# OWNERSHIP CONCENTRATION WEAKENS THE CORPORATE GOVERNANCE SYSTEM OF BRAZILIAN FIRM

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**ABSTRACT**
Since shareholders look for a Corporate Governance system that protects their interests, ownership concentration is seen as able to strengthen shareholders and mitigate the principal-agent conflict. This is the picture in markets with diffuse firm ownership. Nonetheless, in markets characterized by the presence of a few large controlling blockholders, the principal-principal conflict seems to be the main agency problem. This is the situation in developing and emerging economies, where large controlling blockholders may be powerful enough, not only to align managers' and their interests, but also impose their interests over minority shareholders. In scenario, large controlling blockholders might not be interested in very good corporate governance practices. For a balanced panel data of Brazilian firms in the period 2010-2013, the results suggest that ownership concentration is detrimental to corporate governance quality in Brazil. Indeed, the inverse effect of ownership concentration on corporate governance quality proposes that large controlling shareholders may be interested in the use of private benefits of control, in accordance with the expropriation hypothesis. Another important finding is the adverse effect of ownership concentration on the quality of the board composition which signals that large controlling shareholders are, in fact, substituting the monitoring function of the board. As a whole, minority shareholders are not properly protected by the weaker corporate governance system of firms with high ownership concentration, highlighting the principal-principal problem in Brazil.

**Keywords**: Corporate Governance; Ownership Concentration; Agency Theory; Principal-Principal agency model; Brazil.

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## 1 INTRODUCTION

The institutional and legal environment seem to have specific corporate governance nuances according to the local rules (Chhaochharia & Laeven, 2009). In markets with strong shareholder protection, the institutional environment tends to promote better corporate governance (Durnev & Kim, 2005). On the other hand, weak legal protection leads to market pressure for corporate governance improvement (Claessens & Yurtoglu, 2013; Klapper & Love, 2004).

Advances in corporate governance rules in the Anglo-Saxon economies, characterized by lower ownership concentration, have pointed out the importance of the board of directors which is a central element in management monitoring and minimizing the principal-agent conflicts. On the other hand, in scenarios of concentrated ownership, minority shareholders are the most interested in effective corporate governance. However, their interests may conflict

with controlling shareholders that might see the corporate governance as not so important. This is the core of the principal-principal problem (Young, Peng, Ahlstrom, Bruton, & Jiang, 2008).

There is a trend to consider ownership structure as a factor able to influence the quality of the corporate governance since shareholders are the most interested stakeholders in having their rights protected, be them large or minority shareholders (Chen, Kao, Tsao, & Wu, 2007; Larcker, Richardson, & Tuna, 2007; Shleifer & Vishny, 1986, 1997). Under the principal-principal agency model theoretical perspective, concentrated ownership may emerge as a relevant determinant of the corporate governance system, mainly in developing economies (Young, Peng, Ahlstrom, Bruton, & Jiang, 2008).

In markets with highly concentrated ownership, excess private benefits of control seems to be a reality (Aldrighi & Mazzer Neto, 2005, 2007; Dyck & Zingales, 2004; Leal, Carvalhal-da-Silva, & Valadares, 2002). In such environments, large shareholders are prone to be interested in higher control for two main reasons (Connelly, Hoskisson, Tihanyi, & Certo, 2010): maximizing the private benefits of control, and directly monitoring firm direction (Bozec & Bozec, 2007).

This work aims to assess whether ownership concentration affects the quality of the corporate governance in Brazil. In order to reach such purpose, an index for corporate governance quality is proposed and tested for a relevant sample of Brazilian firms.

Results show that, indeed, voting ownership concentration has a negative impact on the quality of corporate governance in Brazil.

The remainder of the paper is organized as follows. First, arguments on the conflicts among controlling and minority shareholders are presented. Following the rationale that large controlling shareholders try to maximize private benefits of control the hypothesis that high ownership concentration is detrimental to the quality of corporate governance is proposed. Then, methodology is presented, which is followed the presentation of results. Finally, a general assessment of our findings is provided.


## 2 THEORETICAL BACKGROUND AND HYPOTHESES

Literature has realized three scenarios of firm control, ownership structure, and the related conflicts. First, there is the situation of a widely held firm with ownership fully dispersed in hands of many shareholders, in which the information asymmetry favors managers to become powerful, and shareholders need mechanisms that allow the alignment of their interests with those of managers. This scenery gives rise to the typical agency conflict, the principal-agent problem (Grossman & Hart, 1983; Jensen & Meckling, 1976). Second, there is the situation of a firm owned by one dominant controlling blockholder associated with minority small shareholders, in which the controlling stockholder either directly manages the firm, or exerts close management monitoring, leading to reduced information asymmetry between management and control, and easy alignment of interests between controlling shareholders and management (Shleifer & Vishny, 1997). Nonetheless, the excess power of the dominant stockholder gives rise to information asymmetry between controlling and minority shareholders leading to the possibility of dominant shareholder using private benefits of control. This situation is associated to the principal-principal agency problem (Chen & Young, 2010; Dharwadkar, George, & Brandes, 2000; Jiang & Peng, 2011; Young, Peng, Ahlstrom, Bruton, & Jiang, 2008). A third scenario is the firm with no major blockholder, but with multiple active large shareholders that may compose a coalition to control the firm. In this case, this group of shareholders has information advantage over minority shareholders and the principal-principal agency problem is also present (Jiang & Peng, 2011).

It is plausible to consider that a dominant controlling shareholder, or multiple large shareholders composing a coalition to control the firm, may be interested in shaping corporate

governance systems that favor their interests (Kang & Shivdasani, 1995; Yafeh & Yosha, 2003; Young, Peng, Ahlstrom, Bruton, & Jiang, 2008).

Literature has documented that large shareholders are active in corporate governance (Kang & Shivdasani, 1995; Yafeh & Yosha, 2003). In this vein, two insightful proposals have received attention of research under the theoretical framework of the principal-principal agency conflict. First, dominant shareholders have incentives to maintain weak internal control system as a way to facilitate the increase of private benefits of control which is associated to the expropriation effect argument (Bozec & Bozec, 2007; Johnson, La Porta, Lopez-de-Silanes, & Shleifer, 2000; Shleifer & Vishny, 1997). Second, high ownership concentration by blockholders may yield incentives to limit management opportunism which means more effective management monitoring by controlling blockholders. This is related to the substitution effect which means that powerful shareholders decide to exert management monitoring substituting the board function (Bozec & Bozec, 2007; Desai, Kroll, & Wright, 2005; Rediker & Seth, 1995).

## 2.1 Hypotheses Rationale

The possibility of expropriation is present when large shareholders have control power, and envision private gains, even in detriment of minority shareholders. Weaker corporate governance may contribute to this kind of malicious behavior by large blockholders. This way, the relation between ownership concentration and the quality of the corporate governance may be driven by controlling blockholders' interests.

In summary, the expropriation hypothesis proposes that controlling shareholders could be prone to use their power to obtain private benefits of control, even against the interest of minority shareholders (La Porta, López-de-Silanes, Shleifer, & Vishny, 1999). The more concentrated voting ownership, the easier it will be for controlling shareholders to use private benefits of control. In this vein, taking into account the reality of Brazil, characterized by high ownership concentration and the existence of private benefits of control that highlight the principal-principal agency problem (Dyck & Zingales, 2004), we propose the hypothesis that controlling shareholders of Brazilian firm might have a preference for weaker corporate governance system in the following terms:

*Hypothesis 1: Ownership concentration has a negative impact on the quality of the corporate governance system of the Brazilian firm.*

High ownership concentration is more relevant and common in markets with weak legal protection and low enforcement. The gain obtained by concentrated voting power may be a form that controlling shareholders have to impose their interests over those of other stakeholders, like malicious managers, employees, and minority shareholders (Denis & McConnell, 2003; La Porta, López-de-Silanes, Shleifer, & Vishny, 2000; Roe, 2006).

Under the agency theory framework, corporate governance has the main purpose to align the interests of shareholders and managers. In this regard, shareholders assess the cost-benefit tradeoff of the corporate governance system in effectively monitoring management. The substitution hypothesis refers to the possibility that controlling shareholders assume this monitoring activity considering they prefer to exert control over management directly, rather than installing costly corporate governance systems to do it (Alchian & Demsetz, 1972; Rediker & Seth, 1995; Roe, 2006). In this respect, powerful controlling shareholders would act as a substitute of the formal corporate governance system, decreasing the relevance of the control exercised by the board of directors. This way, high ownership concentration becomes an important internal control mechanism, substituting the board function, as proposed and documented previously in the literature as the interpretation of the negative effect of ownership concentration on the quality of the board composition (Bhathala & Rao, 1995; Bozec & Bozec, 2007; Desai, Kroll, & Wright, 2005; Prevost, Rao, & Hossain, 2002; Rediker & Seth, 1995).

The previous evidence, along with the abovementioned situation of Brazilian market of high ownership concentration with a great number of firms with only one controlling shareholder (Leal, Carvalhal-da-Silva, & Valadares, 2002), motivates the proposition that controlling shareholders tend to substitute the monitoring activity of the board.

> *Hypothesis 2: High ownership concentration has a negative impact on the quality of the board composition.*

The separation between voting rights and cash flow rights is a reality in dual class stock structures. Such separation allows large controlling voting shareholders to keep firm control with low capital investment. The ownership discrepancy between voting rights and cash flow rights corresponds to the degree of deviation from the one-share-one-vote structure. With the gap, or divergence, between cash flow rights and voting rights, controlling shareholders may widen their prevalent influence over the firm's decision-making process allowing the use of private benefits of control which may be detrimental to minority shareholders' rights (Claessens, Djankov, Fan, & Lang, 2002). As above mentioned, the presence of large shareholders is very common worldwide, and, specifically, in Latin America where it is very common to find only one controlling shareholder or a coalition of controlling ones. In such markets, as is the case of Brazil, dual class stock is a reality and contributes to the presence of pyramidal ownership structures (Aldrighi & Mazzer Neto, 2005, 2007). In these countries, the larger the divergence between voting rights and cash flow rights, the more powerful will be the controlling shareholders, and more prone to use private benefits of control and directly monitor firm management, which leads to the proposition of the following hypothesis:

> *Hypothesis 3: Excess control over cash flow rights has a negative impact on the quality of the corporate governance system.*

## 3 SAMPLE AND METHOD

### 3.1 Sample

Two sources of data have been used to compose our sample. The firm Reference Form available at CVM (*Comissão de Valores Mobiliários* - The Brazilian SEC), which contains data relative to firm corporate governance practices. Financial and ownership data have been collected from Economática database. The final sample is a balanced panel data relative to 85 firms, in the period 2010-2013, with 340 firm-year observations. The sample is relevant for corporate governance studies since it is composed of firms with high market liquidity (0,7964) and presence (92,84%). Besides, sample firms are distributed among several sectors of the economy (Table 1), a plenty of them have composed the IBOVESPA index.

**Table 1 - Firms sample by industry**

| Industry | N | % |
|---|---|---|
| Mining, metals and metal goods | 16 | 4,71 |
| Motor vehicles and parts, and other transport equipment | 8 | 2,35 |
| Wood, Paper and paper products | 12 | 3,53 |
| Communication and mídia | 16 | 4,71 |
| Textile, clothing, leather and footwear | 12 | 3,53 |
| Petroleum and fuel products | 12 | 3,53 |
| Food, drink and tobacco | 24 | 7,06 |
| Miscellaneous manufacturing industries | 20 | 5,88 |
| Electrical | 72 | 21,18 |
| Building and transportation | 32 | 9,41 |
| Bank and Financial services | 44 | 12,94 |
| Business sector services | 20 | 5,88 |
| Trade and retailing | 20 | 5,88 |
| Miscellaneous services | 32 | 9,41 |
| Total | 340 | 100 |

## 3.2 Method and models

### 3.2.1 Corporate governance measurement

Properly measuring corporate governance quality is still a challenge, as highlighted in the literature with different approaches proposed (Aguilera & Desender, 2012; Ahrens, Filatotchev, & Thomsen, 2011; Black, Love, & Rachinsky, 2006; Larcker, Richardson, & Tuna, 2007).

Good corporate governance practices have been expressed in corporate governance codes in different countries (Aguilera & Cuervo-Cazurra, 2004, 2009). A set of studies dealing with corporate governance system quality at the firm level have taken into account specific corporate governance practices, like board independency and composition, CEO duality, management and board mandate. Another group of works have proposed corporate governance metrics, or indices, that comprise several corporate governance practices. This strategy intends to allow a more comprehensive view of the quality of the firm's corporate governance system as whole (Aguilera & Desender, 2012). Usually, such indices are based on shareholder rights, procedures and structure of the board of directors, disclosure, and, even characteristics of ownership structure (Claessens & Yurtoglu, 2013). Insightful corporate governance indices have been suggested in different markets (Dey, 2008; Gompers, Ishii, & Metrick, 2003; Klein, Shapiro, & Young, 2005; La Porta, López-de-Silanes, Shleifer, & Vishny, 1999; Ntim, 2013). Such indices have also been used in the Brazilian market (Correia, Amaral, & Louvet, 2011; Silva & Leal, 2005; Silveira & Barros, 2008).

The metric used in this work integrates a set of good corporate governance practices, pointed out as relevant in the literature. Such corporate governance practices are grouped into distinct dimensions: Stockholder; Shares; Board structure; Board composition; Board practices; Executive management; Firm disclosure; Auditing; Conflicts management. These corporate governance dimensions have been highlighted as relevant in Brazil by important market institutions following the international trend (CVM, 2002; IBGC, 2009; PREVI, 2012).

In total, the proposed corporate governance index comprises 28 voluntary good corporate governance practices recommended for the Brazilian firm as depicted in the Appendix A. Such data of Brazilian firm has been disclosed only since 2010 through the firm Reference Form ("Formulário de Referência-FR") at CVM (The Brazilian SEC) web site.

The annual firm Index of Corporate Governance Quality (ICGQ) has been calculated from the 28 corporate governance items considered. A score from zero to one has been set to each of the 28 firm items analyzed annually. The ICGQ is the average of all 28 items, varying from 0 to 1. An index for the quality of the board composition has also been measured comprising four items related specifically to the board composition: segregation of CEO and Chairman, proportion of external board members, proportion of independent board members, and minority shareholders representative (Appendix A).

### 3.2.2 Models and variables

We estimate econometric models that take into account the proposals of the expropriation and substitution hypotheses under the perspective of the principal-principal agency model. Model of equation (1) is used to assess the effect of ownership concentration on the quality of corporate governance system (ICGQ) (see Appendix A).

$$ICGQ_{i,t} = \beta_0 + \beta_1\ OC_{i,t} + \beta_2\ ROA_{i,t} + \beta_3\ GOPP_{i,t} + \beta_4\ SIZE_{i,t} + \delta_t + \alpha_i + \mu_{i,t} \qquad (1)$$

Model of equation (2) has been estimated to measure the impact of ownership concentration over the quality of the board composition. According to Hypothesis 2, large controlling shareholders tend to substitute the monitoring function of the board which leads to weaker board.

$$BOARDC_{i,t} = \beta_0 + \beta_1\ OC_{i,t} + \beta_2\ ROA_{i,t} + \beta_3\ GOPP_{i,t} + \beta_4\ SIZE_{i,t} + \delta_t + \alpha_i + \mu_{i,t} \qquad (2)$$

BOARDC is the index for the quality of the board composition. BOARDC is calculated taking into account CEO duality, external board members, independent board members, and minority shareholders representation (see Appendix A).

In both equation models (1) and (2), *t* refers to time period; *i* refers to firm; $\delta_t$ is the error term related to time-specific effects; $\alpha$ is the error term associated with firm-specific effects (which includes unobservable firm-specific characteristics); $\mu_{i,t}$ is the random error term.

Independent variable OC refers to the proxies used for ownership concentration. Models have been estimated using OC measured by voting ownership concentration in hands of the main shareholder (VOC1), the three main (VOC3), and the five main voting shareholders (VOC5). Other group of models has been estimated to assess the possible quadratic relation of ownership concentration and corporate governance, also for the first (VOC1_2), the three (VOC3_2) and the five main voting shareholders (VOC5_2). Additionally, a set of models have been estimated for the difference between control and cash flow rights, also taking into account the difference of rights for the first, the three, and the five main shareholders (DIFFR1, DIFFR3, and DIFFR5).

Relevant control variables pointed out in the literature have been introduced in the models: profitability, growth opportunities, firm size, and industry. Although financial performance is most frequently seen as affected by corporate governance, the opposite, and also the possible endogeneity is also stated in the literature under the rationale a poor performing firm would try to improve its corporate governance as way to offset such status, and a well performing one would also look for good governance practices to show that external investors and minority shareholders are protected (Holm & Schøler, 2010; Love, 2011; Silveira, Leal, Carvalhal-da-Silva, & Barros, 2010).

Firm Growth Opportunities (GOPP) have been seen as able to matter on corporate governance under the rationale that a firm with investment opportunities needs more external funding and the adoption of good corporate governance practices is relevant for that (Durnev & Kim, 2005; Klapper & Love, 2004; Silveira, Leal, Carvalhal-da-Silva, & Barros, 2010). Firm Growth Opportunities (GOPP) are proxied by Tobins' Q as usual in the literature. We have used average *q* as proxy for marginal *q*, measured as the ratio of a firm's market value (the sum of equity at market value plus debt at book value) to book value (Moyen, 2004; Villalonga & Amit, 2006).

Firm size (SIZE), proxied by Natural logarithm of total assets, is taken into account following the literature that highlights its importance. The rationale is that larger firms have resources to implement costly corporate governance practices at the same time needs it for better management control minimizing free cash flow problems, while, at the same time, smaller firms need a good corporate governance system to improve the relation with funding market (Durnev & Kim, 2005; Holm & Schøler, 2010; Klapper & Love, 2004). Additionally, sector and time dummies have also been introduced in the models.

### 3.3.3 Econometric Method

Models have been estimated using panel data methodology, which allows the treatment of unobservable heterogeneity associated with fixed firm effects. Unobservable specific firm errors can be eliminated from the equation through variable transformation by first differences (Arellano & Bover, 1995). Coefficients have been estimated using Generalized Method of Moments (GMM) system estimator (GMM-sys) that provides better estimators when the period of study is relatively short (Arellano & Bond, 1998; Blundell & Bond, 1998). GMM-sys is a combination of GMM in first differences (GMM-dif) with level transformations. GMM-dif uses variable differences with the purpose to eliminate unobservable heterogeneity. Then, possible endogenous variables are instrumented. Since GMM-dif instruments may be not correlated to possible endogenous variables when the intercept coefficient tend to unity, and when there is

variance in firm fixed effects, level transformation is performed by converting instruments in differences to make them exogenous to fixed effects (Blundell & Bond, 1998). Those differences are reflected in the quality of the instruments involved and the existence of weak instruments may lead to a poor asymptotic precision in finite samples (Alonso-Borrego & Arellano, 1999; Levine, Loayza, & Beck, 2000). Therefore, an estimator that lessens this problem is used, substituting the specification in differences with the original regression specified in levels such as the system estimator (Blundell & Bond, 1998; Öztekin & Flannery, 2012). Estimating the model that way, the system estimator involves two kinds of equations with their own instruments. The first category of equations is in levels and its instruments are the lagged differences in the dependent and independent variables. The second category of equations consists of equations in first differences with the levels of the dependent variable and the independent variables as instruments (Arellano & Bond, 1998; Wooldrigde, 2002). In our case, by using the GMM method, we can build instruments for those variables that are potentially endogenous.

To test the validity of the model's specifications, we calculate the Hansen test of over-identification of restrictions. This test examines the lack of correlation between the instruments and the error term. Given the use of first-difference transformations, we expect some degree of first-order serial correlation, although this correlation does not invalidate the results. However, the presence of second-order serial correlation does signal omitted variables.

## 4  RESULTS

Table 2 exhibits descriptive statistics of model variables. Sample firms has reached about 61% of corporate governance quality (ICGQ) and only 55% of board composition quality (BOARDC). It is worth mentioning the high ownership concentration documented which is in accordance with previous information from Brazil (Leal, Carvalhal-da-Silva, & Valadares, 2002; López-Iturriaga & Crisóstomo, 2010). Such voting ownership is 49.4% in hands of the main voting shareholder (VOC1) and reaches 70.7% in hands of the five main shareholders (VOC5). The low coefficient of variation highlights the homogeneity of firms in terms of high concentration. As can be seen, there is low voting ownership among the second up to the fifth largest shareholder, varying from 13.5% to 21.3% (OC2, OC23, OC234, OC2345).

**Table 2 - Descriptive statistics**

| Variable | Average | Median | Min | Max | Std Dev | Coefficient of Variation |
|---|---|---|---|---|---|---|
| ICGQ | 0.611 | 0.611 | 0.273 | 0.882 | 0.099 | 0.161 |
| BOARDC | 0.555 | 0.551 | 0.036 | 0.904 | 0.148 | 0.267 |
| VOC1 | 0.494 | 0.505 | 0.020 | 1.000 | 0.256 | 0.518 |
| VOC3 | 0.674 | 0.708 | 0.020 | 1.000 | 0.246 | 0.364 |
| VOC5 | 0.707 | 0.752 | 0.020 | 1.000 | 0.232 | 0.328 |
| DIFFR1 | 0.097 | 0.000 | -0.206 | 0.581 | 0.157 | 1.623 |
| DIFFR3 | 0.104 | 0.000 | -0.062 | 0.568 | 0.161 | 1.552 |
| DIFFR5 | 0.096 | 0.000 | -0.070 | 0.549 | 0.150 | 1.559 |
| GOPP | 1.789 | 1.391 | 0.053 | 8.718 | 1.479 | 0.827 |
| SIZE | 15.389 | 15.086 | 12.315 | 20.057 | 14.268 | 0.093 |

ICGQ is the index for Corporate Governance Quality. BOARDC is the index for the quality of the board composition. VOC1 is the voting ownership concentration held by the main voting shareholder. VOC3 and VOC5 stand, respectively, for such concentration held by up to the three, and up to the five main voting shareholders. DIFFR1 is the excess voting rights over cash flow rights held by the main shareholder. DIFFR3 and DIFFR5 refer to such measure relative to the three and five main shareholders, respectively. GOPP stands for growth opportunities, proxied by Tobin's Q. SIZE is firm size, proxied by Ln of total assets.

A deeper analysis of this picture of high concentrated ownership can be seen in Table 3 that exhibits the number of blockholders that hold firm control by summing more than 50% of voting ownership (NB50). As depicted (Table 3, Panel A), 52.35% of firms have one

blockholder with more than 50% of voting capital, i.e., such high proportion of firms has one controlling shareholder. The number of firms with two controlling shareholders is 20.59% leading to cumulative percentage of 72.94% of firms controlled by only two large blockholders. As a whole, 82.06% of firms have control in hands of up to five main shareholders. Numbers exhibited in Table 3 (Panel B) details the proportion of voting shares held by the five largest shareholders of Brazilian firm. As can be seen, a huge concentration of voting shares is a reality in Brazil, notably in firms with one controlling blockholder which has an average 68.88% of voting capital is held by him/her. Coalitions to control the firm, needed in the absence of a major controlling shareholder, may be obtained with only a few blockholders. In 20.59% of the firms, two blockholders hold an average 63.16% of voting capital and may have interests aligned easily. The reality that 82.06% of firms will reach a coalition among up to five controlling blockholders is not favorable to minority shareholders and the principal-principal agency problem tends to be prominent. In such a scenario, large controlling blockholders may easily compose a coalition to control the firm, impose their interests, and gain advantages from private benefits of control.

**Table 3 - Number of shareholders holding more than 50% of voting capital**

| | Panel A Number of controlling shareholders | | | Panel B Sum of voting ownership concentration held by up to the five largest shareholders (%) | | | | | Panel C Values of ICGQ and BOARDC | |
|---|---|---|---|---|---|---|---|---|---|---|
| NB50 | N | % | Cum% | 1 | 2 | 3 | 4 | 5 | ICGQ | BOARDC |
| 1 | 178 | 52.35 | 52.35 | 68.88 | 80.40 | 82.93 | 83.47 | 83.67 | 0.58 | 0.53 |
| 2 | 70 | 20.59 | 72.94 | 40.39 | 63.16 | 70.71 | 74.93 | 76.04 | 0.60 | 0.48 |
| 3 | 11 | 3.24 | 76.18 | 27.33 | 45.45 | 55.81 | 62.41 | 64.38 | 0.67 | 0.58 |
| 4 | 12 | 3.53 | 79.71 | 23.85 | 38.99 | 47.27 | 54.31 | 59.15 | 0.65 | 0.58 |
| 5 | 8 | 2.35 | 82.06 | 20.40 | 32.56 | 41.54 | 47.54 | 51.26 | 0.68 | 0.65 |
| > 5 | 61 | 17.94 | 100 | 15.47 | 23.00 | 27.97 | 31.12 | 32.72 | 0.69 | 0.70 |
| Total | 340 | 100 | | 49.36 | 62.83 | 67.44 | 69.76 | 70.70 | 0.61 | 0.56 |

NB50 = number of shareholders that, together, hold more than 50% of voting stocks. N = number of firm-year observations for each NB50. In Panel B, each column contains ownership concentration up to the five main (1-5) voting shareholders by each NS50. Panel C exhibits ICGQ and BOARDC for each NB50.

Besides the picture on ownership concentration, the values depicted for the Index of Corporate Governance Quality (ICGQ) and for the index of the board composition quality (BOARDC) show lower values for both indices in firms with reduced number of controlling blockholders (Table 3, Panel C). The discrepancy is even higher for the quality of the board composition. This is an initial indication that highly concentrated ownership tends to weaken the corporate governance system.

As abovementioned, different models of equation (1) have been estimated taking into account ownership concentration with distinct proxies. First, models are estimated with the independent variable OC being ownership concentration in hands of the main shareholders, first (VOC1), three main (VOC3), and five main stockholders (VOC5). Second, models are estimated with the independent variable OC being the squared ownership concentration held by the main shareholders, first (VOC1_2), three main (VOC3_2), and five main (VOC5_2). At last, the main explanatory variable is the difference between control and cash flow rights for the main shareholder (DIFFR1), the three main shareholders (DIFFR3), and the five main shareholders (DIFFR5).

As can be observed in Table 4 (Panel A), as proposed in Hypothesis 1, the findings indicate that there is a negative effect of ownership concentration (VOC1, VOC3, VOC5) over

corporate governance quality (ICGQ). This adverse influence signals that large shareholders, indeed, have a preference for weaker corporate governance.

Additional analysis has shown that there is also a quadratic negative relation between ownership concentration (VOC1_2, VOC3_2, VOC5_2) and corporate governance quality (ICGQ) (Table 4, Panel B). That indicates that, in fact, even higher degree of concentrated ownership is, effectively, more detrimental to corporate governance quality (ICGQ). Lower ownership concentration leads to the absence of a major shareholder and the need for agreements among large shareholders, with possible improvements in corporate governance practices.

**Table 4 - Effect of ownership concentration on the quality of corporate governance**

|  | Panel A - Linear relation | | | Panel B -Quadratic relation | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | (i) | (ii) | (iii) | (i) | (ii) | (iii) |
| VOC1 | -0.2470 *** |  |  |  |  |  |
| VOC3 |  | -0.2256 * |  |  |  |  |
| VOC5 |  |  | -0.2080 *** |  |  |  |
| VOC1_2 |  |  |  | -0.2083 *** |  |  |
| VOC3_2 |  |  |  |  | -0.2239 * |  |
| VOC5_2 |  |  |  |  |  | -0.2501 ** |
| ROA | 0.0823 | 0.0492 | -0.0465 | 0.0587 | 0.0422 | 0.0191 |
| GOPP | -0.0117 | -0.0113 | -0.0071 | -0.0122 | -0.0104 | -0.0092 |
| SIZE | 0.0132 | 0.0213 | 0.0139 | 0.0084 | 0.0244 | 0.0298 |
| Intercept | 0.5128 | 0.3913 | 0.4873 * | 0.5172 | 0.2998 | 0.2198 |
| N. Obs. | 340 | 340 | 340 | 340 | 340 | 340 |
| N. Firms | 85 | 85 | 85 | 85 | 85 | 85 |
| F | 6.69 | 7.89 | 7.6 | 6.03 | 6.28 | 7.86 |
| p-value | 0 | 0 | 0 | 0 | 0 | 0 |
| AR2 | 0.481 | 0.344 | 0.551 | 0.398 | 0.241 | 0.299 |
| Hansen | 16.28 | 12.13 | 32.76 | 18.08 | 12.72 | 12.17 |
| p-value | 0.699 | 0.735 | 0.429 | 0.582 | 0.693 | 0.732 |

Dependent variable is ICGQ (Index for Corporate Governance Quality). VOC1 = ownership concentration held by main shareholder. VOC3 and VOC5 stand for such concentration held by up to the three and the five main shareholders, respectively. VOC1_2, VOC3_2 and VOC5_2 = ownership squared. ROA = Return on assets. GOPP stands for growth opportunities (Tobin's Q). SIZE = firm size (Ln(total assets)). Models are estimated by two step system generalized method of moments (GMM). Estimated coefficients and standard errors robust to heteroskedasticity. ***, **, and * denote statistical significance of the coefficients at 1, 5, and 10% levels.

Table 5 exhibits important findings that reveal an effective negative influence of ownership concentration over the quality of the board composition (BOARDC). Such detrimental effect has been detected for the negative relation between ownership concentration (VOC1, VOC3, VOC5) and the index relative to the quality of the board composition (BOARDC) (Table 5, Panel A).

**Table 5 - Effect of ownership concentration on the quality of the board composition**

| | Panel A - Linear relation | | | Panel B - Quadratic relation | | |
|---|---|---|---|---|---|---|
| | (i) | (ii) | (iii) | (i) | (ii) | (iii) |
| VOC1 | -0,2907** | | | | | |
| VOC3 | | -0,5149** | | | | |
| VOC5 | | | -0,5770*** | | | |
| VOC1_2 | | | | -0,0631 | | |
| VOC3_2 | | | | | -0,2010 | |
| VOC5_2 | | | | | | -0,5092** |
| ROA | 0,4888 | 0,0786 | 0,0545 | 0,7310 | -0,1070 | -0,0044 |
| GOPP | 0,0284 | 0,0236 | 0,0185 | 0,0119 | 0,0049 | 0,0260 |
| SIZE | 0,0811 | 0,0166 | 0,0213 | -0,0122 | -0,0025 | 0,0230 |
| Intercept | -0,7277 | 0,6163 | 0,6037 | 0,6395 | 0,6988 | 0,4423 |
| N. Obs. | 340 | 340 | 340 | 340 | 340 | 340 |
| N. Firms | 85 | 85 | 85 | 85 | 85 | 85 |
| F | 2,66 | 2,89 | 3,82 | 1,35 | 2,38 | 2,87 |
| p-value | 0,001 | 0 | 0 | 0,172 | 0,003 | 0 |
| AR2 | 0,111 | 0,104 | 0,152 | 0,233 | 0,107 | 0,154 |
| Hansen | 3,53 | 7,75 | 6,71 | 5,37 | 23,02 | 6,46 |
| p-value | 0,74 | 0,859 | 0,917 | 0,615 | 0,732 | 0,928 |

Dependent variable is BOARDC (quality of the board composition). VOC1 = ownership concentration held by main shareholder. VOC3 and VOC5 stand for such concentration held by up to the three and the five main shareholders, respectively. VOC1_2, VOC3_2 and VOC5_2 = ownership squared. ROA = Return on assets. GOPP stands for growth opportunities (Tobin's Q). SIZE = firm size (Ln(total assets)). Models are estimated by two step system generalized method of moments (GMM). Estimated coefficients and standard errors robust to heteroskedasticity. ***, **, and * denote statistical significance of the coefficients at 1, 5, and 10% levels.

The findings of the additional analysis about the possible nonlinear relation between ownership concentration (VOC1_2, VOC3_2, VOC5_2) and the quality of the board composition (BOARDC) is worth mentioning (Table 5, Panel B). The quadratic negative relation between ownership concentration and the quality of the board composition (BOARDC) has been observed for the concentration in hands of the five main voting shareholders (VOC5_2). Notwithstanding, the squared concentration of voting shares held by the main and the three main shareholders has no significant relation with the board composition (BOARDC). That indicates the noteworthy negative effect of ownership concentration in hands of the three main voting blockholders. Not even at low levels of concentrated ownership there is any beneficial effect on the board composition. This way, the negative effect of ownership concentration is, effectively, linear for high degree of concentration among up to the three main shareholders. The significant inverse U-shaped relation detected for ownership among the five main shareholders is a signal that the need to form a coalition of control among a larger number of powerful large blockholders is positive for corporate governance at lower levels of concentration. This is deeper analyzed ahead by taking into account the voting power of the second until the fifth largest shareholder.

The examination of the relation between the divergence of control over cash flow rights (DIFFR1, DIFFR3, DIFFR5) and the quality of the corporate governance practices (ICGQ) is worth mentioning. As can be observed in Table 6 (Panel A), the difference between control and cash flow rights of the main shareholder (DIFFR1) has shown to affect negatively the quality of the corporate governance system while the difference of the three (DIFFR3) and five main shareholders (DIFFR5) do not affect corporate governance practices. This finding shows that, indeed, the high degree of control rights in hands of the main shareholder is negative to corporate governance at the same time that such control, diluted among multiple large shareholders, seems to be not so detrimental to corporate governance.

The scrutiny of the relation between the divergence of control over cash flow rights (DIFFR1, DIFFR3, DIFFR5) and the quality of the board composition (BOARDC) has shown a similar effect to that obtained over the quality of corporate governance as can be seen in (Table 6, Panel B). The divergence of control rights over cash flow rights has shown that the higher the control rights exerted by the main shareholder, the weaker the board composition (BOARDC) is. The negative effect has not been found for difference in rights documented for the three main shareholders (DIFFR3), and the five main shareholders (DIFFR5). That means that high degree of control rights in hands of the main voting shareholder is, effectively, negative to the board composition. Large controlling blockholders do not have interest in external and independent board members.

**Table 6 - Effect of the difference between control and cash flow rights on Corporate Governance**

|  | Panel A - The effect on the quality of corporate governance as a whole (Dependent variable ICGQ) | | | Panel B – The effect on the quality of the board composition (Dependent variable BOARDC) | | |
|---|---|---|---|---|---|---|
| DIFFR1 | -0.3408** | | | -0,5285* | | |
| DIFFR3 | | -0.1935 | | | -0,2944 | |
| DIFFR5 | | | -0.0103 | | | 1,0544 |
| ROA | -0.0483 | -0.0934 | -0.0824 | -0,1375 | -1,6299 | -2,1717 |
| GOPP | -0.0197*** | -0.0187*** | -0.0095 | 0,0025 | 0,0668 | 0,0635 |
| SIZE | 0.0100 | 0.0018 | -0.0183 | 0,0141 | -0,0831 | -0,1968 |
| Intercept | 0.4773 | 0.5822 | 0.8469** | 0,3904 | 1,8761 | 3,7066 |
| N. Obs. | 340 | 340 | 340 | 340 | 340 | 340 |
| N. Firms | 85 | 85 | 85 | 85 | 85 | 85 |
| F | 8.95 | 5.2 | 5.27 | 2,07 | 0,83 | 1,74 |
| p-value | 0 | 0 | 0 | 0,011 | 0,668 | 0,043 |
| AR2 | 0.645 | 0.748 | 0.94 | 0,196 | 0,579 | 0,782 |
| Hansen | 14.83 | 13.05 | 27.06 | 14,26 | 0,78 | 3,22 |
| p-value | 0.786 | 0.875 | 0.253 | 0,817 | 0,941 | 0,864 |

DIFFR1 = excess voting rights over cash flow rights held by the main shareholder. DIFFR3 and DIFFR5 refer to such measure relative to the three and five main shareholders, respectively. ROA = Return on assets. GOPP stands for growth opportunities (Tobin's Q). SIZE = firm size (Ln(total assets)). Models are estimated by two step system generalized method of moments (GMM). Estimated coefficients and standard errors robust to heteroskedasticity. ***, **, and * denote statistical significance of the coefficients at 1, 5, and 10% levels.

## 5 DISCUSSION AND CONCLUSIONS

Two agency models are perceived under the Agency theory framework: the principal-agent agency model which has as central point the conflicts between stockholders and managers; and another model characterized by the conflicts between large controlling blockholders and minority shareholders, known as the principal-principal agency model, that is more common in countries with high concentrated ownership and poor legal protection for investors. This work has advanced research on the role played by ownership concentration over corporate governance by studying the Brazilian market, an important emerging market where the protection for minority shareholders are not yet adequate and principal-principal conflict tend to be more prominent.

The findings of the present work reveal that, indeed, ownership concentration is relevant for the worse quality of the corporate governance system. The documented adverse effect of ownership concentration on corporate governance is an important signal that large controlling blockholders of Brazilian firm may be interested in the use private benefits of control at the expense of minority shareholders in line with the expropriation hypothesis. Another crucial finding is the negative effect of ownership concentration on the quality of the board

composition. That is an meaningful signal that ownership concentration acts as an internal control mechanism in the Brazilian firm. Large controlling blockholders are not interested in independent and qualified board and, in fact, are substituting the monitoring function of the board.

As a whole, our findings bring to light the principal-principal agency problem in the Brazilian market. In fact, the detrimental effect of ownership concentration on the quality of the corporate governance practices and board composition reveals that large blockholders prefer weaker corporate governance system which may ease the use of private benefits of control.

We believe that this study contributes to the studies on corporate governance in the Brazilian market by discussing how the different interests of shareholders can be reflected in the quality of corporate governance of the Brazilian company. Besides the risk of expropriation indicated by ownership concentration, ownership concentration as a governance practice replacing other formal control mechanisms, although already addressed in the international literature, is still little explored in Brazil. It is also noteworthy that the index to measure the quality of corporate governance (IQGC) attempts to advance the introduction of best practices.

Considering the importance of corporate governance for the mitigation of information asymmetry problems between the firm and market, and the consequent better access to external financing, the reality that large shareholders are not interested in better governance might mean that they managing these problems otherwise. In this context, Brazilian companies, especially those with more concentrated ownership, may be, in fact, having a pecking-order behavior, using internal funds to finance investment. Access to debt and equity issue may be adversely affected by incipient quality of governance, particularly the equity issue, which is not widely used in Brazil.

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# APPENDIX A

| Exhibit 1. | | | |
|---|---|---|---|
| Dimension | Item | Corporate governance practice measurement | Data source |
| Shareholder | Voting right | Voting right of each share class (0 – no right; 0,5 – restrict; 1 – full) multiplied by the proportion of each share class | FR, item 18.1 |
| | *Tag along* | *Tag along* proportion multiplied by the proportion of each class relative to total shares | FR, item 18.1 |
| | Firm annual meeting | Minimum period of notice of 30 days for the Annual Meeting (AM) (0,25 – sim; 0 – não) | FR, item 12.2 |
| | | Electronic transmission of the Annual Meeting (0,25 – yes; 0 – no) | FR, item 12.2 |
| | | Communication means between company and shareholders about the AM through the Internet (0,25 – yes; 0 – no) | FR, item 12.2 |
| | | Inclusion of shareholders proposals on the agenda of the AM allowed (0,25 – yes; 0 – no) | FR, item 12.2 |
| Shares | Voting shares | % of common shares issued by the company | FR, item 15.1 |
| | *Free float* | Percentage of shares outstanding | FR, item 15.3 |
| Board Structure | Board size | From 5 to 11 effective members (1 – yes; 0 – no) | FR, itens 12.6/8 |
| | Board Committees | The Board has the Audit Committee (0,33 – yes; 0 – no) | FR, itens 12.1/7 |
| | | Board has Remuneration Committee (0,33 – yes; 0 – no) | FR, itens 12.1/7 |
| | | Board has Corporate Governance Committee (0,33 – yes; 0 – no) | FR, itens 12.1/7 |
| Board composition | CEO duality | Segregation of the President of the Board (Chairperson) and CEO (1 – yes; 0 – no) | FR, itens 12.6/8 |
| | External board members | external directors / total board members | FR, itens 12.6/8 |
| | Independent board members | Independent board members / total board members | FR, itens 12.6/8 |
| | Minority shareholders representative | minority board members / total board members) | FR, itens 12.6/8 |
| Board practices | Board's mandate | One year (1), two years (0,5), three years (0) | FR, item 12.1, or company statute |
| | Board assessment | Existing assessment mechanisms for the board, and/or board members (1 – yes; 0 – no) | FR, item 12.1 or company statute |
| | Floating board compensation | 1 – yes; 0 – no | FR, itens 13.1/2 |
| Executive management | Floating executive compensation | 1 – yes; 0 – no | FR, itens 13.1/2 |
| | Stock options | Firm has compensation plans based on stock options for managers (1 – yes; 0 – no) | FR, itens 13.1/2 |
| | Mandate of Management | one year (1); two years (0,5); three years (0) | FR, item 12.1, or company statute |
| | Management assessment | Assessment of Executive management or of its members (1 – yes; 0 – no) | FR, item 12.1, or company statute |
| Disclosure | Accounting information quality | Punctually on financial disclosure CVM (0,33 – yes; 0 – no) | CVM Web site |
| | | Firm not notified by CVM to reissue any financial report (0,33 – yes; 0 – no) | CVM Web site |
| | | Independent Audit Opinion with no restriction (0,33 – yes; 0 – no) | DFP |
| | Voluntary Disclosure | Firm issues sustainability report or similar (0,5 – yes; 0 – no) | Firm web site / Bm&Bovespa |
| | | Firm publishes projections on performance (0,25 – yes; 0 – no) | FR, item 11.1 |
| | | Firm discloses nonfinancial performance (0,25 – yes; 0 – no) | FR, item 3.2 |
| Fiscal committee | Fiscal committee presence | Fiscal committee installed: permanent (1); installed for the year but not permanent (0,5); Not installedo in the year (0) | FR, item 12.1, or company statute |
| | Fiscal committee compensation | Fiscal committee members do not receive variable compensation (0,5 – yes; 0 – no) | FR, item 13.1/2 |
| | | The firm does not have compensation plan based on stock for Fiscal committee members (0,5 – yes; 0 – no) | FR, item 13.1/2 |
| | Minority shareholder representation | Proportion of Fiscal committee members nominated by minority shareholders | FR, itens 12.6/8 |
| Independent audit process | Independence of audit firm | Audit firm for less than five years (0,5 – yes; 0 – no) | FR, itens 2.1/2 |
| | | Audit firm auditor exclusive for audit services (0,5 – yes; 0 – no) | FR, itens 2.1/2 |

| | | | |
|---|---|---|---|
| | Independent audit firm reputation | Independent auditor firm is one of the *big four* (1 – yes; 0 – no) | FR, itens 2.1/2 |
| Guidance for conflicts of interest | Managing conflicts of interest | The firm has formal ways that allow identification and solution of conflicts of interests (1 – yes; 0 – no) | FR, itens 12.2/4 |
| | Mediation and arbitration | Firm has arbitration clause to the resolution of conflicts among shareholders and other claimants (1 – yes; 0 – no) | FR, item 12.5 |
| | Transparency | Firm has "Code of conduct" (0,33 – yes; 0 – no) | CVM Web site |
| | | Firm has "share trading policy" (0,33 – yes; 0 – no) | CVM Web site |
| | | Firm has "risk management policy" (0,33 – yes; 0 – no) | FR, item 5.2 |