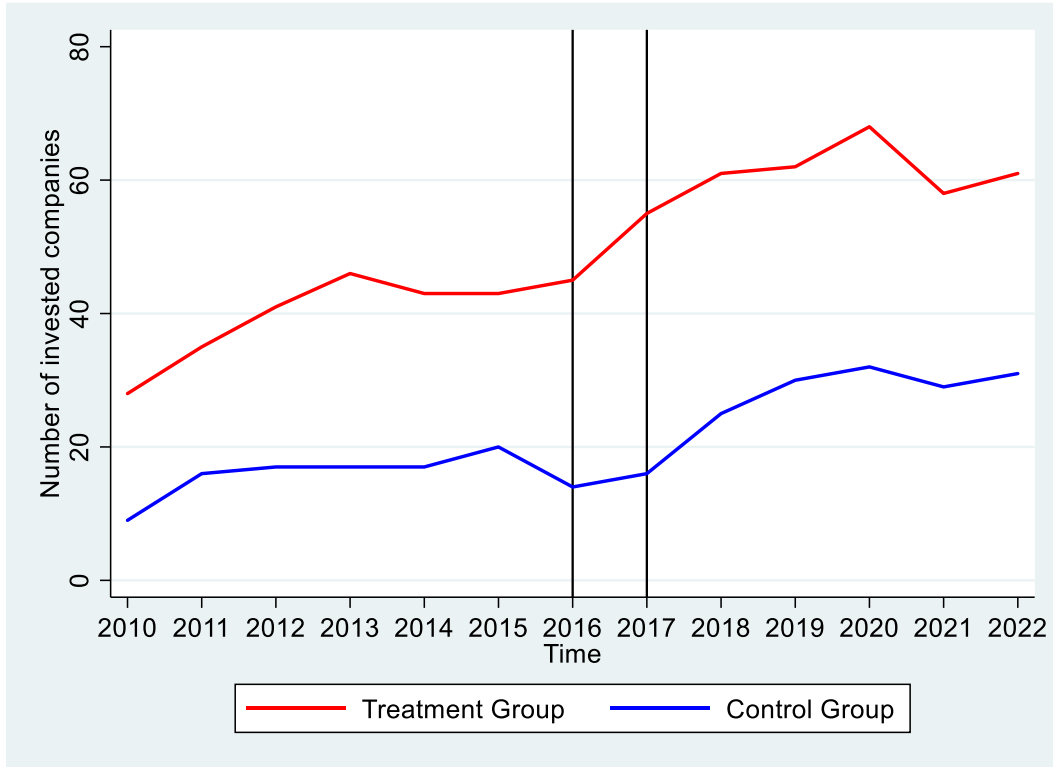
In order to study the behavior of the most socially-engaged investors in the Brazilian market, I analyze the investment strategy of the “Big Four” (a term I created to refer to the well-known “Big Three” – BlackRock, Vanguard and State Street – in addition to Norges Bank Investment Management, the world’s largest sovereign wealth fund) in Brazilian companies, having at least 1% of the voting shares⁶.

All these four funds have not only policies to directly increase board gender diversity, but also have been known to publicly address the need to achieve socially-oriented goals as well as enforced their campaigns upon their invested companies. The remote voting, consequently, is a strong possibility to foster such engagement pattern. It is noticeable in Figure 2 that both groups evolve very similarly, the spike in both curves

⁶ The data was collected for March of every year, as the AGM season occurs in April in Brazil. Thus, any possible change in minority ownership is likely to be related to the right of voting.

happens in the first year of adoption of the mechanism for each group and, after the implementation, there's a significant increase in the amount of invested companies by those four major shareholders, reaching the peak of 100 companies in 2020.

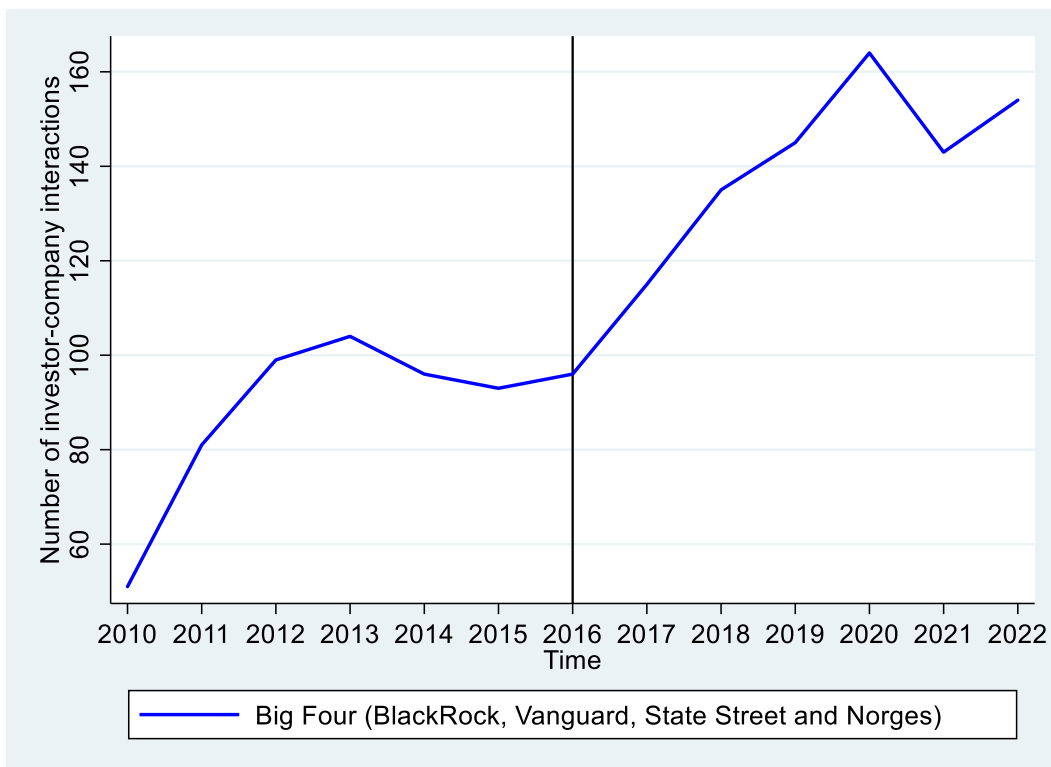
Figure 2 – Number of invested companies by the Big Four



Furthermore, it is worth mentioning that the percentage of voting shares held by the Big Four remains steady over time with a slight increase, fluctuating between 2% (before the adoption) and 3% (after) of the voting ownership structure on average. This indicates that the efficacy of minority shareholder engagement is not necessarily related to the size of the position, especially in Brazil with high levels of controlling ownership, where having a bigger position might not symbolize greater power as they would remain being outvoted. Instead, in an environment like the Brazilian, it might be a better strategy to hold a smaller but significant position and engage through private negotiations with management while maintaining the threat of dissident voting and negative public campaign, in this case, fostered by the remote voting mechanism.

Lastly, Figure 3 shows that there is a relevant level of overlap regarding the target companies of the four funds. On average, more than 45% of the target companies have more than one out of the four socially-engaged shareholders. Therefore, their joint ownership and effort to enforce similar policies, being coordinated or not, can also catalyze the outcomes towards a more diverse boardroom.

Figure 3 – Number of investor-company interactions



4.3. Board Gender Diversity

In addition to the attention that more gender-diverse boardrooms have been receiving both by investors and CEOs aiming to signal socially-engaged actions worldwide and in Brazil, Brazilian society and media⁷ have been increasingly focusing on the debate regarding the lack of women on leadership and decision-making positions as well as the recent enhancement in such low numbers. Another example of this attention refers to government actions. Legislative drafts involving gender quotas were presented to the

⁷<https://valor.globo.com/carreira/noticia/2023/03/16/mulheres-ocupam-152-dos-cargos-em-conselhos-e-diretorias.ghtml>

Brazilian congress, but they are still under review by the lower chamber's committees. The most advanced gender quota-related draft is a senate law project presented in 2010⁸, mandating a gradual three-step adoption for state-owned public companies, which must have at least 30% of female directors by the end of the third year. This law draft (PL 7179/2017) has been approved in the higher chamber in 2017, and it is under scrutiny in the lower chamber – its current status⁹ is awaiting the designation of a congressperson sponsor in the lower chamber labor committee.

Since the beginning of the decade of 2010, there has been several corporate governance improvements in the Brazilian capital market and the discussion of a more diverse board and management fits in this context. The Brazilian regulator (CVM) and the Brazilian Stock Exchange (B3)¹⁰ are open to public hearing in order to draft an instruction for companies to increase “diversity in leadership”. The initial proposal states that companies must have at least one woman and one minority group (black, disabled or LGBTQIA+) as a board member or a member of the management team.

I argue that policies aimed at structurally enhancing the corporate governance environment might be more impactful to address specific contingent topics such as board gender diversity compared with specific straightforward regulation such as gender-related quotas. First, because shareholders have a distaste of government interventions, as described by von Meyerinck et al. (2021), who find large negative announcement returns to the quota adoption for California firms. Ahern and Dittmar (2012)¹¹ document a decline in Tobin's Q, less experienced boards, increases in leverage, and reduction in operating

⁸<https://www.camara.leg.br/noticias/520758-projeto-fixa-cota-de-30-de-mulheres-em-conselhos-de-administracao-de-empresas-publicas>

⁹ <https://www.camara.leg.br/proposicoesWeb/fichadetramitacao?idProposicao=2126313>

¹⁰ https://www.b3.com.br/pt_br/noticias/audiencia-publica-asg.htm

¹¹ It is worth mentioning that the perspective of Ahern and Dittmar (2012) has been challenged by, for instance, Eckbo, Nygaard, and Thorburn (2021), who disagree with the empirical analysis, while finding insignificant announcement effects, and that the pool of women director candidates was large enough to match the demand.

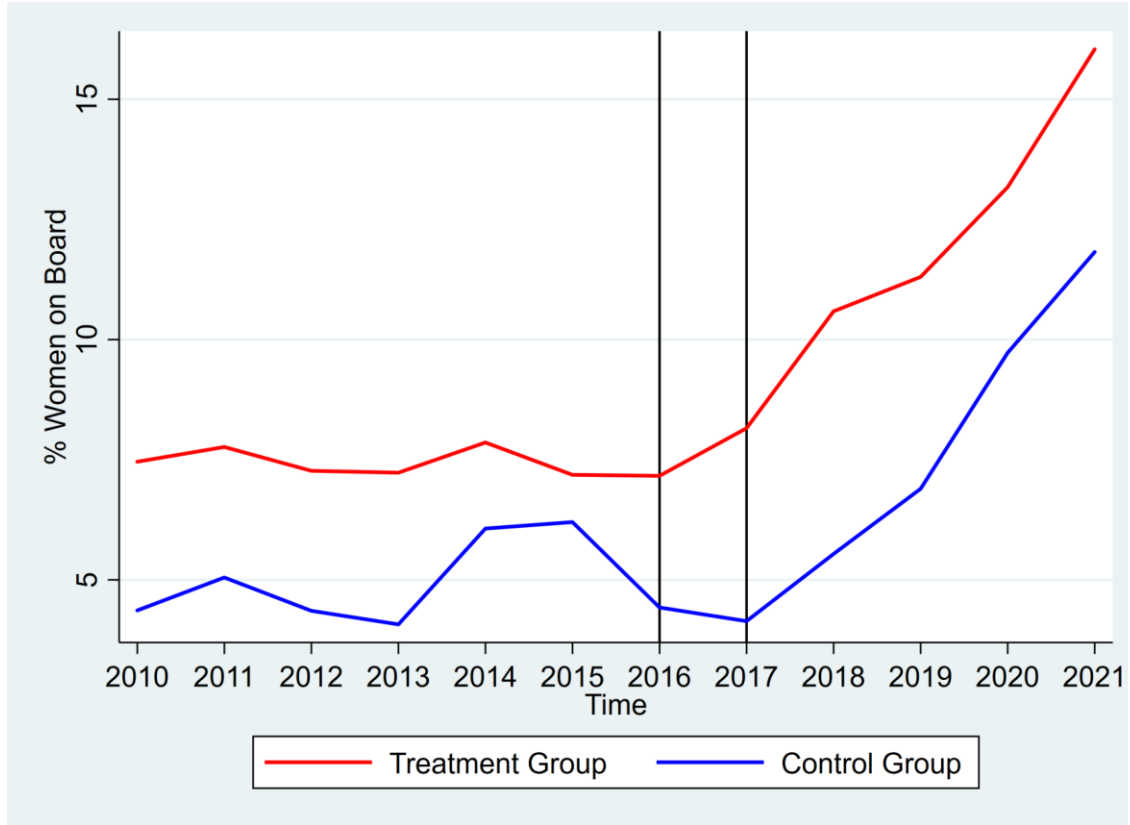
performance. Second, there might not be a sufficient supply of qualified female directors to fulfill the abrupt demand increase caused by quota regulation (Ahern & Dittmar, 2012; Greene, Intintoli & Kahle, 2019; Hwang, Shivdasani, & Simintzi, 2021). Third, quota policy implementation can have other unintended consequences on the female directors themselves. Tonetto (2022) finds an increase in companies with overboarded female directors, after the California Senate Bill adoption. Importantly, she documents that overboarded female directors are associated to lower environmental and social scores. Fourth, when targeting structural corporate governance issues, there might be several ramifications as positive consequences.

The remote voting implementation is an example of a wider governance policy that can lead to different outcomes, including, for instance, greater monitoring, board independence, minority shareholder engagement, foreign participation, adoption of better and updated governance practices, as well as lower agency problems. Those potential outcomes, if sustained and nurtured, could lead naturally to positive ramifications such as board gender diversity, while the market adapts itself to new demands in its own pace.

Using the 88/88 approach to delimitate similar treatment and control groups in terms of governance structure, in Figure 4, I provide the evolution of the presence of female directors in Brazil. Generally, both groups evolve in a similar manner. The trend for the treatment group companies slopes significantly in their first year of adoption (2017), while the control group companies experience a sharp upward slope also in their first year of adoption (2018).

I hypothesize that the main drive, and thus the lead cause of variation, for this relevant change of curves' behavior is the minority shareholder empowerment enabled by the remote voting mechanism.

Figure 4 – Evolution of women on board



Using a Difference in Differences approach, stressed in several scenarios, I estimate that the remote voting implementation has an impact of around 3 p.p. on the percentage of women on board on average for one year of adoption. Given that the average pre-adoption ratio of female directors is approximately 7%, such increase represents nearly 50% of improvement. These results suggest that allowing greater minority shareholder engagement, mainly by international investors, can have a positive influence on corporate governance practices, such as significantly increasing the participation of females in directorships.

In Table 7, I also provide supporting evidence for the main findings when analyzing (i) only remote voting users as treatment group, (ii) using Latin American companies as control group and (iii) utilizing a 5-year post-treatment period.

Table 7 – DiD estimates for women on board

Equations	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)	(XI)	(XII)	(XIII)	(XIV)
RemoteVote (%)	2.53**	3.12**	3.16**	3.66***	2.89**	3.06**	2.73**	3.25**	3.46**	4.06***	2.35**	2.96**	2.97**	3.69***
(Robust standard error)	(1.20)	(1.29)	(1.22)	(1.33)	(1.18)	(1.27)	(1.29)	(1.40)	(1.34)	(1.42)	(1.05)	(1.15)	(1.17)	(1.25)
Full Sample	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No
88/88 Approach	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Latin American as control group	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes
RV users as treatment group	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Allowing Heterogeneous Trends	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3-year pre-treatment period	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
6-year pre-treatment period	Yes	Yes	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
5-year post-treatment period	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes
Number of Observations	1,939	1,829	1,127	1,065	668	606	668	606	1,158	1,048	1,404	1,294	2,031	1,867

Notes: The table reports OLS regression estimates of the percentage of women on board (number of female directors/board size) using a DiD identification strategy. $RemoteVote_{i,t}$ is the variable that represents the effect of remote voting on the percentage of women on board, obtained as the interaction of $Time_t$ (post-adoption dummy variable) and $Indices_i$ (dummy indicating participation in a stock exchange index whose components mandatorily adopted the remote voting mechanism). In a Firm and Year Fixed Effects setting, the last two dummies are dropped. Full sample comprises 306 companies. 88/88 Approach regards the use of a sub-control group of 88 companies that both treatment and control groups share similar corporate governance structure. The control group composed by 130 Latin American companies includes firms from Argentina, Colombia, Chile, Peru and Mexico. Using RV users as treatment group, the 16 companies that had no investors using the remote voting mechanism are excluded, therefore, the treatment group totalizes 72 companies. Firm and Year Fixed Effects are used in all equations. Control variables account for firm size, liquidity, profitability, and leverage. To argue the allowance of heterogeneous trends, it was added the following control variables: $LinearControl_t$, where year 1 = 1, year 2 = 2, ..., year N = N, and the interaction between $LinearControl_t$ and $Indices_i$, leading to the main control variable $HeterogeneousTrends_{i,t}$. 3-year pre-treatment period refers to 2014 to 2016 and 6-year pre-treatment period refers to 2011 to 2016. This strategy was implemented due to the possibility of low-quality data during the first years as well as missing values given that most corporate governance data in Brazil started to be disclosed in 2010, therefore, there could be a learning curve by the companies. 5-year post-treatment period refers to the possibility of using a bigger pos-treatment window when suing Latin American companies as control, what could not happen with the Brazilian companies once the control group adopts the same mechanism the next year (2018). In all equations using only Brazilian companies, it is used a 1-year pos-treatment period (2017). Standard errors (in parentheses) are clustered at the firm level; p-values are described as: *** p<0.01, ** p<0.05, * p<0.1.

First, using as treatment group only companies that had engaged investors that voted with the remote voting mechanism, the results not only hold, but also are stronger (72 remote voting company users with 3,4% versus all 88 treated companies with 2,9%) and more statistically significant. Such findings reinforce the claim that the remote voting causally influences the increase in board gender diversity. Second, I attempt to mitigate concerns over the suitability of the control group by using Latin American (excluding Brazil) companies as counterfactuals. The DiD estimates remain very similar, corroborating the previous results. Third, the use of Latin American companies in the control group allows to explore a longer post-treatment period (which is not possible using only Brazilian companies due to the 2-step implementation of the mandatory remote voting scheme). I also use a 5-year post treatment period and the outcomes remain around 3 p.p., in line with all regressions and variations.

Compared to developed countries, the average of women on board in Brazil are still relatively low. For instance, countries¹² like Australia, Canada, Germany, Netherlands, Switzerland, United Kingdom, and United States had approximately 30% of the board members represented by women in 2019 and 2020. France and Sweden reach around 40%. On the other hand, Japan and India have a ratio of around 10% and 15%, respectively. Importantly, the average percentage of women on board for the sample of Latin American companies (Argentina, Chile, Colombia, Peru, and Mexico) in the 6-year pre-treatment period (2011-2016) is 6%, similar to Brazil. Therefore, another major role for the remote voting mechanism impact is to reduce the gap between Brazil and other nations where board gender diversity has been better addressed.

¹² Women on Corporate Boards (QuickTake) - <https://www.catalyst.org/research>

Lastly, women are particularly likely to join monitoring committees and exert such roles effectively (Adams & Ferreira, 2009; Schwartz-Ziv, 2017; Kim & Starks, 2016). Accordingly, I find a remote voting effect around 4% to 7% increase on the percentage of women as members of the supervisory council. Apparently, there has been a supervisory council reshape due to the reform. More supervisory councils were installed and maintained, including an increasing number of women among their members.

4.4. Robustness

I use a Regression Discontinuity Design model to provide another approach for estimating the effect of the remote voting implementation on the percentage of women on boards. The data of female directors is for the first year of adoption (2017). The period that I utilized to calculate the Trading Index was the year of 2014, because it was this calculation that defined the Trading Index that had to be used to find the IBRX-100 index composition for the first 4-month period of 2015 – when the remote voting regulation was published and became binding for those companies to start the adoption in 2017.

Table 8 - RDD estimates for women on board

Equations	(I)	(II)	(III)	(IV)	(V)	(VI)
Coefficient	17.45**	10.78***	11.00***	11.12***	9.97***	9.91***
(Robust standard error)	(7.61)	(3.46)	(3.59)	(3.01)	(3.14)	(2.79)
BW type	mserd	msetwo	certwo	msetwo	certwo	mseum
Kernel	triangular	triangular	triangular	epanechnikov	epanechnikov	uniform
Eff. number of obs.	100	150	96	117	93	97

Notes: The Regression Discontinuity Design estimation is calculated by the rdrobust package. BW type refers to the specification of the bandwidth selection procedure to be used. Kernel regards the function used to construct the local-polynomial estimator. The effective number of observations is calculated according to the chosen setting. The running variable is the Trading Index and the cut-off is 11.93%. Equation (I) is the default setting. From the setting options combinations, I provide the 5 most fitting ones.

Even though the effective number of observations is relatively low, I find statistically significant results that corroborate the Difference in Differences estimates. As a parameter of comparison, a RDD linear estimation would provide an effect of around 4 p.p, within the range of the DiD findings. This approach, on the other hand, uses a more

sophisticated set of tools, including procedures to optimize the bandwidth and function to provide the local-polynomial estimator. Equation (I) yields the estimation using the default setting, and the other equations include the most fitting setting combinations. Although the results slightly differ in terms of magnitude, they confirm the previous outcomes in terms of direction and statistical significance.

5. Channels: why and how the engagement happens?

5.1. Profile of investors and their decision-making – who acts and why?

I argue that the main changes in improving board gender diversity are driven by foreign minority shareholders. There is a global movement to promote board gender diversity (Liang & Vansteenkiste, 2022). Major investors such as BlackRock, Vanguard, State Street and Norges play a leading role in public campaigning for more diverse boardrooms as well as pressuring their invested companies in order to achieve those targets.

Regarding the Brazilian market, nearly all remote voting users are foreign investors. Thus, the remote voting implementation provides the possibility to test this hypothesis. Given the high ownership concentration, most foreign shareholders are minority shareholders. It is in their best interest to increase monitoring and governance practices. Therefore, as foreign shareholders participate more, led by the threat of engagement provided by remote voting, they bring better governance practices such as greater board gender diversity.

5.2. Type of Engagement – how they act?

Differently from an American and even European activism perspective, I argue that the power of voting in an environment with concentrated ownership happens in a non-publicly confrontational way. Instead, minority engagement happens through pre vote negotiations, proposal selection and mostly voting in favor of a management

sponsored proposal, rather than direct dissident voting (Dressler, 2020). Minority public actions are a trade-off between the long-term relationship with management and the threat of engagement with the possibility to harm the companies and executives' public image. I hypothesize that the remote voting mechanism considerably enhanced companies' consideration of dissident threat, especially from foreign shareholders. The reform implementation forced companies to be more open to minority investors, in an attempt to avoid public disputes.

In this setting, I propose to split investor activism into 2 groups: publicly confrontational and non-publicly confrontational. The first one refers to the most studied types of engagement: hedge fund, proxy fight, shareholder proposals, shareholder coalitions, voting, exit, etc. (Brav, Jiang, Partnoy & Thomas, 2008; Gantchev, 2013; Cziraki, Renneboog & Szilagyi, 2010; Crespi & Renneboog, 2010; Iliev et al., 2015; Denes, Karpoff & McWilliams, 2017). Publicly confrontational engagements are much more effective within dispersed ownership structures, where the activist can outvote the confronted party. On the other hand, non-publicly confrontational activism has been increasingly studied in the extant literature. This type can work in both dispersed and concentrated ownership contexts, but it might be more useful in the latter as the minority party can always be outvoted regardless of the quality of the proposal. Non-publicly confrontational activism involves behind-the-scenes and private negotiation engagement actions (McCahery, Sautner & Starks, 2016; Dressler, 2020) and it does not imply a softer activism. On the contrary, the ability to engage in closed-door private meetings allows minority shareholders to pursue ambitious requests and exert considerable pressure on management. There is evidence of behind-the-scenes activism in Brazil (Yamahaki & Frynas, 2016; Pereira, 2021).

Yamahaki and Frynas (2016) argue that there must be country-specific regulation to encourage private shareholder engagement, especially regarding socially-driven issues in developing countries. Additionally, Gow, Larcker and Watts (2020) document that shareholders have not historically been proactive to motivate companies to advance board corporate diversity with the use of their voting in director elections. The threat of engagement significantly fostered by the remote voting helps to address both matters in an emerging market with high ownership concentration.

6. Concluding Remarks

I designed a natural experiment using the remote voting implementation in Brazil to study whether minority shareholder empowerment impacts board gender diversity. I hypothesized that greater foreign shareholder participation influences Brazilian companies towards better corporate governance practices and structures such as gender-diverse boardrooms. I find that the remote voting increased the voting turnout by approximately 8 p.p. in the first year of adoption, which exceeds a 10% increase compared to the average pre-adoption quorum. Moreover, the reform may have caused the creation of more monitoring committees. Regarding the profile of remote voting users, 98% are foreign investors. I also analyze the investing pattern of four of the biggest funds in the world, and arguably the main pushers for corporate diversity among investors internationally. From 2017 on, the Big Four enhanced considerably both the number of invested companies and the number of shareholder-company observations, as they have an overlap of around 45% of invested companies. Mainly, the remote voting implementation increased the percentage of women on board by approximately 3 p.p., representing nearly 50% of the pre-adoption ratio of female directors. Estimates from a Regression Discontinuity Design corroborate those findings.

This research has several policy and regulatory implications. First, minority shareholder empowerment strategies, such as remote voting, can lead to significant improvements in corporate governance practices. Second, fostering the participation of international investors, especially the ones with universal ownership, can influence positively the invested market as they reduce the gap of the quality of governance practices between developed and emerging economies. Third, government-mandated female quota in boardrooms can be associated with a deterioration in firm value due to short-term undersupply of qualified women candidates (Hwang et al., 2021). I suggest that using wider governance policies, targeting structural problems, although possibly slower, might be a better option because it allows for the organic adjustment of the market for female directors, thus potentially avoiding other quota-related side effects, such as overboarded female directors.

References

- Adams, R. B., & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94(2), 291-309.
- Adams, R. B., Hermalin, B. E., & Weisbach, M. S. (2010). The Role of Boards of Directors in Corporate Governance: A Conceptual Framework & Survey. *Journal of Economic Literature*, 48(1), 58–107.
- Admati, A. R., Pfleiderer, P., & Zechner, J. (1994). Large shareholder activism, risk sharing, and financial market equilibrium. *Journal of Political Economy*, 102(6), 1097-1130.
- Aggarwal, R., Erel, I., Ferreira, M., & Matos, P. (2011). Does governance travel around the world? Evidence from institutional investors. *Journal of Financial Economics*, 100(1), 154-181.
- Ahern, K. R., & Dittmar, A. K. (2012). The changing of the boards: The impact on firm valuation of mandated female board representation. *The Quarterly Journal of Economics*, 127(1), 137-197.
- Bena, J., Ferreira, M. A., Matos, P., & Pires, P. (2017). Are foreign investors locusts? The long-term effects of foreign institutional ownership. *Journal of Financial Economics*, 126(1), 122-146.

- Brav, A., Jiang, W., Partnoy, F., & Thomas, R. (2008). Hedge Fund Activism, Corporate Governance, and Firm Performance. *The Journal of Finance*, 63(4), 1729–1775.
- Cai, J., Garner, J. L., & Walkling, R. A. (2009). Electing directors. *Journal of Finance*, 64(5), 2389–2421. <https://doi.org/10.1111/j.1540-6261.2009.01504.x>
- Chung, H., & Talaulicar, T. (2010). Forms and effects of shareholder activism. *Corporate Governance: An International Review*, 18(4), 253–257.
- Claessens, S., & Yurtoglu, B. B. (2013). Corporate governance in emerging markets: A survey. *Emerging Markets Review*, 15, 1–33.
- Collares, M. L. (2020). Corporate governance: a major factor in shareholder activism in Brazil. *Revista de Administração Contemporânea*, 24, 414-431.
- Crespi, R., & Renneboog, L. (2010). Is (institutional) shareholder activism new? Evidence from UK shareholder coalitions in the pre-Cadbury era. *Corporate Governance: An International Review*, 18(4), 274-295.
- CVM. Instrução Normativa 561 (2015). Rio de Janeiro. Retrieved from <https://goo.gl/vH8bHn>
- CVM. (2014). Audiência pública: regulamentação da votação a distância de acionistas em assembleias gerais. Recuperado de <https://goo.gl/pwEscq>
- Cziraki, P., Renneboog, L., & Szilagyi, P. G. (2010). Shareholder activism through proxy proposals: The European perspective. *European Financial Management*, 16(5), 738-777.
- Denes, M. R., Karpoff, J. M., & McWilliams, V. B. (2017). Thirty years of shareholder activism : A survey of empirical research . *Journal of Corporate Finance*, 44, 405–424.
- Dressler, E. (2020). Voice and power: Do institutional shareholders make use of their voting power?. *Journal of Corporate Finance*, 65, 101716.
- Eckbo, B. E., Nygaard, K., & Thorburn, K. S. (2022). Valuation effects of Norway’s board gender-quota law revisited. *Management Science*, 68(6), 4112-4134.
- Fos, V., Li, K., & Tsoutsoura, M. (2018). Do Director Elections Matter? *Review of Financial Studies*, 31(4), 1499–1531. <https://doi.org/10.1093/rfs/hhx078>
- Gantchev, N. (2013). The costs of shareholder activism : Evidence from a sequential decision model. *Journal of Financial Economics*, 107(3), 610–631.
- Gao, H, Huang, J, & Zhang, T. (in press). Can Online Annual General Meetings Increase Shareholders’ Participation in Corporate Governance? *Financial Management*, 2019. doi: 10.1111/fima.12301.
- Giannetti, M., Liao, G., & Yu, X. (2015). The Brain Gain of Corporate Boards: Evidence from China. *Journal of Finance*, 70(4), 1629–1682. <https://doi.org/10.1111/jofi.12198>
- Gillan, S. L., & Starks, L. T. (2007). The evolution of shareholder activism in the United

- States. *Journal of Applied Corporate Finance*, 19, 55–73.
- Ginglinger, E., & Gentet-Raskopf, C. (2021). Women directors and E&S performance: evidence from board gender quotas. *European Corporate Governance Institute–Finance Working Paper*, (760).
- Goranova, M., Abouk, R., Nystrom, P. C., & Soofi, E. S. (2016). Corporate Governance Antecedents to Shareholder Activism: a Zero-Inflated Process. *Strategic Management Journal*, 51(2), 315–334.
- Gormley, T. A., Gupta, V. K., Matsa, D. A., Mortal, S. C., & Yang, L. (2022). The big three and board gender diversity: The effectiveness of shareholder voice (No. w30657). *National Bureau of Economic Research*.
- Gow, I. D., Larcker, D. F., & Watts, E. M. (2020). Board diversity and shareholder voting. *Rock Center for Corporate Governance at Stanford University Working Paper*, (245).
- Greene, D., Intintoli, V. J., & Kahle, K. M. (2020). Do board gender quotas affect firm value? Evidence from California Senate Bill No. 826. *Journal of Corporate Finance*, 60, 101526.
- Guimaraes, P., Leal, R. P. C., Wanke, P., & Morey, M. (2019). Shareholder activism impact on efficiency in Brazil. *Corporate Governance: The International Journal of Business in Society*, CG-01-2018-0010.
- Hwang, S., Shivdasani, A., & Simintzi, E. (2021). Mandating women on boards: Evidence from the United States. *Kenan Institute of Private Enterprise Research Paper*, (18-34).
- Hsu, P. H., Li, K., & Pan, Y. (2022). The Eco Gender Gap in Boardrooms. *European Corporate Governance Institute–Finance Working Paper*, (861).
- Iliev, P., Lins, K. V., Miller, D. P., & Roth, L. (2015). Shareholder Voting and Corporate Governance Around the World. *Review of Financial Studies*, 28(8), 2167–2202.
- Jensen, C., & Meckling, H. (1976). Theory Of The Firm : Managerial Behavior , Agency Costs And Ownership Structure. *Journal of Financial Economics*, 3(4), 305–360.
- Jiang, G., Lee, C.M., Yue, H., 2010. Tunneling through intercorporate loans: the China experience. *Journal of Financial Economics*. 98 (1), 1–20.
- Judge, W. Q., Gaur, A., & Muller-Kahle, M. I. (2010). Antecedents of shareholder activism in target firms: Evidence from a multi-country study. *Corporate Governance: An International Review*, 18(4), 258–273.
- Kim, D., & Starks, L. T. (2016). Gender diversity on corporate boards: Do women contribute unique skills?. *American Economic Review*, 106(5), 267-271.
- Leal, R. P. C., Carvalhal, A. L., & Iervolino, A. P. (2015). One decade of evolution of Corporate Governance practices in Brazil. *Revista Brasileira de Finanças*, 13(1), 134–161.
- Liang, H., & Vansteenkiste, C. (2022). Delegated Gender Diversity. *European Corporate*

- Governance Institute–Finance Working Paper*, (814).
- Maranho, F. S., Bortolon, P. M., & Leal, R. P. (2020). The firm–investor level characteristics of institutional investor engagement in Brazil. *International Journal of Disclosure and Governance*, 17, 267-281.
- Marler, J. H., & Faugère, C. (2010). Shareholder activism and middle management equity incentives. *Corporate Governance: An International Review*, 18(4), 313–328.
- Marquardt, C., & Wiedman, C. (2016). Can shareholder activism improve gender diversity on corporate boards?. *Corporate Governance: An International Review*, 24(4), 443-461.
- McCahery, J. A., Sautner, Z., & Starks, L. T. (2016). Behind the Scenes : The Corporate Governance Preferences of Institutional Investors. *Journal of Finance*, 71(6), 2905–2932.
- von Meyerinck, F., Niessen-Ruenzi, A., Schmid, M., & Davidoff Solomon, S. (2021). As California Goes, so Goes the Nation? Board Gender Quotas and Shareholders' Distaste of Government Interventions. *European Corporate Governance Institute–Finance Working Paper*, (785).
- Network Briefing. (2017). *A guide to shareholder rights across six European countries*. Retrieved from <https://shareaction.org/wp-content/uploads/2017/03/ShareholderRightsEurope.pdf>
- Pereira, S. M. P. (2021) Activism and Engagement: Brazilian Institutional Investor Perspectives. Rio de Janeiro, 2021. 195 pages. *Tese de Doutorado em Administração – Instituto Coppead de Administração*, Universidade Federal do Rio de Janeiro.
- Poulsen, T., Strand, T., & Thomsen, S. (2010). Voting power and shareholder activism: A study of swedish shareholder meetings. *Corporate Governance: An International Review*, 18(4), 329–343.
- Punsvuo, F. R., Kayo, E. K., Barros, L. A. B. C. (2007). O ativismo dos fundos de pensão e a qualidade da governança corporativa. *Revista Contabilidade & Finanças*, 18(45), 63–72.
- PwC, 2021, CEO Action for Diversity & Inclusion, <https://www.ceoaction.com/pledge>.
- Sharfman, B. S. (2015). A Theory of Shareholder Activism and its Place in Corporate Law, 82(4), 101–143.
- SEC. (2012). Spotlight on Proxy Matters — The Mechanics of Voting. Retrieved from https://www.sec.gov/spotlight/proxymatters/voting_mechanics.shtml#how_do_I_vote
- Shleifer, A., & R. Vishny (1986) Large Shareholders and Corporate Control, *Journal of Political Economy*, 94, 461-488.
- Silveira, A. D. M. da, & Barros, L. A. B. de C. (2008). Determinantes Da Qualidade Da Governança Corporativa Das Companhias Abertas Brasileiras. *Revista Eletrônica de Administração*, 61(14), 1–29.

- Sternberg, L., Leal, R. P. C., & Bortolon, P. M. (2011). Affinities and agreements among major Brazilian shareholders. *International Journal of Disclosure and Governance*, 8(3), 213–228.
- Schwartz-Ziv, M., 2017, Gender and board activeness: the role of a critical mass, *Journal of Financial Quantitative Analysis*, 52, 751–780.
- Tirole, J. (2006). *The Theory of Corporate Finance*. Princeton University Press. Princeton, NJ.
- Tonetto, A. (2022). Busy Female Directors. Available at SSRN 4260457.
- Vargas, L. H. F., Bortolon, P. M., Barros, L. A. B. C., & Leal, R. P. C. (2018). Recent activism initiatives in Brazil. *International Journal of Disclosure and Governance*, 15(1), 40–50.
- Wooldridge, J. M. (2021). Two-way fixed effects, the two-way mundlak regression, and difference-in-differences estimators. Available at SSRN 3906345.
- Yamahaki, C., & Frynas, J. G. (2016). Institutional determinants of private shareholder engagement in Brazil and South Africa: The role of regulation. *Corporate Governance: An International Review*, 24(5), 509-527.
- Yermack, D. (2010). Shareholder voting and corporate governance. *Annual Review of Financial Economics*, 2, 103–125. <https://doi.org/10.1146/annurev-financial-073009-104034>