Board of directors and code of business ethics of Brazilian companies

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Abstract

Purpose – The purpose of this paper is to verify the relations of the board of directors with the code of business ethics (CBE) of Brazilian publicly traded companies.

Design/methodology/approach – As for the methodology, data were collected from companies that traded shares in Brasil, Bolsa e Balcão (B3) through the Comdinheiro database and codes of ethics or business conduct. For this, in relation to the dependent variable, indexes were elaborated to represent the CBE (CBEI). To represent the independent variables of the board of directors, the following variables were selected: size of board, gender of the president, independence, chairman/CEO, age and number of meetings.

Findings – With that said, the results show that the size of the board, the independence and the number of meetings explain the informative content of the CBE. Also, the accumulation of positions of president and CEO negatively influences CBEI, so the research suggests that non-accumulation of positions reduces agency conflicts, generating transparency of CBEI, according to Agency Theory.

Research limitations/implications – Considering the analysis of this research, it is important to highlight that the results should not be generalized because of the limitation of the sample period and because it was only for the Brazilian companies. However, they cannot be invalidated, given that, because of the robustness of the econometric models, it was possible to make inferences about the relations of the board of directors and the CBE of companies that trade in Brasil, Bolsa e Balcão (B3).

Practical implications – The relations identified in this study between the board of directors and the CBE imply the involvement of top executives, so that the CBE be closer to the characteristics of the business, while the values must be transmitted with clear language, avoiding misunderstandings and conflicts that may be used by individuals in bad faith, with the purpose of apologizing for illegal acts of company.

Social implications – The board's characteristics seek to support corporate responsibilities, fulfilling a diversity of issues in the operational scenario, including influencing the information content of the CBE. Besides being an expression of the organizational culture, because it evidences the rules of behavior and values of the company.

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Originality/value – The business ethics, which in this research is represented by the CBE, is a factor in which there is evidence in international studies that there are relations with the board of directors. In this context, the present study seeks to verify the relationship between the board of directors and the CBE of Brazilian publicly traded companies.

Keywords CEO, Corporate governance, Board of directors, Business conduct, Code of business ethics

Paper type Research paper

1. Introduction

In the face of Agency Theory, in which agency problems arise from the separation of ownership and control, conflicting risk preferences and distinct motivations between the principal and the agent, corporate governance arises to minimize conflicts of interest, especially by the role of the board of directors, senior executives and directors of companies to improve corporate values, with responsible attitudes and appropriate standards of conduct (Jensen & Meckling, 1976).

In this regard, because of the financial crisis in the corporate world, in the twenty first century, ethical concerns, as the codes of business ethics (CBE) are essential tools for designing and institutionalizing the ethical behavior scheme worldwide, have become more constant, with legal implications as well as its relations with the issues related to the board of directors (Cressey & Moore, 1983; Sánchez, Dominguez, & Aceituno, 2014; Stevens, 2008).

As mentioned earlier, the CBE is being increasingly accepted as part of corporate governance, which consists of the participation of managers and employees in its execution, especially with regard to the board of directors, which in turn has a relevant role to reach an ethical environment (Singh, 2011; Sánchez et al., 2014). That is, the CBE should promote ethical behavior in the company, and not only exist in paper, because for reliability, this document should present issues linked to organization and social responsibility (Bonn & Fisher, 2005).

Thus, it can be affirmed that the board of directors and business ethics have shared characteristics, being interrelated and imposed on the companies by the shareholders, and by the stakeholders. However, corporate governance recommends that managers make their companies more transparent and with social responsibility, being such attributions constant to business ethics. Just as when a company adopts corporate governance principles, it also meets the expectations of its stakeholders (Tayşir & Pazarcik, 2013).

In a survey carried out in European countries and companies located in Canada, totaling 760 companies, Sánchez et al. (2014) analyzed the impact of the composition of the board of directors at the scope level of the CBE. In this way, it was identified that board independence and a size of up to 15 members positively influence the scope of the code of ethics, in which public companies are the ones with the highest ethical commitment, justifying visibility and access to resources for the elaboration and implementation of the code.

For Bonn and Fisher (2005), a company, for example, may have operations where there is intense public concern about the use of child labor or the abuse of human rights, yet another enterprise may have to combat pollution in the manufacturing process. Thus, the board of directors should encourage dialogue with the principal stakeholders of the company, such as shareholders, employees, managers, customers, suppliers, analysts, institutional investors, as well as community organizations, to appreciate the business ethics.

The business ethics, which in this research is represented by the CBE, is a factor in which there is evidence in international studies that there are relations with the board of directors

(Bonn & Fisher, 2005; Sánchez et al., 2014). In this context, the present study seeks to verify the relationship between the board of directors and the CBE of Brazilian publicly traded companies (Casson, 2013; Cressey & Moore, 1983; Davidson & Stevens, 2013; Stevens, 2008).

2. Review of literature

2.1 Board of directors

The board of directors is one of the internal corporate governance mechanisms designed to ensure that the interests of shareholders and managers are closely aligned. The most important governance issues currently facing publicly traded companies are those related to size of the board, diversity (gender of the chairman of the board), independence of the board, chairman/CEO, age and number of board meetings (Gaur, Bathula, & Singh, 2015; Liu, Wang, & Wu, 2014; Rao & Tilt, 2015).

The size of the board of directors is a relevant feature for supporting management in decision-making. However, previous studies involving this variable show that the results are not indisputable, because a council with a large number of advisors can cause communication problems, and thus provoke internal conflicts (Ujunwa, 2012). On the other hand, when dealing with publicly traded companies, negotiations are more complex, requiring advice from a larger board, especially with external directors who have greater market experiences (Akpan & Amran, 2014; Coles, Daniel, & Naveen, 2008; Gaur et al., 2015). Given this, positive relations of the size of the board of directors were expected in relation to the CBE.

There are more and more studies dealing with equal opportunities for employees and managers in the business environment (Darmadi, 2011). As an example, Kim and Starks (2016) emphasize that gender diversity in the board of directors can improve the company's value by offering specific expertise often lost in corporate boards. While Carrasco et al. (2012) point out that the longing to include women in high-level positions is still a global problem. To this end, according to the authors, some countries, such as Norway and Sweden, have already begun to adopt legislative or voluntary measures to promote female representation in the business environment.

Despite this, even if there is research that indicates the relevance of women in the council (Carter, Simkins, & Simpson, 2003), a negative relationship can also be identified between the female gender and the board of directors (Akpan & Amran, 2014; Darmadi, 2011; Ujunwa, 2012). Such a negative relation is justified by the fact that even though some women already act as leaders of large companies, it seems that the higher the post (board of directors), the more difficult is the presence of women (Carli & Eagly, 2001). Carrasco et al. (2012) indicate that the low proportion of women observed on boards varies between countries. In Brazil, for example, KPMG (2018) has shown that among Brazilian companies listed on the new market, only 6 per cent of council members are female.

The independence of the board of directors is another particularity of corporate governance, which can ensure a better control over the company. The Agency Theory postulates that an adequate proportion of independent directors in organizations can make the council free from the influence of the administration (Jensen & Meckling, 1976), which strengthens the council's independence by improving the dissemination of information to all internal and external stakeholders (Arunruangsirilert & Chonglerttham, 2017; Gaur et al., 2015).

DeBoskey, Luo, and Wang (2018), for example, found that the presence of a committee that establishes and reviews key disclosure activities and policies, composed entirely of external directors, significantly increases the transparency of corporate policy disclosure and improves the transparency of company. These results are consistent with Agency

Theory and further support specialized governance mechanisms, with fully independent committees for more transparent disclosure. As well, they confirm the findings of Haro-de-Rosario et al. (2017) that by analyzing the ethical values fostered in the codes of ethics of Latin American companies and identifying the influence of the composition of the board of directors, found that independent directors significantly and positively affect the content of codes of ethics.

Duru, Iyengar, and Zampelli (2016), when analyzing the relationship between performance and corporate governance characteristics of US companies, identified a positive effect of the council's independence. As well, the duality of the professional who performs the role of CEO and the chairman of the board had a negative and statistically significant impact on the performance of the companies analyzed, a result consistent with the Agency Theory (Jensen & Meckling, 1976). In other words, the non-duality of the role of CEO and chairman of the board reduces conflicts of interest (Gaur et al., 2015; Singh, 2015).

Regarding the age of the counselors, Darmadi (2011) found that younger professionals in the council presented a positive and significant relationship with financial performance. This result is justified by the fact that younger advisors are less risk-averse, which emphasizes greater risk diversification in the conduct of business (Hambrick & Mason, 1984). As a result, negative relationships were expected between the age of the directors and the CBE.

Also, in reviewing the minutes of board meetings of Israeli publicly held companies, Schwartz-Ziv and Weisbach (2013) noted the importance of the discussions at council meetings, as administrative roles indicated that the boards had the right to request information and updates on the issues raised in the meetings, so that they can exercise their duties more efficiently. Having as a parameter the Schwartz-Ziv and Weisbach (2013) study, positive relations were expected between the number of meetings of the board of directors and the CBE.

2.2 Code of business ethics

Casson (2013) describes the following ethical aspects of corporate governance:

- board members should perform their duties in a manner that reflects ethical values;
- the board of directors should avoid conflicts of interest;
- the board needs to define the purpose for the business, such as its strategic decisions that reflect the core values of the business;
- on the values should be implemented patterns of behavior that are expected for the business practice, the way that business is conducted and its role in society; and
- in the procedures for supervision and control, there must be mechanisms of delegation and control conducive to ethical business practice.

The CBE should convey the values and ethical principles of the organization (responsibility, respect, transparency, integrity and equality), in addition to professional factors (team, innovation/creativity and confidentiality), highlighting the conduct that aims employee with the objective of avoiding cases of corporate fraud (Bonn & Fisher, 2005; Sánchez et al., 2014; Singh, 2011).

In both the USA and Europe, since the 1980s and 1990s, open-market companies have been adopting the CBE, also known as the code of conduct, business principles or business ethics declarations. This is because the concerns about unethical positions that may reduce corporate profits and social responsibility are present, as conflicts of interest, employee conduct, environment, quality and safety of products and services are aspects of the ethical companies (Cressey & Moore, 1983; Stevens, 2008).

There are five steps to help managers use the code of ethics as an organizational document, they are as follows: to participate in a collaborative process to create the code; to discuss each topic in the code; to use the code to solve ethical problems, and it should be part of corporate strategy meetings; to communicate ethical decisions to all members of the organization explaining how the code was used for decision; and to reward people who behave consistently with the code (Hwang & Chung, 2016; Stevens, 2008).

The code of ethics must be assimilated to organizational culture. For, when there are separate entities from the crop or are communicated inefficiently, such a code may no longer function as a strategic document (Stevens & Buechler, 2013). For example, Enron's ethical flaw in which there was a code of ethics; however, the board of directors had authority to suspend the code, which was done more than once to act against it (Stevens & Buechler, 2013).

It is noted in Stevens and Buechler's (2013) studies of Lehman Brothers that the code of ethics was generic, lacking guiding concepts that could help in a crisis, prohibited behaviors that violate the law, as privileged information, but did not function as a strategic document. However, it cannot be said that a different code could have saved Lehman Brothers from collapse because of the large number of complex factors that were at play during the 2008 financial crisis, but the importance of the document is not ruled out.

In Brazil, Azevedo et al. (2014) investigated the degree of adherence to the recommendations of the Brazilian Institute of Corporate Governance (BICG) by the companies listed in Brasil, Bolsa e Balcão (B3) to elaborate the code of ethics/business conduct. From this perspective, we collected data available on the websites of 166 organizations, and found that the results by business sector partially confirmed the hypothesis that regulated sectors emphasize higher level of adherence to BICG's recommendations.

2.3 Previous studies

Corporate governance covers how companies are directed and controlled, in particular by the responsibilities of the board of directors, which in turn has assumed various responsibilities for the business. To this end, the CEO and the executive team delegate tasks to the company's management and to the employees in general. This authority allows management to perform, according to specified budgets and schedules, the purpose, vision and strategy that the board has ordered (Casson, 2013).

As already emphasized, because of corporate scandals, several rules have now focused on the role played by the boards of directors in the planning and monitoring of corporate codes of ethics. In theory, councils are in a more favorable position to protect and promote the interests of all stakeholders because of their experience and their sense of moral and legal obligations. In light of this situation, the presence of independent directors is necessary to reduce conflicts of interest (Dominguez et al., 2009; Erwin, 2011).

Still, the accounting governance literature provides little empirical or theoretical support for the emphasis on the CBE (Davidson & Stevens, 2013; Erwin, 2011). This gap is studied by Davidson and Stevens (2013) who in turn have suggested that a code of ethics improves manager behavior and investor confidence, as it activates social norms that control opportunistic behavior. Thus, in the board of directors, the CEO, the chairman of the board and all managers have their role to demonstrate their support for the code, particularly with regard to the behavior toward the company (Dominguez et al., 2009).

The reason for adopting codes of ethics is to help promote a reputation by avoiding irregularities through honest and ethical behavior; avoiding conflicts of interest in personal and professional relationships; improving compliance with applicable government laws, rules and regulations; as well as to promote social responsibility (Casson, 2013; Dominguez et al., 2009). As an example, in their study in South Africa, Mpinganjira, Roberts-Lombard, Wood, and Svensson (2016) stressed the need for open-market companies to evolve into a culture that supports corporate governance and business ethics with the goal of providing a credible, safe and unethical face in the workplace.

In this context, assuming that corporate governance emphasizes the importance of ethics, through the application of the business ethics codes and its orientation function to employees and managers, the research assumes that there is a relationship between corporate governance and the CBE (Cressey & Moore, 1983; Tayşir & Pazarcik, 2013; Zardkoohi, Harrison, & Josefy, 2015). As well, because corporate governance encompasses several aspects, there are international (Sánchez et al., 2014) and national studies (Azevedo et al., 2014) that seek to evaluate the quality of governance.

3. Methodology

The population is composed of all the publicly traded companies that traded their shares in Brasil, Bolsa e Balcão (B3). Regarding the sample, for the analysis of the relationship between the board of directors and the CBE, the study period was the year 2016 (year of data collection), this is because the code of ethics or business conduct is not an annual disclosure document. In this way, the CBEs made available on the companies' websites were selected. That is, the technique used is cross-sectional analysis. In addition, the data of the board of directors and control variables were collected through the database Comdinheiro, for the aforementioned year.

Moreover, the sample is presented in an unbalanced way, because there are companies with no data "missing" or missing data explanatory and control variables, even though there were excluded companies with too much lack of information in the search period, not to bias the results of the study. With this, a total of 311 companies were obtained as final sample, as emphasized in Table I.

3.1 Dependent variables

The scope of the code of ethics or business conduct focuses on regulating the conduct of employees and managers, as well as relationships within and outside the company (Singh, 2011). To represent the CBE, an index was established for each sample company based on Sánchez et al. (2014), and the information was collected through the CBE and using as criteria the terms/key words presented in Table II. With this, the variables are dummys, because for each indicator identified in the CBE, a value of 1 or 0 was assigned, as highlighted in Table II.

3.2 Independent variables

Through Comdinheiro, the data referring to the board of directors and control variables were collected, as explained in Table III:

The control variable to analyze the relations between the board of directors and the CBE is leverage, which is intended to measure the composition of passive sources of company resources and the log of market value to represent the size of the company. Because corporate size has an effect on the social legitimacy process and the level of

Criteria	No. of companies	(%)
Panel A		
Companies listed in Brasil, Bolsa e Balcão (B3)	445	100.00
Inactive companies in 2016 or with excessive absence of information in the study period	134	30.11
Final sample	311	69.89
Panel B		
Sectors of activity defined by Comdinheiro		
Industrial goods	50	16.10
Construction and transportation	1	0.30
Cyclic consumption	74	23.80
Non-cyclical consumption	23	7.40
Financial and others	60	19.30
Basic materials	28	9.00
Oil, gas and biofuels	7	2.30
Cheers	11	3.50
Information technology	6	1.90
Telecommunications	6	1.90
Public utility	45	14.50
Final sample	311	100

Source: Research data

Table I. Sample of selected companies for analysis of CBE and corporate governance

leverage is a factor linked to the implementation of the CBE, especially as a mechanism for preventing and responding to agency conflicts that may occur in the company (Dominguez et al., 2009; Sánchez et al., 2014).

Of note is the performance of controls by segments of corporate governance, while the listing segments were implemented with the objective of providing a business environment that adds value to companies, with better levels of transparency, that is, positive relationships are expected and significant for the variables of Level 1, Level 2 and new market. In contrast, a negative relation is expected when controlled by the traditional variable (Lima et al., 2015).

3.3 Statistical procedure

In addition to analyzing Spearman's correlation with the CBEI and the explanatory variables (board of directors), based on Tsalavoutas, Evans, and Smith (2010), the CBE index represents the sum of the information evidenced by the company divided by the total information that should have been evidenced, as presented in equation (1):

$$\mathrm{CBEI} = \sum_{i=1}^{n} xi \Big/ \sum_{j=1}^{m} xj \qquad (1)$$

where

CBEI = CBE index;

xi = total items evidenced by the company (attribution of value "1"); and

xj = total items that should have been evidenced by the company.

Items	Definitions	Terms/key words
1	Principles and core values for the company, emphasizing integrity, legality and respect	Integrity, legality or respect
2	In external relations ethical concerns focus on relationships with customers, suppliers and competitors	Customers, suppliers and competitors
3	Treatment and confidentiality of information with special attention to the client, employee and competitor	Confidentiality
4	Treatment and confidentiality of information with particular attention to the use of privileged information	Privileged information
5	Employee commitments on their company behavior involving conflicts of interest	Conflicts of interest
6	Prevention of corruption, fraud and bribery	Corruption, bribery, frauds
7	Internal commitments to employees regarding their company behavior involving the use of company assets	Company assets
8	Environmental commitment, that is, being aware of the importance of preserving the environment and minimizing the impact of the company's activities	Environment or sustainability
9	Work environment, with emphasis on health and safety in the workplace	Working environment; health; safety
10	Emphasis on equal opportunities and non-discrimination or harassment based on race, sex or religion	Discrimination; discriminatory; race, sex or religion
11	Social commitment between the basic principles that should guide business activity and the contribution to sustainable development	Social responsibility
12	Creating a consultative framework is one of the key ways to increase the participation of members of an organization in achieving the objectives of the code	Inquiries
13	Creating a framework for reporting code violations is one of the main ways to increase the participation of an organization's members in achieving the objectives of the code	Reporting channels

Source: Adapted from Sánchez et al. (2014)

Table II. Check list referring to the code of business ethics

3.4 Estimation of the econometric model

The technique used to verify the relations between the board of directors and the CBEI is cross-sectional analysis, because the analysis will be carried out only for the year 2016. For this, we chose the ordinary least square (OLS) model and tested the following basic assumptions of the regression analysis: degree of multicollinearity (VIF test), heteroscedasticity (Breusch–Pagan test and White test) and normality (Jaque–Bera test). To test the robustness of the results of the research, auxiliary regression models are also used. In this way, in equation (2), the model used for the estimation is presented.

$$\text{CBEI} = \alpha + \beta_1\text{SB} + \beta_2\text{GEN} + \beta_3\text{IND} - \beta_4\text{CHA} - \beta_5\ \text{AGE} + \beta_6\text{MEE} - \beta_7\text{TRAD} + \beta_8\ \text{L1} + \beta_9\ \text{L2} + \beta_{10}\ \text{NM} + \beta_{11}\ \text{LEV} + \beta_{12}\ \text{LogMV} + \varepsilon \quad (2)$$

where

CBEI = CBE index;
SB = size of the board;
GEN = gender of the president;

Dimensions	Indicators	Acronyms	Definition	Expected relationship	References
Board of directors	Size of the board	SB	Total number of council members	(+)	Gaur, Bathula, and Singh (2015)
	Gender president	GEN	Value 1 is assigned if male, and 0 otherwise	(+)	Akpan and Amran (2014)
	Independence	IND	The relationship between the number of independent members and the size of the council	(+)	DeBoskey (2018)
	Chairman/CEO	CHA	Assigned value 1 when chairperson is CEO, and 0 otherwise	(−)	Gaur et al. (2015)
	Age	AGE	Annual average age of the directors of the administration	(−)	Darmadi (2011)
	Meetings	MEE	Total number of council meetings in the year	(+)	Schwartz-Ziv and Weisbach (2013)
Control variables	Leverage	LEV	Relation between total liabilities (current and non-current liabilities) by total assets	(+)	Sánchez et al. (2014)
	Log market value	LogMV	Natural logarithm of market value	(+)	Sánchez et al., 2014
	Segments	TRAD	Assign value 1 if traditional, and 0 otherwise	(−)	Azevedo et al. (2014)
		L1	Value 1 is assigned if Level 1, and 0 otherwise	(+)	Azevedo et al. (2014)
		L2	Value 1 is assigned if Level 2, and 0 otherwise	(+)	Azevedo et al. (2014)
		NM	Value 1 is attributed to new market, and 0 otherwise	(+)	Azevedo et al. (2014)

Source: Own elaboration (2017)

Table III. Indicators referring to the board of directors and control variables

IND = represents independence;
CHA = represents the chairman/CEO;
AGE = is age; MEE is meetings;
TRAD = is traditional;
L1 = is Level 1;
L2 = is Level 2;
NM = is new market;
LEV = is leverage; and
LogMV = is log market value.

4. Analysis of results

4.1 Descriptive analysis of results

In Table IV, referring to CBEI and board of directors' data, the period of analysis was 2016. The mean, median and standard deviation of the total sample that compose the study are emphasized, as well as the means of the indicators per segment of corporate governance. Thus, of the total sample, there is an average of 61.81 per cent (CBEI) of information that made up the check list for CBE. Also, as governance levels rise, the CBEI also increases. For example, the traditional segment presents an average index of 38.81 per cent, and in the highest level of governance, the new market evidenced an average of 79.51 per cent of the same index. It is observed that according to the governance criteria of Brasil, Bolsa e Balcão (B3), only Level 1, Level 2 and new market companies are allocated the disclosure of information in CBE, which may have caused the low CBEI in traditional companies.

Given that six indicators related to the board were selected for the analysis of the relations between the board of directors and the CBE, it is pointed out that the results identified indicate that:

- each segment has more than five members in the board (Coles et al., 2008);
- more than 90% of the chairmen of the council are male (Darmadi, 2011);
- only Level 2 and the new market have more than 20% independent members (Rao & Tilt, 2015);
- in the chairman/CEO variable, the traditional level has an average of 26.31%, and in the remaining segments, it reaches a maximum of 5.26% (Gaur et al., 2015);
- the average age of counselors is around 50 years (Darmadi, 2011); and
- Level 1, Level 2 and new market present more than ten meetings, whereas in the traditional segment, the average revolves around five meetings (Schwartz-Ziv and Weisbach, 2013).

Regarding the control variables of Table IV, the log market value had the highest average (20.7041) because it is related to large companies, whereas in the companies listed in Level 1 (22.3164), Level 2 (21.3183) and new market (21.1602), we found higher averages when compared them to the traditional level (19.4898). As for the total sample, leverage is on average 80.87 per cent, and by listing segment, the average is more than 62 per cent for each level of corporate governance.

Table V emphasizes the descriptive statistics of the CBEI of the total sample by sectors of activity. In this way, it can be seen that the oil, gas and biofuels sector presented the highest average, with a percentage of 95.60 per cent of CBEI. Even though it presents only seven observations, it is worth mentioning that out of these, six refer to new market companies. They are the following companies with their respective CBEI: Cosan S/A (92 per cent); Lupatech S/A (92 per cent); OES Brazil (100 per cent); Petrorio S/A (100 per cent); QGEP Participações S/A (100 per cent); and Ultrapar (85 per cent). Petrobras is from the traditional segment and it presented a 100 per cent CBEI.

Table IV. Descriptive statistics of CBEI, board of directors and control variables (2016)

	General sample			Segments of corporate governance (Medium)			
Indicators	Average	Medium	SD	Traditional	Level 1	Level 2	New market
CBEI	0.6181	0.7692	0.3603	0.3881	0.7720	0.7814	0.7951
Size of board	6.6234	6.0000	2.6978	5.3257	8.8214	8.4736	7.2015
Gender president	0.9673	1.0000	0.1781	0.9717	0.9200	1.0000	0.9696
Independence	0.2158	0.1818	0.2227	0.0577	0.1452	0.2974	0.3808
Chairman/CEO	0.1158	0.0000	0.3204	0.2631	0.0000	0.0526	0.0000
Age	47.2224	53.8000	21.7764	50.8413	46.3445	51.4125	43.1557
Meetings	9.1392	8.0000	7.5298	5.9548	13.5000	13.2777	10.8846
Leverage	0.8087	0.6174	1.1824	1.0303	0.6210	0.7528	0.6429
Log market value	20.7041	20.8500	2.3182	19.4898	22.3164	21.3183	21.1602

Source: Research data

Sectors	Obs.	Average	Medium	SD	Minimum	Maximum
Industrial goods	50	0.5846	0.7692	0.3749	0.0000	1.0000
Construction and transportation	1	0.7692	0.7692	–	0.7692	0.7692
Cyclic consumption	74	0.5426	0.6923	0.3672	0.0000	1.0000
Non-cyclical consumption	23	0.6087	0.6923	0.3652	0.0000	1.0000
Financial and others	60	0.5115	0.6923	0.3896	0.0000	1.0000
Basic materials	28	0.6593	0.8462	0.3851	0.0000	1.0000
Oil, gas and biofuels	7	0.9560	1.0000	0.0605	0.8462	1.0000
Cheers	11	0.7902	0.7692	0.1503	0.5385	1.0000
Information technology	6	0.8205	0.8462	0.1513	0.6154	1.0000
Telecommunications	6	0.5641	0.5769	0.3564	0.0000	0.9231
Public utility	45	0.7829	0.8462	0.2516	0.0000	1.0000

Notes: Obs. means observations; the construction and transportation sector did not present a standard deviation because it contained only one observation
Source: Research data

Table V. Descriptive statistics of the CBEI by sectors of activity defined by Comdinheiro (2016)

In addition, by representativeness in terms of numbers of observations, the cyclical consumption sector (with 74 observations) presented an average of 54.26 per cent of the CBEI. This percentage was not high when compared, for example, with the oil, gas and biofuels sector, because of the high number of companies listed in the traditional segment with a mean of 0.00 per cent of CBEI. Considering that, of the 74 observations, 30 companies belong to the traditional level, of which 20 are companies that have an average of 0.00 per cent of the CBEI, that is, they did not show a CBE on their websites.

Table VI evidences Spearman's correlation with CBEI and explanatory variables (board of directors). From this, it is possible to verify that there is a positive correlation at the level of significance of 1 per cent between CBEI and size, independence and number of meetings of the board of directors. This result confirms researches such as Arunruangsirilert and Chonglerttham (2017). Still, there is a negative correlation, significant at 1 per cent, between CBEI and the chairman/CEO, in which the Agency Theory is confirmed, i.e. that the accumulation of the board chairman and CEO can negatively impact the disclosure of information, in this case, the CBEI (Qin, 2012; Singh, 2015).

When analyzing the correlation between the variables representing the board of directors, we observe that the size of the board correlates with independence and number of

Indicators	CBEI	Size of board	Gender president	Independence	Chairman/ CEO	Age	Meetings
CBEI	1.0000						
Size of board	0.4310***	1.0000					
Gender president	0.0101	0.0460	1.0000				
Independence	0.4088***	0.3927***	0.0248	1.0000			
Chairman/CEO	−0.4090***	−0.3816***	0.0744	−0.3529***	1.0000		
Age	−0.0897	−0.0385	0.0814	−0.042	0.0203	1.0000	
Meetings	0.3375***	0.3691***	−0.0082	0.2769***	−0.2522***	−0.1227**	1.0000

Notes: ***Statistically significant at 1%; **statistically significant at 5%
Source: Research data

Table VI. Spearman correlation referring to CBEI and board of directors meetings in a positive way. As well, a more independent council presents itself positively correlated to the greater number of meetings. On the other hand, the chairman/CEO negatively correlates to the CBEI, the size of the board, the independence and the number of meetings. This result means that in all aspects analyzed, the non-accumulation of positions of chairman of the board and CEO can reduce agency conflicts in the business environment (Gaur et al., 2015; Qin, 2012; Singh, 2015).

Moreover, the annual average age of the management board proved to be correlated with a negative sign with the number of meetings at the level of significance of 5 per cent. Furthermore, the annual average age of the management board proved to be negatively correlated with the number of meetings at the level of significance of 5 per cent. This result is justified by the previous research developed by Darmadi (2011), in which younger advisors influenced financial performance, because discussions at board meetings can indicate efficiency in the board's decision-making, and consequently in performance (Schwartz-Ziv & Weisbach, 2013).

4.2 Econometric analysis

Table VII emphasizes the cross-sectional regressions of the CBEI in relation to the board of directors in the year 2016. Six OLS models were estimated, and for each model, the variance inflation factor (VIF) test was applied for each indicator, resulting in the existence of multicollinearity problems (VIF greater than 5) in the indicator referring to the traditional segment in Models 5 and 6; for this reason, the aforementioned indicator was excluded from the models described. In addition, by the Jaque–Bera, test we reject normality (p <0.05). In this case, the small sample is justified by the central limit theorem. By the tests of Breusch–Pagan and the test of White, it was detected heteroscedasticity in the six models, taking like decision the analysis by the robust OLS model.

Based on Sánchez et al. (2014), we analyzed the indicators of the board of directors dimension. For this, Model 1 with control of the traditional segment presented statistical significance in the size of the board, independence and chairman/CEO, whereas all the indicators can explain jointly 43.10 per cent of the CBEI. It is interesting to observe the negative relationship between the traditional segment and the CBEI because of the low index of companies that describe the information of Table I in their CBE or even the lack of evidence of a CBE in their websites. As an example, the CBEI is only 38.81 per cent (Table IV) for traditional companies, as well as the lack of a CBE in 20 companies in the cyclic consumption sector (analysis of Table V).

For Models 2 (Level 1 control) and 3 (Level 2 control), the sample presented statistical significance with the relationships already expected in the size of board, independence, chairman/CEO and meetings indicators, and the R^2 is 39.35 and 39.25 per cent, respectively, representing the explanation of all indicators of the models in relation to CBEI. However, the indicators Level 1 and Level 2, in both models, did not present statistical significance, and it is not possible to make an inference about their relations with CBEI.

In Model 4 (new market control), with R^2 of 40.59 per cent, statistical significance was found in the size of the board, independence, chairman/CEO and meetings. As well as, R^2 of 43.14 per cent in Model 5 (control by Level 1, Level 2 and new market), besides the statistical significance in the size of the board, corroborating with Coles et al. (2008) and chairman/CEO, confirms the ideas of Liu et al. (2014).

Based on these results, by the representativeness of the coefficients emphasized in Table VII, it is possible to observe a high relation between CBEI and council independence in the Models 1 and 4, when there is significance in the control by the traditional and new market segments, because the percentages are 21.21 and 28.11 per cent, respectively. This

Table VII. Robust OLS regressions (cross section): CBEI, board of directors and control variables (2016)

Indicators	Model [1] Traditional control	Model [2] Level 1 control	Model [3] Level 2 control	Model [4] New market control	Model [5] Control all segments	Model [6] Control all indicators
Size of board	0.0256*** (3.27)	0.0318*** (3.66)	0.0330*** (3.92)	0.0347*** (4.19)	0.0260*** (3.12)	0.0049 (0.47)
Gender president	0.0172 (0.21)	0.0123 (0.14)	0.0001 (0.00)	−0.0030 (−0.03)	0.0131 (0.15)	0.0363 (0.44)
Independence	0.2121* (1.90)	0.4501*** (4.20)	0.4255*** (4.13)	0.2811** (2.32)	0.1967 (1.63)	0.0380 (0.31)
Chairman/CEO	−0.2313*** (−3.28)	−0.2902*** (−4.34)	−0.2939*** (−4.39)	−0.2693*** (−3.93)	−0.2312*** (−3.26)	−0.2394*** (−2.99)
Age	−0.0004 (−0.53)	−0.0007 (−0.82)	−0.0007 (−0.87)	−0.0005 (−0.65)	−0.0004 (−0.53)	0.0001 (0.20)
Meetings	0.0027 (1.07)	0.0047* (1.71)	0.0050* (1.81)	0.0045* (1.66)	0.0028 (1.09)	0.0017 (0.78)
Traditional	−0.2131*** (−3.61)					
Level 1		0.0313 (0.93)			0.0968** (2.46)	0.0861** 2.06
Level 2			0.0195 (1.28)		0.0771*** (3.31)	0.0862*** (3.30)
New market				0.0291** (2.50)	0.0548*** (3.54)	0.0563*** (3.27)
Leverage						−0.0203* (−1.82)
Log market value						0.0388*** (3.52)
Constant	0.4995*** (4.73)	0.3171*** (2.98)	0.3296*** (2.97)	0.2985*** (2.69)	0.2890*** (2.86)	−0.3675* (−1.74)
Remarks	243	243	243	243	243	205
R^2	0.4310	0.3935	0.3925	0.4059	0.4314	0.4400
Significance	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
VIF (average)	1.39	1.19	1.15	1.32	1.47	1.83

Notes: Z statistics in parentheses. ***Statistically significant at 1%; **statistically significant at 5%; *statistically significant at 10%
Source: Research data

result corroborates with Arunruangsirilert and Chonglerttham (2017), noting the importance of an independent board to provide transparency on ethical and professional values of the company (Bonn & Fisher, 2005; Singh, 2011).

The chairman/CEO is the indicator that presented statistical significance and negative relations [as an example, in Model 3 (coefficient) = −29.39 per cent] in all models evidenced in Table VII. In effect, the occupation of the position of president of the council and CEO also has an impact on CBEI, but in a negative way. According to Agency Theory, this is because non-accumulation of positions reduces agency conflicts by generating credibility and social satisfaction with the transparency of the CBE for all stakeholders (Gaur et al., 2015; Hwang & Chung, 2016; Qin, 2012).

In addition, in Model 6, with R^2 of 44.00 per cent, in relation to the indicators on the board of directors, only the chairman/CEO presented statistical significance (coefficient = −23.94 per cent); as well, it is clear that all control indicators of Model 6 have statistical significance. However, only leverage has negative relationship with CBEI, which is reverse to the expected (Shyu, 2011). This result of the leverage has as possible justification for the downgrading of Brazil's rating by the rating agency Moody's, because downgrade of the rating has a consequence on large companies, with difficulties in acquiring financing (Souza, Freitas Filho, & Lanzer, 2017).

In addition to the results presented in the research, robustness tests were used, having as parameter of analysis the variable chairman/CEO. This is because, in all models presented in Table VII, this variable was significant in relation to the CBEI. That said, robustness tests show that the chairman/CEO influences the CBEI, even after removing the other variables from the board of directors. This result is consistent with key study results, corroborating research such as Gaur et al. (2015) and Singh (2015), as well as according to Agency Theory.

5. Conclusions

The purpose of the study was to verify the relations of the board of directors and the CBE of Brazilian public companies. From this, we observed that for the six council indicators, four presented statistical significance in some of the six models in Table VII. In other words, the size of the board; the independence of the board; separation of functions from the board chairman and the CEO position; and the largest number of meetings may impact the CBE (Sánchez et al., 2014). Validly, the information is composed of the following CBEI: integrity; legality; respect; customers; providers; competitors; confidentiality; privileged information; conflicts of interest; corruption; bribery; frauds; company assets; environment; workplace; health; safety; discrimination; social responsibility; queries; and channels of complaints.

In particular, ratifying the Agency Theory, the chairman/CEO showed negative relations in all the analyzed models, besides presenting representative coefficients. For example, in Model 6 of Table VII, the accumulation of the positions of chairman and CEO negatively influences CBEI (coefficient = −23.94 per cent), and thus negatively impacting the CBE, which represents management and particularities of business (Qin, 2012). In addition, the gender of the president and the age of the counselors did not explain the CBEI, because statistical significance was not identified, and could not make inferences of their relations with CBEI.

Thus, the board's characteristics seek to support corporate responsibilities, fulfilling a diversity of issues in the operational scenario, including influencing the information content of the CBE. Besides being an expression of the organizational culture, because it evidences the rules of behavior and values of the company (Sánchez et al., 2014). That is, the relations identified in this study between the board of directors and the CBE imply the involvement of top executives, so that the CBE be closer to the characteristics of the business, whereas the values must be transmitted with clear language, avoiding misunderstandings and conflicts that may be used by individuals in bad faith, with the purpose of apologizing for illegal acts of company.

Considering the analysis of this research, it is important to highlight that the results should not be generalized because of the limitation of the sample period and because it was only for the Brazilian companies. However, they cannot be invalidated, given that, because of the robustness of the econometric models, it was possible to make inferences about the relations of the board of directors and the CBE of companies that trade in Brasil, Bolsa e Balcão (B3). In this aspect, as a suggestion for future studies is the insertion of other governance indicators, to provide the capture of greater characteristics on the matter.

References

Akpan, E. O., & Amran, N. A. (2014). Board characteristics and company performance: Evidence from Nigeria. *Journal of Finance and Accounting*, *2*, 81–89. https://doi.org/https://doi.org/10.11648/j.jfa.20140203.17

Arunruangsirilert, T., & Chonglerttham, S. (2017). Effect of corporate governance characteristics on strategic management accounting in Thailand. *Asian Review of Accounting*, *25*, 85–105. doi: https://doi.org/10.1108/ARA-11-2015-0107

Azevedo, H., Luca, M. M. M., Holanda, A. P., Ponte, V. M. R., & Santos, S. M. (2014). Código de conduta: grau de adesão as recomendações do IBGC pelas empresas listadas na BM&fbovespa. *Revista de Administração e Contabilidade da Unisinos*, *11*. Retrieved form: www.spell.org.br/documentos/ver/28572/codigo-de-conduta–grau-de-adesao-as-recomendacoes-do-ibgc-pelas-empresas-listadas-na-bm-fbovespa/i/pt-br

Bonn, I., & Fisher, J. (2005). Corporate governance and business ethics: Insights from the strategic planning experience. *Corporate Governance: An International Review*, *13*, 730–738. doi: https://doi.org/10.1111/j.1467-8683.2005.00466.x

Carli, L., & Eagly, A. (2001). Gender, hierarchy and leadership: An introduction. *Journal of Social Issues*, *57*, 629–636. doi: https://doi.org/10.1111/0022-4537.00232

Carrasco, A., Francoeur, C., Réal, I., Laffarga, J., & Ruiz-Barbadillo, E. (2012). *Cul-tural differences and board gender diversity*, Grenoble, France: *Comptabilités et innovation*.

Carter, D. A., Simkins, B. J., & Simpson, W. G. (2003). Corporate governance, board diversity, and firm value. *The Financial Review*, *38*, 33–53. doi: https://doi.org/10.1111/1540-6288.00034

Casson, J. (2013). *A review of the ethical aspects of corporate governance regulation and guidance in the EU*. Institute of Business Ethics, Occasional Paper 8.

Coles, J. L., Daniel, N. D., & Naveen, L. (2008). Does. One size fit all? *Journal of Financial Economics*, *87*, 329–356. https://doi.org/https://doi.org/10.1016/j.jfineco.2006.08.008

Cressey, D., & Moore, C. A. (1983). Managerial values and corporate codes of ethics. *California Management Review*, *25*, 53–57. https://doi.org/https://doi.org/10.2307/41165032 [doi: https://doi.org/10.2307/41165032].

Darmadi, S. (2011). Board diversity and firm performance: The Indonesian evidence. *Corporate Ownership and Control Journal*, *9*, 524–539. doi: https://doi.org/10.22495/cocv8i2c4p4

Davidson, B. I., & Stevens, D. E. (2013). Can a code of ethics improve manager behavior and investor confidence? An experimental study. *The Accounting Review*, *88*, 51–74. doi: https://doi.org/10.2308/accr-50272

DeBoskey, D. G., Luo, Y., & Wang, J. J. (2018). Do specialized board committees impact the transparency of corporate political disclosure? Evidence from S&P 500 companies.

Research in Accounting Regulation, *30*, 8–19. https://doi.org/https://doi.org/10.1016/j.racreg.2018.03.002

Dominguez, L. R., Alvarez, I. G., & Sanchez, I. M. G. (2009). Corporate governance and codes of ethics. *Journal of Business Ethics*, *90*, 187–202. Retrievide from: www.Fep.Up.Pt/Conferencias/10seminariogrudis/Vieira,%20in%C3%Aas%20(Leiria)%20-%20paper_Corporate%20governance,%20ethics%20and%20social%20responsibility.Pdf

Duru, A., Iyengar, R. J., & Zampelli, E. M. (2016). The dynamic relationship between CEO duality and firm performance: The moderating role of board independence. *Journal of Business Research*, *69*, 4269–4277. doi: https://doi.org/10.1016/j.jbusres.2016.04.001

Erwin, P. M. (2011). Corporate codes of conduct: The effects of code content and quality on ethical performance. *Journal of Business Ethics*, 99, 535–548 doi: https://doi.org/10.1007/s10551-010-0667-y

Gaur, S. S., Bathula, H., & Singh, D. (2015). Ownership concentration, board characteristics and firm performance: A contingency framework. *Management Decision*, *53*, 911–931. doi: https://doi.org/10.1108/MD-08-2014-0519

Hambrick, D. C., & Mason, P. A. (1984). Upperechelons: The organizations as a reflection of its top managers. *The Academy of Management Review*, *9*, 193–206. doi: https://doi.org/10.2307/258434

Haro-De-Rosario, A., Gálvez-Rodríguez, M. D. M., Sáez-Martín, A., & Caba-Pérez, C. (2017). El rol del consejo de administración en la ética empresarial en países de latinoamérica. *Revista de Administração de Empresas*, *57*, 426–438. doi: https://doi.org/10.1590/s0034-759020170502

Hwang, J., & Chung, J. E. (2016). The roles of business ethics in conflict management in small retailer–supplier business relationships. *Journal of Small Business Management*, 1–21. doi: https://doi.org/10.1111/jsbm.12271

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*, 305–360. doi: https://doi.org/10.1016/0304-405X(76)90026-X

Kim, D., & Starks, L. T. (2016). Gender diversity on corporate boards: Do women contribute unique skills?. *American Economic Review*, *106*, 267–271. doi: https://doi.org/10.1257/aer.p20161032

Kpmg. (2018). *A governança corporativa e o mercado de capitais*. Retrieved from: https://assets.kpmg/content/dam/kpmg/br/pdf/2016/12/br-estudo-governanca-corporativa-2016-2017-11a-edicao-final.pdf

Liu, H., Wang, H., & Wu, L. J. (2014). Removing vacant chairs: Does independent directors' attendance at board meetings matter? *Journal of Business Ethics*, *133*, 375–393. doi: https://doi.org/10.1007/s10551-014-2402-6

Mpinganjira, M., Roberts-Lombard, M., Wood, G., & Svensson, G. (2016). Embedding the ethos of codes of ethics into corporate South Africa: Current status. *European Business Review*, *28*, 333–351. doi: https://doi.org/10.1108/EBR-04-2015-0039

Qin, B. (2012). The influence of firm and executive characteristics on performance-vested stock option grants. *International Business Review*, *21*, 906–928. doi: https://doi.org/10.1016/j.ibusrev.2011.10.004

Rao, K., & Tilt, C. (2015). Board composition and corporate social responsibility: The role of diversity, gender, strategy and decision making. *Journal of Business Ethics*, *138*, 327–347. doi: https://doi.org/10.1007/s10551-015-2613-5

Sánchez, I. M. G., Dominguez, L. R., & Aceituno, J. V. F. (2014). Board of directors and ethics codes in different corporate governance systems. *Journal of Business Ethics*, *131*, 681–698. doi: https://doi.org/10.1007/s10551-014-2300-y

Schwartz-Ziv, M., & Weisbach, M. S. (2013). What do boards really do? Evidence from minutes of board meetings. *Journal of Financial Economics*, *108*, 349–366. doi: https://doi.org/10.1016/j.jfineco.2012.04.011

Shyu, J. (2011). Family ownership and firm performance: Evidence from Taiwanese firms. *International Journal of Managerial Finance*, *7*, 397–411. https://doi.org/https://doi.org/10.1108/17439131111166393

Souza, L. A., Freitas Filho, F. L., & Lanzer, E. A. (2017). Rebaixamento do risco soberano brasil pelas agências de classificação de risco – Impactos na economia brasileira. *Espacios*, *38*, 14–21. Retrievid from: www.revistaespacios.com/a17v38n22/a17v38n21p14.pdf

Stevens, B., & Buechler, S. (2013). An analysis of the Lehman brothers code of ethics and the role it played in the firm. *Journal of Leadership, Accountability and Ethics*, *10*, 43–57.

Tayşir, E. A., & Pazarcik, Y. (2013). Business ethics, social responsibility and corporate governance: Does the strategic management field really care about these concepts? *Procedia – Social and Behavioral Sciences*, *99*, 294–303. doi: https://doi.org/10.1016/j.sbspro.2013.10.497

Tsalavoutas, I., Evans, L., & Smith, M. (2010). Comparison of two methods for measuring compliance with IFRS mandatory disclosure requirements. *Journal of Applied Accounting Research*, *11*, 213-228. doi: https://doi.org/10.1108/09675421011088143

Ujunwa, A. (2012). Board characteristics and the financial performance of Nigerian quoted firms. *Corporate Governance: The International Journal of Business in Society*, *12*, 656–674. https://doi.org/https://doi.org/10.1108/14720701211275587

Zardkoohi, A., Harrison, J. S., & Josefy, M. A. (2015). Conflict and confluence: The multidimensionality of opportunism in principal–agent relationships. *Journal of Business Ethics*, *146*, 405–417. doi: https://doi.org/10.1007/s10551-015-2887-7

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