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SHAREHOLDER CONCENTRATION, BOARD STRUCTURE AND EXECUTIVE REMUNERATION

Concentração acionária, conselho de administração e remuneração de executivos

Concentración accionaria, junta directiva y remuneración de ejecutivos

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ABSTRACT

Understanding the dynamics of agency conflicts in Brazilian firms requires investigating the influence of shareholder concentration and board structure in the remuneration level of executives. Based on a sample of 232 firms traded on B3 between 2014 and 2016, we found shareholder concentration to have a negative effect on executive remuneration, as predicted by the agency theory. The characteristics of the board structure also have repercussions on executive compensation. Some of these characteristics affect the sensitivity of compensation to shareholder concentration, which, contrary to the managerial power approach, highlights the predominance of the principal–principal conflict in Brazil.

KEYWORDS | Shareholder concentration, board of directors, executive compensation, agency conflicts, managerial power.

RESUMO

A investigação da influência da concentração acionária e da estrutura do conselho de administração no nível de remuneração de executivos permite esclarecer a dinâmica dos conflitos de agência presentes nas empresas brasileiras. Os resultados dessa investigação, em 232 empresas listadas na B3, no período 2014-2016, apontam que a concentração acionária influencia negativamente o nível de remuneração executiva, coerentemente com a Teoria da Agência. Ademais, características da estrutura do conselho de administração têm repercussão sobre a remuneração executiva, além do que algumas dessas características afetam a sensibilidade da remuneração à concentração acionária, que, contrariamente à Abordagem do Poder Gerencial, evidencia o predomínio do conflito principal-principal no Brasil.

PALAVRAS-CHAVE */ Concentração acionária, conselho de administração, remuneração de executivos, conflitos de agência, poder gerencial.*

RESUMEN

Investigar la influencia de la concentración accionaria y la estructura de la junta directiva en el nivel de remuneración de los ejecutivos arroja luz sobre la dinámica de los conflictos de agencia presentes en la empresa brasileña. Los resultados en 232 empresas que cotizan en la B3, en el período 2014-2016, apuntan a que la concentración accionaria influencia negativamente la remuneración ejecutiva, coherentemente con la Teoría de Agencia. Además, las características de la estructura de la junta directiva tienen repercusiones en la remuneración ejecutiva, y algunas de estas características afectan la sensibilidad de la remuneración a la concentración accionaria, lo que, al contrario de la Teoría del Poder Gerencial, destaca el predominio del conflicto principal-principal en Brasil.

PALABRAS CLAVE */ Concentración accionaria, junta directiva, remuneración de ejecutivos, conflictos de agencia, poder de gerencial.*

INTRODUCTION

The board of directors (BD), which is the main organ of corporate governance, plays an essential role in determining executive remuneration by establishing policies capable of aligning the interests of both owners and managers while maximizing shareholder wealth and reducing agency costs (Jensen, 1993).

Despite being considered an agency cost, executive remuneration is an important internal mechanism of governance that is used to moderate the relationship between agent and principal (Jensen & Meckling, 1976). On the other hand, top executives are in a position to exercise a direct influence on compensation packages; in fact, the separation between ownership and control offers managers a greater margin of discretion (Berle & Means, 1932). The managerial power approach (MPA) can be used to model the power of executives to influence their own pay (Bebchuk & Fried, 2003), which is an offshoot of agency theory centered on the classic agent–principal conflict.

Executive compensation packages may be a less effective means of mitigating agent–principal conflicts in firms with concentrated ownership and, consequently, a greater propensity for principal-principal conflicts between minority and majority shareholders (Porta, Lopez-de-Silanes, & Shleifer, 1999) agent-principal. In such scenarios, controlling shareholders tend to keep managers "on a short leash", substituting the BD in its function as monitor of managerial activities to some extent (Shleifer & Vishny, 1997). From this perspective, high ownership concentration can displace executive remuneration as a mechanism of harmonizing the interests of shareholders and managers (Mehran, 1995).

It is well documented that ownership concentration influences decisions on executive compensation (Jiang, Habib, & Smallman, 2009) according to capital structure and institutional environment. Contrary to organizations with diffuse investor structure, evidence shows that firms with highly concentrated capital tend to remunerate executives less handsomely, especially in environments with ineffective legal protection of minority shareholders (Hassen, Ouakdi, & Omri, 2015).

Like many other emerging economies, Brazil is characterized by high ownership concentration (majority shareholders control approximately 59% of shares with voting rights) (Pinto & Leal, 2013). However, few studies have been published in the national literature on the influence of ownership structure on the level of executive remuneration. Therefore, more in-depth research is needed to understand how this phenomenon impacts corporate life in Brazil.

Core, Holthausen, and Larcker (1999) show that executive remuneration may also be affected by BD structure, viewed as a component of corporate governance. It would seem that the stronger the influence of top executives on BD decision making, the more likely a firm is to pay excessive compensations. The MPA (Bebchuk & Fried, 2003) predicts that this scenario aggravates agent–principal conflicts.

The independence of the BD is compromised by highly concentrated ownership (Dutra & Saito, 2002). If the composition of the BD is of low quality (Porta, López-de-Silanes, Shleifer, & Vishny, 2000), BD structure may interfere in the balance between ownership concentration and executive remuneration. From the perspective of agency theory (Jensen & Meckling, 1976) and MPA (Bebchuk & Fried, 2003), the latter of which is still relatively untested in the Brazilian setting, we designed the present study to evaluate the influence of ownership concentration and BD structure on the level of executive remuneration in Brazilian public firms.

Our sample consisted of 696 observations from 232 non-financial firms traded on B3 in the period 2014–2016. Information on executive remuneration and BD structure was retrieved from publicly available reference forms, while financial and ownership structure data was extracted from the Economatica database.

Our results reveal that concentrated ownership is associated with lower levels of executive remuneration. Also, they support the notion that direct oversight by controlling shareholders is a substitute for executive remuneration in the mitigation of agent–principal conflicts (Hassen et al., 2015; Luo, 2015). In addition, we found that CEO duality and a high proportion of insiders on the BD also reduce the level of compensation, whereas the opposite is true for BDs with a high proportion of independent members. Moreover, when interacting the variables, a high proportion of insiders, a high proportion of independent members, and large board size increased the sensitivity of remuneration to ownership concentration, while a high proportion of BD members appointed by the controller reduced sensitivity, confirming the moderating influence of BD composition. This suggests the MPA is an inadequate framework for the Brazilian setting, which is characterized by principal–principal conflicts (Brandão & Crisóstomo, 2015).

It is noteworthy the current investigation goes beyond previous studies (Correia, Amaral, & Louvet, 2014; Ermel & Monte, 2016; Pinto & Leal, 2013) by evaluating the interaction between ownership concentration, BD structure, and executive remuneration as internal mechanisms of governance. Moreover, this study clarifies patterns of agency conflicts in the Brazilian institutional environment and the results can assist organizations in their decision-making processes and improve of governance practices.

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LITERATURE REVIEW AND HYPOTHESES

Ownership concentration and executive remuneration

Empirical evidence indicates that ownership structure, more specifically shareholder concentration, interferes in agency conflicts and that managers have greater discretionary power in markets characterized by diffuse capital structure (Shleifer & Vishny, 1997).

Remuneration policies are more easily influenced by managers in markets with low ownership concentration and a more clear-cut separation between ownership and control (Jensen & Meckling, 1976). This leaves the BD in charge of defining compensation policies capable of aligning the interests of shareholders and executives (Bettis, Bizjak, Coles, & Kalpathy, 2018).

Conversely, high ownership concentration tends to mitigate agent–principal conflicts when the controlling shareholder usurps the BD's role in the monitoring of management (Dyck & Zingales, 2004). In the presence of a weak governance system, this allows majority shareholders to secure private benefits of control (Bozec & Bozec, 2007; Brandão & Crisóstomo, 2015), leading to the exacerbation of principal–principal conflicts and the expropriation of minority shareholders (Porta et al., 1999, 2000). In such scenarios, the main moderator of agent–principal conflicts is oversight by majority shareholders, not executive compensation, which tends to decrease (Almazan, Hartzell, & Starks, 2005).

Young, Peng, Ahlstrom, Bruton, and Jiang (2008) find limited use for the agent–principal perspective in both developing and emerging economies, most of which are characterized by state- or family-controlled organizations with highly concentrated ownership. Brazil is no exception, with a history of ownership concentration, weak minority shareholder protection, and tardy implementation of corporate governance practices (Brandão & Crisóstomo, 2015; Pinto & Leal, 2013).

International studies confirm the influence of ownership concentration on the level of executive remuneration. Smaller compensations are awarded in markets with concentrated capital (Croci, Gonenc, & Ozkan, 2012; Firth, Fung, & Rui, 2007; Hartzell & Starks, 2003; Luo, 2015) and more lavish packages are offered in settings of shareholding dispersion (Jiang et al., 2009; John, Mehran, & Qian, 2010). In Brazil, most studies support the notion that high ownership concentration is negatively associated with executive remuneration (Anjos, Tavares, Monte, & Lustosa, 2015; Ermel & Monte, 2016; Pinto & Leal 2013).

Based on the theoretical underpinnings and empirical evidence presented above and considering the status of Brazil as an emerging economy with high levels of ownership concentration, we expect the latter to have a negative impact on executive remuneration. We therefore formulate the following hypothesis:

> H1: A high concentration of voting shares in the hands of large shareholders is negatively associated with executive remuneration.

In addition to addressing the question of ownership concentration, we evaluated the effect of BD structure on executive remuneration to determine to what extent the relationship between ownership concentration and remuneration is moderated by aspects of BD structure, as predicted by the MPA, which is relatively unexplored in the Brazilian setting.

Managerial power approach and board of directors' structure

As a complement to agency theory, Bebchuk and Fried (2003, 2004) developed the MPA, a theoretical framework capable of explaining agent–principal conflicts. The authors observed that a greater separation between ownership and control is synonymous with greater managerial discretion in decision making. As a result, actions that promote the interests of the management in detriment to the essential interest of the shareholders, that is, the maximization of returns may be implemented (Berle & Means, 1932).

According to the MPA, shareholders are unable to directly oversee managers' actions. As they have more hands-on knowledge of the firm, managers are prone to act opportunistically in relation to their own remuneration, extracting excessive benefits and establishing a link between managerial power and compensation arrangements (Abascal & González, 2019; Bebchuk & Fried, 2004). The approach predicts that compensation packages will favor the manager over the firm, especially if the BD is weak or hesitant. Bebchuk and Fried (2004) argued that managerial power over the BD aggravates the classic agent–principal conflict.

Most MPA-informed empirical studies on the influence of top executives on compensation policies include BD variables (e.g., board size, number of insiders, CEO duality) in the analysis of managerial power (Core et al., 1999; Newman & Mozes, 1999). Some studies also take the proportion of members appointed by majority shareholders and of independent members on the

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BD into account. Unsurprisingly, greater BD independence has been shown to restrain managerial power and inhibit excessive remuneration (Brandão, Vasconcelos, Luca, & Crisóstomo, 2019; Choe, Tian, & Yin, 2014).

Several authors have concluded that ownership concentration can be harmful to the quality of the BD structure and governance (Crisóstomo, Brandão, & Lopéz-Iturriaga, 2020; Bozec & Bozec, 2007; Porta et al., 2000) by allowing controlling shareholders to exercise private benefits of control against the interests of minority shareholders; this is a result of the principal–principal conflict, often referred to as expropriation. Hence, in a scenario of high ownership concentration such as Brazil, where large shareholders generally interfere in BD composition (Dutra & Saito, 2002), it is reasonable to assume that the association between ownership concentration and executive remuneration is sensitive to BD variables.

Jensen's (1993) seminal study identified the number of board members as a significant factor in the monitoring of management. It has been argued that the larger the BD, the more difficult it is to control decisions regarding executive compensation due to internal disunity, poor coordination, and reduced incentives to monitoring, eventually strengthening the influence of the CEO (Jensen, 1993; Lee & Chen, 2011). Similarly, evidence shows that, in environments with high ownership concentration, reducing the size of the BD can render the monitoring of managerial decisions easier and more effective (Cheung, Stouraitis, & Wong, 2005; Schiehll & Santos, 2004). Thus, based on these assumptions, we would expect executives to obtain higher levels of remuneration in firms with large BDs due to a reduction in the sensitivity of remuneration to ownership concentration. We therefore formulate the following hypothesis:

> H2: The number of board members is positively associated with the level of executive remuneration and negatively associated with the sensitivity of remuneration to ownership concentration.

Separating the functions of chairman and CEO allows more objective oversight of managerial decisions and is therefore considered a good corporate governance practice; however, CEO duality remains a common phenomenon worldwide. Like several other authors, Conyon and Peck (1997) concluded that keeping the functions of chairman and CEO separate helps restrain managerial discretion.

On the other hand, Finkelstein (1992) argues that the BD is the main instrument used by the CEO to garner power, especially if the CEO becomes the chairman as well, a position with greatly enhanced internal political influence and high risk of engagement in opportunistic behaviors. Thus, in line with the available empirical evidence, executive remuneration is on average higher in firms with poor control over the CEO, or in firms with CEO duality where the independence of the BD has been compromised (Bugeja, Rosa, Duong, & Izan, 2012; Lin & Lu, 2009). In fact, CEO duality appears to be more likely to occur in firms with large majority shareholders, that is, with high risk of power concentration in the hands of few individuals, and weak and inefficient BDs unable to monitor executive decision making (Cheung et al., 2005; Schiehll & Santos, 2004). Therefore, we formulate the following hypothesis:

> H3: CEO duality is positively associated with the level of executive remuneration and negatively associated with the sensitivity of remuneration to ownership concentration.

As documented in the literature, having a large proportion of insiders on the BD is detrimental to its monitoring ability. Insiders tend to support the CEO's choice of strategies, even when these hurt the interests of the shareholders (Grabke-Rundell & Gomez-Mejia, 2002).Thus, BDs with a large number of insiders provide CEOs with additional opportunities for increasing their compensation rather than investing efforts in the pursuit of corporate performance and greater returns on assets (Bugeja et al., 2012). In settings with high ownership concentration, BDs are composed of more insiders than outsiders, compromising the BD's mission to monitor managerial behavior (Cheung et al., 2005; Schiehll & Santos, 2004). In this study, we therefore included an evaluation of how the proportion of insiders on the BD affects the level of executive remuneration and the sensitivity of remuneration to ownership concentration. We therefore formulate the following hypothesis:

> H4: A high proportion of insiders on the BD is positively associated with the level of executive remuneration and negatively associated with the sensitivity of remuneration to ownership concentration.

Core et al. (1999) argue the BD should act as an organ of control on behalf of the shareholders but, to do so efficiently, the BD must be as independent as possible. This is best achieved when the members are outsiders, unaffiliated with the firm or the owners (IBGC, 2015). Accordingly, some authors have proposed a negative association between BD independence and CEO remuneration, arguing that a large number of independent directors reduces the CEO's power to

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secure remunerative advantages (Ozdemir & Upneja, 2012). Such independence would be a moderating factor in both agent–principal and principal–principal conflicts (Brandão et al., 2019). An independent BD would limit the CEO's influence on remuneration policies and thereby avoid encumbering the firm with excessive compensation packages (Chhaochharia & Grinstein, 2009). However, the independence of the BD may be compromised in firms with high ownership concentration where controlling shareholders serve as board members or appoint family members with this purpose (Cheung et al., 2005; Schiehll & Santos, 2004). Based on it, a high proportion of independent directors on the BD can be expected to have a negative influence on the level of executive remuneration and a positive influence on the sensitivity of remuneration to ownership concentration. We therefore formulate the following hypothesis:

> H5: A high proportion of independent directors on the BD is negatively associated with the level of executive remuneration and positively associated with the sensitivity of remuneration to ownership concentration.

In settings characterized by high ownership concentration, such as Brazil, the BD is often served by members appointed by the controlling shareholders (Dutra & Saito, 2002). This may be expected to reduce executives' ability to determine their own remuneration due to monitoring by the owners and their appointees on the BD (Claessens & Yurtoglu, 2013). Nevertheless, while this may attenuate agent–principal conflicts, it tends to accentuate principal–principal conflicts (Brandão & Crisóstomo, 2015; Chen & Keefe, 2018). This notion is supported by Bertucci, Bernardes, and Brandão (2006), who evaluated the influence of majority shareholders on remuneration policies. We therefore formulate the following hypothesis:

> H6: A high proportion of BD members appointed by controlling shareholders is negatively associated with the level of executive remuneration and positively associated with the sensitivity of remuneration to ownership concentration.

METHODS

The study population consisted of all non-financial firms traded on B3 in the period 2014–2016, for which the required information was available, corresponding to 232 firms (696 observations). Information on executive remuneration and BD structure was extracted from the reference forms of each firm found on the website of the Brazilian Securities Exchange Commission, while financial and ownership data was retrieved from the Economatica database during September and November, 2017.

Our empirical model used multiple linear regression, estimated using the ordinary least squares method, which is the most widely used model in studies on aspects of executive remuneration (Anjos et al., 2015; Ermel & Monte, 2016; Pinto & Leal, 2013; Teiss & Beuren, 2017). The independent variables were represented by ownership concentration and BD composition. Their effect on the dependent variable (executive remuneration) was analyzed considering mutual interactions. The control variables were the most commonly adopted in this type of study, namely company size, performance, and leverage. The proposition of our empirical model is illustrated in Equation 1.

$$TREMN_{it} = a + \beta_1 OWNCON_{it} + \beta_2 BDSTRCT_{it} + \beta_3 OWNCON_{it} * BDSTRCT_{it} + \beta_4 LnSIZE_{it} + \beta_5 LEV_{it} + \beta_6 PERFM_{it} + \varepsilon \quad (1)$$

where

$TREMN_{it}$ is the total remuneration of the executive directors of firm *i* in the period *t*,

$OWNCON_{it}$ represents the variables of ownership concentration, expressed as voting shares of the largest shareholders, of firm *i* in the period *t*,

$BDSTRCT_{it}$ represents the variables of board structure of firm *i* in the period *t*,

$LnSIZE_{it}$ is the size of firm *i* in the period *t*,

LEV_{it} is the leverage of firm *i* in the period *t*,

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$PERFM_{it}$ is the performance of firm *i* in the period *t*,

a is the intercept of the line,

β_1, β_2, β_3, β_4, β_5 and β_6 are the angular coefficients of the explanatory variables,

ε is the error term of the equation.

The coefficient (β_3) of the interaction variable $OWNCON_{it}$ * $BDSTRCT_{it}$ tested whether BD structure affected the sensitivity of remuneration to ownership concentration (β_1). Other estimations (not shown) were performed with the control variables "year" and "sector," but the coefficients were non-significant and had no measurable influence on the significance of the variables of interest.

A detailed description of the study variables is provided in Exhibit 1.

Exhibit 1. **Description of variables**

Variable	Description
Level of remuneration of executive directors (TREMN)	Natural logarithm (Ln) of the total remuneration of the executive directors (LnTREMN)
Ownership concentration (OWNCON)	Proportion of shares with voting rights belonging to the largest (SVR_1), the two largest (SVR_2), the three largest (SVR_3), the four largest (SVR_4),and the five largest shareholders (SVR_5)
Board size (BDSIZE)	Total number of sitting board members
CEO duality (CEODU)	Dual role as chairman and CEO (dummy variable: scored as 1 in the presence of duality; 0 otherwise)
Insiders (BDEXE)	Proportion of sitting board members who hold executive positions in the firm
Independent BD members (BDIND)	Proportion of independent members on the board
BD members appointed by large shareholders (BDAPP)	Proportion of sitting board members appointed by controlling shareholders
Company size (LnSIZE)	Natural logarithm (Ln) of assets
Leverage (LEV)	Total debts divided by total assets
Corporate performance (PERFM)	Net earnings divided by total assets

It should be noted that BD structure was quantified in relation to the total number of sitting board members of each firm.

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RESULTS

Descriptive statistics

The descriptive statistics of the variables used in the model are presented in Table 1. The mean annual gross remuneration of the executives was BRL 10.2 million, with little variation in the sample as revealed by the variation coefficients. This scenario is compatible with the findings of Anjos et al. (2015) for firms traded on BM&FBovespa in the period 2011–2013.

Table 1. **Descriptive statistics of the variables**

Variable	Minimum	Maximum	Mean	Std. Dev.	Variation coefficient
TREMN	8.688,00	93,304,626.83	10,210,300.74	12,708,135.98	1.245
LnTREMN	9.070	18.351	15.404	1.462	0.095
ROA	-8.256	2.218	-0.029	0.454	-15.891
LnSIZE	7.520	20.618	14.574	2.019	0.139
LEV	0.001	12.267	0.727	0.908	1.250
SVR_1	0.034	1.000	0.490	0.259	0.529
SVR_2	0.068	1.000	0.629	0.243	0.387
SVR_3	0.069	1.000	0.695	0.226	0.325
SVR_4	0.069	1.000	0.731	0.214	0.292
SVR_5	0.069	1.000	0.752	0.205	0.273
BDSIZE	1.000	20.000	8.115	3.572	0.440
BDIND	0.000	1.000	0.193	0.210	1.087
BDEXE	0.000	1.000	0.111	0.132	1.183
BDAPP	0.000	1.000	0.705	0.331	0.469

Note: TREMN=level of remuneration of executive directors; LnTREMN=natural logarithm of total remuneration of executive directors; ROA=return on assets; LnSIZE=natural logarithm of assets; LEV=leverage; SVR_1=proportion of shares with voting rights belonging to the largest shareholder; SVR_2=proportion of shares with voting rights belonging to the two largest shareholders; SVR_3=proportion of shares with voting rights belonging to the three largest shareholders; SVR_4=proportion of shares with voting rights belonging to the four largest shareholders; SVR_5=proportion of shares with voting rights belonging to the five largest shareholders; BDSIZE=board size; BDIND=proportion of independent members on the board; BDEXE=proportion of sitting board members with executive positions; BDAPP=proportion of sitting board members appointed by controlling shareholders.

On the average, 49% of the voting shares were controlled by the largest shareholder, rising to 75.2% when the five largest shareholders were pooled. The sample was relatively homogenous with regard to ownership concentration, matching the results of previous Brazilian studies showing a high concentration of voting shares (Brandão & Crisóstomo, 2015; Silveira, Leal, Carvalhal-da-Silva, & Barros, 2010).

The mean number of board members was eight, with little variation in the sample. The observed number is compatible with IBGC guidelines (2015) and with the findings of Brandão et al. (2019) for firms on the IBrX 100 ranking in the period 2013–2015.

Independent members (19.3%) were more prevalent than insiders (11.1%), but a very high percentage (nearly 70%) were appointees of controlling shareholders. These figures are consistent with the findings of Brandão and Crisóstomo (2015) for top Brazilian public firms between 2010 and 2013.

The results of the correlation analysis of the quantitative study variables are presented in Table 2.

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Table 2. **Correlation between metric variables**

Variable	LnTREMN	BDSIZE	BDIND	BDEXE	BDAPP	LnSIZE	LEV	ROA	SVR_1	SVR_2	SVR_3	SVR_4	SVR_5
LnTREMN	1.000												
BDSIZE	0.441(**)	1.000											
BDIND	0.290(**)	0.025	1.000										
BDEXE	-0.394(**)	-0.399(**)	-0.263(**)	1.000									
BDAPP	-0.125(**)	-0.065	-0.446(**)	0.110(**)	1.000								
LnSIZE	0.717(**)	0.597(**)	0.196(**)	-0.362(**)	-0.034	1.000							
LEV	-0.228(**)	-0.143(**)	-0.093(*)	0.321(**)	-0.007	-0.225(**)	1.000						
ROA	0.179(**)	0.146(**)	0.048	-0.151(**)	-0.042	0.230(**)	-0.491(**)	1.000					
SVR_1	-0.259(**)	-0.055	-0.422(**)	0.088(*)	0.356(**)	-0.132(**)	0.144(**)	-0.075(*)	1.000				
SVR_2	-0.334(**)	-0.069	-0.471(**)	0.117(**)	0.357(**)	-0.194(**)	0.135(**)	-0.067	0.909(**)	1.000			
SVR_3	-0.370(**)	-0.089(*)	-0.484(**)	0.156(**)	0.338(**)	-0.224(**)	0.155(**)	-0.063	0.826(**)	0.967(**)	1.000		
SVR_4	-0.377(**)	-0.101(**)	-0.493(**)	0.153(**)	0.331(**)	-0.234(**)	0.137(**)	-0.053	0.750(**)	0.913(**)	0.981(**)	1.000	
SVR_5	-0.386(**)	-0.120(**)	-0.491(**)	0.159(**)	0.318(**)	-0.253(**)	0.126(**)	-0.046	0.700(**)	0.870(**)	0.952(**)	0.990(**)	1.000

Note: *, **, and *** = significant 10%, 5%, and 1% level, respectively.

LnTREMN=the natural logarithm of total remuneration of executive directors; BDSIZE=board size; BDIND=proportion of independent members on the board; BDEXE=proportion of sitting board members with executive positions; BDAPP=proportion of sitting board members appointed by controlling shareholders; LnSIZE=natural logarithm of assets; LEV=leverage; ROA=return on assets; SVR_1=proportion of shares with voting rights belonging to the largest shareholder; SVR_2=proportion of shares with voting rights belonging to the two largest shareholders; SVR_3=proportion of shares with voting rights belonging to the three largest shareholders; SVR_4=proportion of shares with voting rights belonging to the four largest shareholders; SVR_5=proportion of shares with voting rights belonging to the five largest shareholders.

A negative association was observed between ownership concentration and the level of executive remuneration, similar other emerging markets (Firth et al., 2007; Luo, 2015). Regarding board composition, both board size and the proportion of independent members were positively associated with the level of executive remuneration. In contrast, negative associations were observed for the proportion of insiders and of members appointed by controlling shareholders.

The interaction between ownership concentration and variables of BD structure revealed a negative correlation for board size and the proportion of independent members on the BD. However, a positive correlation was observed for the proportion of members with executive positions and of members appointed by majority shareholders, suggesting that the high ownership concentration in the sampled Brazilian firms was detrimental to governance quality and, consequently, to BD structure (Crisóstomo et al., 2020).

Regression analysis

The main results of 25 estimations of the regression model testing the influence of ownership concentration and BD structure on the level of executive remuneration are reported in Table 3. None of the estimations displayed multicollinearity between the explanatory variables, as shown by the low variance inflation factors (range: 1.00–1.62) (Fávero, Belfiore, Silva, & Chan, 2009). Using the Durbin-Watson test, the independence of the residuals was confirmed by high *p*-values in all estimations. Problems of heteroscedasticity were detected with Breusch–Pagan/Cook–Weisberg tests and treated in all analyses by adopting robust standard errors obtained with White's robust correction.

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Table 3. **Results of estimations of Equation 1**

Independent variables	(i)		(ii)		(iii)		(iv)		(v)	
SVR_1	-0.913	(***)	-0.674	(***)	-0.899	(***)	-0.800	(***)	-0.850	(***)
BDSIZE	0.010									
BDIND			0.718	(***)						
BDEXE					-1.581	(***)				
BDAPP							-0.231	(*)		
CEODU									-0.363	(***)
SVR_1*BDSIZE	-0.181	(***)								
SVR_1*BDIND			-3.299	(***)						
SVR_1*BDEXE					1.802					
SVR_1*BDAPP							2.269	(***)		
SVR_1*CEODU									0.513	
ROA	-0.067		-0.059		-0.040		-0.077		-0.039	
LnSIZE	0.487	(***)	0.486	(***)	0.465	(***)	0.497	(***)	0.489	(***)
LEV	-0.097	(**)	-0.095	(**)	-0.033		-0.104	(**)	-0.072	
Constant	8.738	(***)	8.566	(***)	9.258	(***)	8.775	(***)	8.772	(***)
N	696		696		696		696		696	
R^2	0.545		0.553		0.561		0.547		0.549	
F	165.33		170.85		176.39		166.66		168.59	
p-value	0.000		0.000		0.000		0.000		0.000	
SVR_2	-1.197	(***)	-0.973	(***)	-1.167	(***)	-1.103	(***)	-1.121	(***)
BDSIZE	0.013									
BDIND			0.553	(***)						
BDEXE					-1.544	(***)				
BDAPP							-0.166			
CEODU									-0.312	(**)
SVR_2*BDSIZE	-0.080	(*)								
SVR_2*BDIND			-1.973	(**)						
SVR_2*BDEXE					-0.323					
SVR_2*BDAPP							1.683	(***)		
SVR_2*CEODU									0.970	
ROA	-0.056		-0.052		-0.030		-0.063		-0.032	
LnSIZE	0.470	(***)	0.478	(***)	0.453	(***)	0.485	(***)	0.478	(***)
LEV	-0.094	(**)	-0.093	(**)	-0.033		-0.100	(**)	-0.073	
Constant	9.257	(***)	8.998	(***)	9.718	(***)	9.204	(***)	9.217	(***)
N	696		696		696		696		696	
R^2	0.557		0.561		0.572		0.558		0.560	
F	173.86		176.80		184.75		174.22		176.07	
p-value	0.000		0.000		0.000		0.000		0.000	
SVR_3	-1.404	(***)	-1.188	(***)	-1.351	(***)	-1.314	(***)	-1.323	(***)
BDSIZE	0.013									
BDIND			0.478	(**)						
BDEXE					-1.470	(***)				
BDAPP							-0.153			
CEODU									-0.283	(**)
SVR_3*BDSIZE	-0.016									
SVR_3*BDIND			-1.246							
SVR_3*BDEXE					-2.997	(**)				
SVR_3*BDAPP							1.628	(***)		
SVR_3*CEODU									0.114	
ROA	-0.038		-0.037		-0.014		-0.046		-0.017	
LnSIZE	0.463	(***)	0.473	(***)	0.449	(***)	0.479	(***)	0.472	(***)

Continue

Table 3. Results of estimations of Equation 1

Conclusion

Independent variables	(i)		(ii)		(iii)		(iv)		(v)	
LEV	-0.082	(*)	-0.083	(*)	-0.025		-0.088	(*)	-0.064	
Constant	9.573	(***)	9.295	(***)	9.978	(***)	9.504	(***)	9.507	(***)
N	696		696		696		696		696	
R^2	0.563		0.566		0.577		0.564		0.566	
F	178.33		180.40		188.37		178.56		180.08	
p-value	0.000		0.000		0.000		0.000		0.000	
SVR_4	-1.491	(***)	-1.268	(***)	-1.437	(***)	-1.396	(***)	-1.408	(***)
BDSIZE	0.013									
BDIND			0.460	(**)						
BDEXE					-1.474	(***)				
BDAPP							-0.158			
CEODU									-0.287	(**)
SVR_4*BDSIZE	0.012									
SVR_4*BDIND			-0.862							
SVR_4*BDEXE					-3.431	(**)				
SVR_4*BDAPP							1.497	(***)		
SVR_4*CEODU									-0.307	
ROA	-0.036		-0.035		-0.012		-0.044		-0.015	
LnSIZE	0.461	(***)	0.471	(***)	0.446	(***)	0.476	(***)	0.470	(***)
LEV	-0.089	(*)	-0.089	(*)	-0.031		-0.094	(**)	-0.070	
Constant	9.724	(***)	9.433	(***)	10.134	(***)	9.656	(***)	9.660	(***)
N	696		696		696		696		696	
R^2	0.564		0.566		0.577		0.564		0.566	
F	178.64		180.56		188.81		178.99		180.52	
p-value	0.000		0.000		0.000		0.000		0.000	
SVR_5	-1.533	(***)	-1.296	(***)	-1.477	(***)	-1.430	(***)	-1.449	(***)
BDSIZE	0.011									
BDIND			0.478	(**)						
BDEXE					-1.467	(***)				
BDAPP							-0.175			
CEODU									-0.297	(**)
SVR_5*BDSIZE	0.027									
SVR_5*BDIND			-0.651							
SVR_5*BDEXE					-3.636	(**)				
SVR_5*BDAPP							1.513	(***)		
SVR_5*CEODU									-0.407	
ROA	-0.032		-0.032		-0.008		-0.041		-0.010	
LnSIZE	0.459	(***)	0.468	(***)	0.443	(***)	0.473	(***)	0.466	(***)
LEV	-0.094	(**)	-0.093	(**)	-0.036		-0.099	(**)	-0.074	
Constant	9.829	(***)	9.521	(***)	10.239	(***)	9.770	(***)	9.773	(***)
N	696		696		696		696		696	
R^2	0.562		0.565		0.576		0.563		0.565	
F	177.63		179.81		187.72		178.25		179.75	
p-value	0.000		0.000		0.000		0.000		0.000	

Note: *, **, and *** = significant 10%, 5%, and 1% level, respectively. (i), (ii), (iii), (iv), and (v) represent model estimations.

BDSIZE=board size; BDIND=proportion of independent members on the board; BDEXE=proportion of sitting board members with executive positions; BDAPP=proportion of sitting board members appointed by controlling shareholders; CEODU=CEO duality; LnSIZE=natural logarithm of assets; LEV=leverage; ROA=return on assets; SVR_1=proportion of shares with voting rights belonging to the largest shareholder; SVR_2=proportion of shares with voting rights belonging to the two largest shareholders; SVR_3=proportion of shares with voting rights belonging to the three largest shareholders; SVR_4=proportion of shares with voting rights belonging to the four largest shareholders; SVR_5=proportion of shares with voting rights belonging to the five largest shareholders.

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The first hypothesis (*H1*) was confirmed at the 1% level of significance, regardless of which measure of concentration (the proportion of voting shares of the largest or the 2, 3, 4, or 5 largest shareholders) was used in the model. Similar patterns have been observed for other markets (Hassen et al., 2015; Luo, 2015).

Board size *per se* had no influence on the level of executive remuneration, but when interacted with ownership concentration the variable increased the sensitivity of remuneration to ownership concentration quantified as the proportion of voting shares of the largest or two largest shareholders. Based on this result, our second hypothesis (*H2*) was rejected.

CEO duality affected executive remuneration negatively, contrary to our expectations (*H3*). However, when interacted with ownership concentration, the variable had no impact on the sensitivity of remuneration to ownership concentration.

The results for insiders was also surprising, considering our fourth hypothesis (*H4*). The proportion of members with executive positions was found to be negatively associated with remuneration. Also, when it interacted with ownership concentration, increased the sensitivity of remuneration to ownership concentration quantified as the proportion of voting shares of the 3, 4, or 5 largest shareholders.

The proportion of independent members on the BD had a positive effect on the level of executive remuneration, contradicting our fifth hypothesis (*H5*). However, when interacted with ownership concentration, the proportion of independent members on the BD tended to increase the sensitivity of remuneration to ownership concentration quantified as the proportion of voting shares of the largest or two largest shareholders.

Finally, the proportion of members appointed by majority shareholders *per se* did not affect the level of executive remuneration, as posited by the sixth hypothesis (*H6*). Nevertheless, when interacted with ownership concentration, the proportion of members appointed by majority shareholders reduced the sensitivity of remuneration to ownership concentration, regardless of how this was quantified. Regarding the control variables, company size was positively associated with executive remuneration, confirming the common notion that larger firms offer higher compensations (Cao, Pan, & Tian, 2011).

Overall, our findings for BD structure diverge from international studies, suggesting the MPA (Bebchuk & Fried, 2003, 2004) is not an ideal framework for the Brazilian setting.

DISCUSSION

The observed negative influence of the metrics of ownership concentration on the level of executive remuneration suggests that controlling shareholders assign little importance to remuneration policies and tend to offer top executives less handsome compensations. The substitution of closer monitoring for remuneration as a moderator of agent–principal conflicts would explain this (Almazan et al., 2005).

The negative association between ownership concentration and executive remuneration observed herein is consistent with other studies from Brazil (Anjos et al., 2015; Ermel & Monte, 2016; Pinto & Leal, 2013), Asia, the US, and Europe (Croci et al., 2012; Firth et al., 2007; Hartzell & Starks, 2003; Hassen et al., 2015; Luo, 2015).

Our results reflect the fact that ownership concentration impacts the relationship between principal and agent. According to Dyck and Zingales (2004), the concentration of power in the hands of a small number of shareholders encourages the pursuit of private benefits of control, with little concern for the cost involved in excessive compensation packages (Cao et al., 2011; John et al., 2010). Unfortunately, although it attenuates agent–principal conflicts, this behavior on part of the controllers tends to exacerbate conflicts between majority and minority shareholders (Luo, 2015).

The rejection of our hypotheses regarding insiders and CEO duality (negatively associated with the level of executive remuneration) suggests that the MPA has little relevance in the Brazilian setting. This is most likely because principal–principal conflicts are more prevalent than agent–principal conflicts in family-owned firms and other firms with high ownership concentration whose controllers are apt to interfere in the choice of top executives (Brandão & Crisóstomo, 2015; Pinto & Leal, 2013). This also reinforces the notion that, in such scenarios, less independent executives tend to be paid smaller compensations.

When interacted with ownership concentration, board size and the proportion of independent members on the BD increased the sensitivity of remuneration to ownership concentration. This may be due to low board quality in an environment of high ownership concentration when controllers, by way of substitution, take over an important part of the board's monitoring functions (Crisóstomo et al., 2020). This makes it easier to persuade board members to support policies in the controller's interest, such as lower levels of executive remuneration and the establishment of private benefits of control, which is to the detriment of minority shareholders, leading to a situation of expropriation.

The observed positive influence of the proportion of independent members on the level of remuneration may be explained as a trade-off between monitoring and remuneration, suggesting that independent board members believe in the use of financial incentives to align the interests of managers and owners, as well those of majority and minority shareholders (Mehran, 1995).

However, when the proportion of independent members on the BD and ownership concentration were interacted, the presence of independent directors was found to increase the sensitivity of remuneration to ownership concentration. A possible explanation for this finding is that, despite being an indicator of good governance, board independence is not a valued trait in firms with high ownership concentration, leading to accentuated principal–principal conflicts. Similarly, the observed negative effect of the proportion of members appointed by majority shareholders on the sensitivity of remuneration to ownership concentration is compatible with the common practice of tunneling among controllers (Cheung et al., 2005), facilitating the direct extraction of private benefits of control through opportunistic remuneration policies.

CONCLUSION

Considering agency theory and MPA, we evaluated the influence of ownership concentration and BD structure on the level of executive remuneration. Our findings have significant implications for the understanding of agency conflicts and governance on the Brazilian capital market.

The empirical evidence confirms that Brazilian public firms are most often controlled by a handful of majority shareholders. This is highly relevant for formulating corporate policies and strategies involving executive compensation.

Reinforcing the results of earlier studies, the first contribution of our investigation was to document the negative influence of ownership concentration on the level of executive remuneration, with a clear indication that controllers prefer to mitigate the classic agent–principal conflict by directly monitoring managerial actions rather than by negotiating attractive compensation packages. By doing so, controllers substitute the BD with regard to this particular function.

The lower level of remuneration controlling shareholders offer managers is an incentive to the exercise of private benefits of control, a strategy that is eventually reflected in the exacerbation of principal–principal conflicts and the expropriation of minority shareholders.

On the other hand, as the second contribution, our analysis of the influence of BD structure on executive compensation shows that the MPA is not an adequate framework for the Brazilian setting. Despite their influence on the BD, managers are unable to extract higher levels of remuneration due to the predominance of principal–principal conflicts within the Brazilian institutional context of high ownership concentration.

The notion that low BD quality is associated with high ownership concentration is supported by the observation that BD structure affects the sensitivity of remuneration to ownership concentration. This third contribution confirms that when controllers exercise power over executive remuneration policies, they also expropriate minority shareholders and substitute the BD as a monitoring body while extracting private benefits of control.

This study has some limitations, especially the short period covered by our sample and the small number of firms included. However, we believe that, by probing the relationship between ownership concentration, BD structure and executive remuneration, which is a relatively unexplored topic in the Brazilian setting, our findings are highly relevant to the debate on the dynamics of different types of agency conflicts on the Brazilian capital market and to how this relationship impacts corporate life and governance.

Future studies may consider extending the study period, including firms from other markets, incorporating institutional determinants, employing more robust statistical methods, and evaluating a wider set of governance mechanisms.

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AUTHORS' CONTRIBUTIONS

The authors declare that they participated in all stages of development of the manuscript. From the conceptualization and theoretical-methodological approach, the theoretical review (literature survey), data collection, as well as data analysis, and finally, writing and final review.

