

CORPORATE SOCIAL AND SUSTAINABILITY PERFORMANCE AND OWNERSHIP CONCENTRATION - AN ANALYSIS OF BRAZILIAN FIRMS

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ABSTRACT

This paper examines whether ownership concentration drives the level of Corporate Social and Sustainability Performance (CSSP) in Brazil, as proxied by firm membership to the ISE index. Using a stakeholder framework, we find that CSSP of Brazilian firm is inversely correlated to ownership concentration indicating that controlling voting shareholders may not see CSSP as a priority. Since the ISE index has a high proportion of corporate governance aspects, this result may be a signal that dominant shareholders avoid the advance in the adoption of good corporate governance practices which is closely linked to firm sustainability. Besides, the results indicate that leading CSSP firms are significantly larger, and face more growth opportunities.

Keywords: Corporate social responsibility; sustainability; ownership concentration; determinants; ISE.

English-track: (Accounting for external users / comparative social reporting)

1 INTRODUCTION

The increasing social and environmental demands have pressured companies to worry about their operation and sustainability, being compromised with a broader range of stakeholders than the ones articulated under the Agency Theory - shareholders, CEO and creditors - (JENSEN; MECKLING, 1976). The literature has highlighted that the demands of this broader spectrum of stakeholders motivate companies to worry about adopting a sustainable approach, encompassing harmoniously, economic, social, and environmental concerns (LÓPEZ; GARCIA; RODRIGUES, 2007).

Corporate social responsibility actions, and sustainability issues, are often referred as able to improve firm reputation, image and visibility (LOURENÇO; SCHRODER, 2003; FREEMAN; WICKS; PARMAR, 2004). However, there are no conclusive results regarding this value creating ability (MARGOLIS; WALSH, 2001; 2003; ORLITZKY; SCHMIDT; RYNES, 2003).

Assessing the degree of attention a company directs to Corporate Social and Sustainability concerns is a complex task on which there is still no agreement on the market or academic fields. The diversity of measures used in this context shows how the topic is still controversial (GRIFFIN; MAHON, 1997; MARGOLIS; WALSH, 2003; ORLITZKY; SCHMIDT *et al.*, 2003). In fact, despite being related, Corporate Sustainability concerns and Corporate Social Responsibility (CSR) are distinct. While actions related to sustainability are associated with ethical, environmental and economic criteria in the firm decision making process, in order to ensure business continuity, CSR is related to the willingness of the company to undertake actions that benefit stakeholders (VAN MARREWIJK; WERRE, 2003; CALDELLI; PARMIGIANI, 2004).

Nowadays it has been common the assessment of Corporate Social and Sustainability Performance (CSSP) by specialized institutions that have created indexes of CSSP that intend to be able to convey information about the level of firms' CSSP. Many of these indexes have a strong view on the issue of sustainability of the company (STATMAN, 2006). This is due to the fact that indexes are created to meet the investors' demands. Examples of such market indexes are the Dow Jones Sustainability Index (DJSI) of the New York Stock Exchange, the FTSE-4Good, in the London Stock Exchange, and the Johannesburg index in South Africa. In this context, in Brazil, the Corporate Sustainability Index (ISE) was created. The ISE considers firms' actions associated to social and sustainable development (REZENDE; NUNES; PORTELA, 2008; MARCONDES; BACARJI, 2010; BM&FBOVESPA, 2012).

An important stream of research has sought to find the motivating factors for the development of Corporate social and sustainability actions (LERNER; FRYXELL, 1988; CHIH; CHIH; CHEN, 2010; ANDRADE *et al.*, 2013).

This work aims to study effect of ownership concentration on CSSP of Brazilian firm. We used a sample of listed Brazilian firms in the period 2006-2011, using as proxy for the higher CSSP the annual pertinence to the ISE index, and controlling for relevant control factors highlighted in the literature.

Our results indicate that CSSP of Brazilian firm is adversely affected by ownership concentration signaling that controller shareholders do not seem to have CSSP as a priority. At the same time, CSSP is positively influenced by growth opportunities and firm size.

The remainder of the paper is organized as follows. Section 2 presents theoretical background and hypotheses. Sample and methodology are detailed in section 3. Results are analyzed in section 3 that is followed by the conclusions of the works.

2 CORPORATE SOCIAL RESPONSIBILITY, SUSTAINABILITY, AND HYPOTHESES

2.1 Corporate Social Responsibility and Sustainability

The Interest for social and environmental issues in the business environment affects different aspects of the company and its stakeholders. The issue of sustainability can take multiple forms, a fact that depends on specific firm circumstances and its values, constituting the so-called matrix of sustainability that can facilitate organizations to find the proper way to better integrate sustainability in their business (VAN MARREWIK; WERRE, 2003).

Although related, Corporate Social Responsibility (CSR) and Firm Sustainability are distinct concepts. Firm Sustainability is associated with the adoption of ethical criteria in the decision making process of the company, so that the process incorporates social, environmental and economic concerns based on ethical standards. In turn, CSR is the willingness of the company to take responsibility with a range of stakeholders who can benefit by social actions promoted by the company (VAN MARREWIK; WERRE, 2003; CALDELLI; PARMIGIANI, 2004).

CSR concepts proposed refer to the company's relationship with various stakeholders. They also allude to ethical business conduct firm commitment to sustainable development, which is linked to corporate sustainability concerns, which leads to an intersection between CSR and sustainability. Indeed, the development of CSR is linked to the attempt to meet the expectations of different stakeholders, which is quite complex (SHRIVASTAVA, 1995; MACHADO FILHO; ZYLBERSZTAJN, 2004; BITTENCOURT; CARRIERE, 2005; DAHLSTRUD, 2008). In turn, Corporate Sustainability concerns seem to be directly associated with the interests of shareholders, management, and creditors, since it is closely associated to firm continuity. However, the concept of sustainability transcend the aspect of business

continuity and takes connotations of higher magnitude when considering the planet's sustainability (LAMARCHE; RUBINSTEIN, 2012).

The "sustainable development" was originally defined by the Brundtland report, or "Our Common Future" published in 1987 by the World Commission on Environment and Development as the process of change in which the use of natural resources, the orientation of technological development, the investment guidance, and institutional changes should all be in harmony to ensure human survival in the long run. In this scenario, the philosophy of sustainability may, in a certain way, deviate a bit from neoclassical economic theory, to pursue development of corporate strategies that include all stakeholders' needs, as the firm success depends on the satisfaction of all of them (LÓPEZ; GARCIA *et al.*, 2007).

Along with the evolution of sustainable development concerns since the 1980s, three main concepts have been pointed out as the pillars of sustainability: social, economic and environmental (GARRIGA; MELÉ, 2004; DAHLERUD, 2008). Recent international economic instability has made the economic a more relevant pillar due to the worry on firm survival, and, questioning the sustainability of development based only on economic progress (MOLDAN; JANOUŠKOVÁ; HÁK, 2012). This situation has raised the importance of adequate indicators that are able to assess firms' social actions and sustainability concerns.

2.2 The ISE index (Firm Sustainability Index)

Corporate Social Responsibility and Sustainability Indexes were created in line with the growing concern about Socially Responsible Investments (SRI). These indicators are designed with the aim of transmitting the degree of firm social concerns that may be of interest to investors (SKILLIUS; WENBERG, 1998).

Concerns related to corporate sustainability are closely associated to the issue of management quality and the need to have in the market a transparent and secure business environment. In 2002, the Sarbanes-Oxley Act established stricter regulation in USA in order to improve the quality of business management and prevent fraud and financial disasters such as Enron and WorldCom cases. In this spirit of best management quality, several countries have adopted corporate governance rules, either through laws or advice of non-governmental institutions, according to the peculiarities of each market (DOIDGE; KAROLYI; STULZ, 2007; AGUILERA; JACKSON, 2010).

Corporate Social Responsibility and Corporate Sustainability have both been the object of research with specific concepts and measurement indexes proposed. Considering market indexes, (STATMAN, 2006) analyzes the diversity Social Responsibility indexes noting that they differ in components considered of social responsibility and in the emphasis they give to each element considered of social responsibility. Statman cites, for example, that while the Calvert index is very strong in aspects of corporate governance, the Domini 400 Social Index primarily emphasizes aspects related to environmental issues. Some indexes do not consider the possibility of inclusion of firms from sectors with negative social connotation. For example, Calvert and DS 400 Index exclude tobacco products and gambling services, while nuclear power companies are excluded from Citizens and DS 400 indexes. On the other hand, the Dow Jones Sustainability Index (DJSI) does not exclude firms from the possibility of composing the index because of its activity. Indeed, the DJSI incorporates the best companies from each economic sector. By including the "best" companies in each sector without regard to the sector of activity, the index is emphasizing the firm management issue at the expense of aspects typically related to social responsibility and prioritizing the management aspect.

Following international trend, in 2005, the Brazilian market has created an indicator for the purpose of conveying information about the degree of importance the company gives

to issues related to Corporate Social Responsibility and Corporate Sustainability, the Corporate Sustainability Index (ISE - *Índice de Sustentabilidade Empresarial*). The ISE evaluates firm actions related to both Corporate Social Responsibility (CSR) and Corporate Sustainability (CS). The ISE was established by BM&FBOVESPA, with the support of several institutions (Brazilian Institute of Corporate Governance - IBGC; GVces; Ethos; Abrapp; Apimec; Anbid; IBASE, MMA, and ISOS), being the fourth indicator of the kind in the world, and the first in Latin America (MARCONDES; BACARJI, 2010). By comprising both CSR and CS, the ISE becomes an index with high complexity compared to indicators of only one of these aspects. The ISE is proposed to be an index that assesses firm's concerns about the three pillars of sustainability (social, economic and environmental). However, looking carefully at the ISE methodology, one can see that it heavily incorporates issues related to the management quality and concerns related to ethical business conduct, more than typical aspects of social action. This could be a consequence of the priority given to firm sustainability concerns due to financial scandals previously mentioned but also for the need of firm survival in periods of crisis as suggested (MOLDAN; JANOUŠKOVÁ *et al.*, 2012).

2.2.1 The ISE Methodology

The Corporate Sustainability Index (ISE) is a theoretical portfolio of approximately 40 companies, selected among the most traded on the Brazilian market, and better graded in terms of social responsibility and sustainability concerns in the year through an assessment process conducted by the ISE Executive Council. A set of required criteria must be fulfilled for a company that intends to participate in the process (BM&FBOVESPA, 2012): (i) be one of the 200 stocks with highest market trading in the previous twelve months, (ii) have been traded in at least 50% of the stock exchange sessions in the previous twelve months, (iii) to comply with the sustainability criteria endorsed by the ISE Executive Council.

Additionally, the ISE Executive Council also sets conditions for exclusion of a firm from the ISE portfolio (BM&FBOVESPA, 2012): (i) if during the portfolio term the company enters a regime of judicial reorganization or bankruptcy, (ii) in the case of a public offer that causes the removal of a significant fraction of stocks from market negotiation, (iii) in the event that the ISE Executive Council understands that a certain firm event is able to alter significantly the degree of firm sustainability and social responsibility of the firm.

The ISE Executive Council has adopted the concept of sustainability focused on the three axes of the Triple Bottom Line (TBL), featuring a sustainable business management as one that integrates adequately the social, economic and environmental dimensions of business. In this triple bottom line, the ISE added the dimension corporate governance, given that its relevance was highlighted by the presence of the IBGC in the ISE Committee (MARCONDES; BACARJI, 2010). In fact, the corporate governance dimension is very close to the economic line and firm continuity. The economic and financial dimension has a natural bias associated to firm performance and sustainability. By incorporating the corporate governance dimension, the ISE index has emphasized the economic line from the TBL.

2.2.2 The ISE questionnaire

The ISE Executive Council hires the Center for Sustainability Studies of the Getúlio Vargas Foundation (CES-FGV) for the preparation of firm annual review. Companies respond the ISE questionnaire on a voluntary basis. The questionnaire incorporates five dimensions, with the goal of obtaining the most realistic possible picture of each firm in terms of social responsibility and sustainability concerns: (i) Environmental, Social, Economic-Financial dimension; (ii) Corporate Governance dimension; (iii) Overall dimension, (iv) Climate Change dimension, and (v) Nature of Product dimension.

The Environmental, Social, Economic-Financial dimension refers commitment to fundamental ethical principles, relationship with various stakeholders, income generation, sustainability management, relationship with the environment, investment budget, firm performance and growth. The Corporate Governance dimension assesses the quality of the firm corporate governance system. The Overall dimension assesses commitments to sustainable development, and the alignment to best practices in sustainability. The Climate Change dimension analyzes firm management policy to actions associated to climate change and information disclosure on this topic. The Nature of Product dimension measures the direct and indirect impacts of products and services offered by the company, as well as the adoption of precautionary and availability of information to consumers. As pointed out previously, the “Environmental, Social and Economic- Financial” and “Corporate Governance” dimensions give much importance to firm performance and management quality within the ISE.

The methodology of questionnaire assessment is based on two analysis: a quantitative and a qualitative one another. The quantitative analysis considers the questionnaire score, in which all dimensions have the same weight, with specific criteria and indicators in each dimension. The qualitative analysis is based on the verification of supporting documents that are requested at the end of the enquiry period. After the questionnaire analysis, cluster analysis is run in order to identify groups of companies with similar Corporate Social responsibility and Sustainability Performance (CSSP), and make up the general classification to compose the ISE portfolio with up to 40 best performing companies (BM&FBOVESPA, 2012).

As a whole, it can be seen that the ISE index comprises several aspects of Corporate Social and Sustainability Performance (CSSP) which makes it a complex index.

2.3 Hypotheses rationale

A set of factors have been examined as able to affect the propensity of the firm to improve Corporate Social and Sustainability Performance (CSSP). Research focusing Corporate Social Responsibility presents arguments that, ultimately, should not be in disagreement with that related to sustainability concerns. However, an index that comprises both corporate social actions and sustainability concerns may have some specificities due the weight given to each aspect that can make the index more inclined to a particular aspect.

The literature has considered, under distinct theoretical frameworks, among such factors, for example, profitability, size and leverage. More recently, aspects of ownership structure and growth opportunities have also been considered as capable of interfering in CSR and sustainability policies. The annual firm pertinence to the ISE index is influenced both by CSR policy and sustainability concerns, which requires reflection with respect to these two aspects.

Ownership concentration and CSSP

Agency conflicts among key stakeholders, such as shareholders, managers and creditors, treated by the Theory of the Firm, are moderated by ownership structure as the evidence has shown. As an example, conflicts between owners and executive management are stronger in markets with low ownership concentration, in contrast to others with dispersed ownership, in which conflicts of interest between majority and minority shareholders seem to be more relevant (SHLEIFER; VISHNY, 1997; CUERVO, 2002; 2004; CLAESSENS; YURTOGLU, 2013). Besides, evidence has also been found that different aspects of ownership structure affect firm value and performance (ALLEN; PHILLIPS, 2000; VILLALONGA; AMIT, 2006), as well as investment and financing policies (CHIRINKO; SCHALLER, 1995; SCHIANTARELLI; SEMBENELLI, 2000; GOERGEN; RENNEBOOG, 2001; CRISÓSTOMO, 2011). Facing such evidence, it is feasible to propose that ownership

structure may also moderate firm CSR and sustainability concerns, since certain shareholders may be more interested in improving CSR or sustainability policy.

Initial research has documented the effect of ownership structure on CSR policy with inconclusive results (ROBERTSON, 2009; BARNEA; RUBIN, 2010; LI; ZHANG, 2010; GODOS DÍEZ; FERNÁNDEZ GAGO; CABEZA GARCÍA, 2012). Some studies have found a positive effect of ownership concentration on the CSR policy with some nuances. In Spain a positive effect of ownership concentration in the hands of the main shareholder was detected (GODOS DÍEZ; FERNÁNDEZ GAGO *et al.*, 2012). In Singapore and Malaysia a positive effect of ownership concentration in hands of the government was documented (ENG; MAK, 2003; SAID; ZAINUDDIN; HARON, 2009). Ownership of institutional investors has been found to be positively related to CSR in USA (JOHNSON; GREENING, 1999; HARJOTO; JO, 2008). On the other hand, CSR policy is negatively affected by internal ownership in the USA (BARNEA; RUBIN, 2010), or by ownership concentration in hands of the main shareholder in the European scenario (LÓPEZ-ITURRIAGA; LÓPEZ-DE-FORONDA, 2011), and also in non state Chinese companies (LI; ZHANG, 2010).

With regard to concerns about firm sustainability, firm continuity and management arise as relevant. These concerns are related to the importance given to the corporate governance system. Indeed, the literature has detected that large shareholders play an important role in shaping the corporate governance system (SHLEIFER; VISHNY, 1997; CLAESSENS *et al.*, 2002). Adopting good corporate governance practices signals firm concern with good management and firm sustainability. Improvement of the corporate governance system minimizes agency conflicts in ownership concentrated or non concentrated markets (LA PORTA *et al.*, 1998; CUERVO, 2002; DYCK; ZINGALES, 2004).

High ownership concentration, usually associated to a reduced number of controlling shareholders, favors the reduction of agency conflicts between managers and owners by facilitating management monitoring and alleviating the free-rider problem. On the other hand, it may also allow the exacerbation of private benefits of control in different ways (DYCK; ZINGALES, 2004; RIYANTO; TOOLSEMA, 2008), leading ownership concentration to be considered as detrimental to the improvement of corporate governance under the argument that controlling shareholders benefit from a weaker corporate governance system, especially in markets with less legal protection to minority shareholders (LA PORTA; LÓPEZ-DE-SILANES *et al.*, 1998; SILVEIRA; BARROS, 2008; SILVEIRA *et al.*, 2010). Considering the relevance of the Corporate Governance Dimension in the ISE index, and the high private benefits of control existing in the Brazilian market (DYCK; ZINGALES, 2004), we propose the hypothesis that controlling shareholders in Brazil are not prioritizing the improvement of the corporate governance system, or even environmental or social concerns, which are close to firm sustainability, making high ownership concentrated detrimental to CSSP, as proxied by the pertinence to the ISE index, in line with previous results in Brazil (NUNES; TEIXEIRA *et al.*, 2010; LOURENÇO; BRANCO, 2013).

Hypothesis 1: Ownership concentration is adversely related to firm CSR and sustainability concerns in the Brazilian market. This leads to the expectation that higher ownership concentrated firms are less likely to compose the ISE portfolio.

Growth Opportunities and CSSP

Firm's Growth opportunities have been seen as capable to moderate the intensity of CSR actions and sustainability concerns. On the one hand, the need for growth pushes the firm to maximize its investment opportunities which may lead to restrictions in social activities since available resources will be directed primarily to investment projects (LI; ZHANG, 2010). On the other hand, the need to seize growth opportunities requires funding capacity, which requires the company to be committed with sustainability standards, which is

important in the funding market. This expectation for sustainability is associated with high standard of the corporate governance system, which may lead companies with growth opportunities to increase their concerns on corporate sustainability (ARTIACH; LEE *et al.*, 2010; ZIEGLER; SCHRÖDER, 2010; LOURENÇO; BRANCO, 2013). This line of reasoning suggests that the company with growth opportunities may be more prone to look for high sustainability standards in order to be well regarded by the funding market as proposed in the following hypothesis:

Hypothesis 2: Growth opportunities contribute positively to the sustainability practices of the company. This leads one to expect that firms with more growth opportunities are more likely to compose the ISE portfolio.

Profitability and CSSP

The Stakeholder Theory (FREEMAN; WICKS *et al.*, 2004) and the Resource Based View (BARNEY, 1991; BARNEY; WRIGHT; KETCHEN, 2001) proposed the virtuous cycle between CSR and firm performance, so that CSR actions are able to create value for the company since society has a positive sensitivity to this type of corporate action. Somehow, in contrast to this argument, the Stockholder approach argues that the company should be focused on good management and quality of service provided to customers, and thus in the ability to create value for shareholder and be committed to outside investors (FRIEDMAN, 1962; 1970). This Stockholder approach is then strongly linked to the sustainability concerns, in line with high standards of corporate governance.

The Stakeholder theorists argue that concern with a broad spectrum of stakeholders does not exclude the trio shareholder-manager-creditor (FREEMAN; PHILLIPS, 2002; FREEMAN; WICKS *et al.*, 2004). However, under this broad perspective, business activity must take into account maximizing not only shareholders interests but also other stakeholders interests, undertaking actions CSR and being committed to sustainability concerns. Thus, the company's vision is expanded by integrating an ethical and responsible conduct in its dealings with various stakeholders.

As a consequence of the proposed virtuous cycle between firm CSR and performance, the literature has sought to find an association between both, with inconclusive results, and the possibility of mutual causality (MARGOLIS; WALSH, 2001; 2003; ORLITZKY; SCHMIDT *et al.*, 2003; CRISÓSTOMO; FREIRE; VASCONCELLOS, 2011).

The argument about the effect of profitability on CSR and Sustainability is associated with the fact that firms with higher profitability tend to have more funds available to undertake CSR actions, under the slack resource theory framework (WADDOCK; GRAVES, 1997; HUSTED; SALAZAR, 2006). This argument is more focused on CSR issues. Corporate sustainability has also been seen as motivated by profitability in recent researches, since this improves firm communication and the funding market (ARTIACH; LEE *et al.*, 2010; LOURENÇO; BRANCO, 2013). Sustainability issues required by ISE are more strongly motivated by profitability and seen as capable of improving the performance and firm image. Following this argument, we consider appropriate to propose a hypothesis that profitability contributes to higher CSSP.

Hypothesis 3: Profitability contributes positively to CSR practices and sustainability of the Brazilian firm. This leads one to expect that firms with higher profitability are more likely to compose the ISE portfolio.

Leverage and CSSP

Creditors are usually more effective in pressing for meeting their demands, since they finance the company's investment and need guarantees for return, and sometimes lead to firm monitoring (ARTIACH; LEE *et al.*, 2010; CRISÓSTOMO; FREIRE *et al.*, 2011). More

indebted companies have more commitment to creditors, which may lead to a reduced capacity to undertake CSR actions. Moreover, concern about corporate sustainability, good management and transparency are fundamental to improving communication with the market and facilitate access to external financing. While the debt may restrict CSR, otherwise, more concern for sustainability is positive to external financing. Thus, one can assume that Brazilian companies are seeking to improve their sustainability practices in order to improve external funding capacity. On the other hand, debt may also limit firm ability to undertake CSR due to the priority of commitment to creditors which may reduce financial slack. This leads us to propose the hypothesis that there is a neutral effect between debt and an index that incorporates CSR and sustainability in the following terms:

Hypothesis 4: Debt has no effect on firm propensity to compose the ISE portfolio.

Firm Size and CSSP

Despite arguments about the possible effect of firm size on CSR are still controversial (ORLITZKY, 2001; UDAYASANKAR, 2008; BAUMANN-PAULY *et al.*, 2013), firm size has been an important variable control in research on determinants of CSR.

The argument about the positive effect of firm size on CSR posits that larger firms have more capacity to provide infrastructure and financial resources to undertake CSR actions (WADDOCK; GRAVES, 1997; CRISÓSTOMO; FREIRE *et al.*, 2011). As the company grows it becomes more visible and interacts with a broader spectrum of stakeholders experiencing greater demand for CSR, so there is a higher level of mutual interference between business and society (SERAFEIM, 2013). This increased visibility has effect on the level of concern about corporate sustainability that may be more relevant to larger companies. In this sense, firm size seems to become more relevant for both CSR and sustainability concerns. Larger companies tend to be charged for shareholders and society at large so that it is more compelled to adopt better corporate governance practices and ethical conduct (ARTIACH; LEE *et al.*, 2010; ZIEGLER; SCHRÖDER, 2010; ANDRADE; BRESSAN *et al.*, 2013; LOURENÇO; BRANCO, 2013). In this regard we propose the hypothesis that larger firms will be more prone to undertake CSR actions and be more committed with sustainability as summarized in the following hypothesis that predicts a positive effect of firm size on CSSP:

Hypothesis 5: Firm size affects positively firm CSR policy and sustainability concerns. This way, it is expected that larger firms are more likely to compose the ISE portfolio.

3 METHOD AND SAMPLE

3.1 Method

Literature has commented the difficulties in measuring CSR that may arise due the diversity of CSR actions a company may undertake as well as the voluntary aspect of its disclosure, and even the still uncertain CSR definition (WADDOCK; GRAVES, 1997; ORLITZKY; SCHMIDT *et al.*, 2003; DAHLSTRUD, 2008; PELOZA, 2009; AGUINIS; GLAVAS, 2012). The aspect of firm sustainability is also subject to this problem. Sustainability is associated with firm's environmental concerns and also firm capacity to maintain performance and competitive advantage which may be dependent on good management and corporate governance practices, which means a priority for the economic pillar of sustainability (MOLDAN; JANOŠKOVÁ *et al.*, 2012). All that means that CSSP indexes are subject to complex measuring strategies as can be seen in the variety of indexes used (LI; TANG, 2007; SILVEIRA; LEAL *et al.*, 2010; HODGSON; LHAOPADCHAN; BUAKES, 2011).

Using the membership to the ISE index as proxy for the level of firm CSSP we estimate *logit* models in what the dummy variable ISE is the dependent variable as can be seen in the following model of equation (1):

$$ISE_{i,t} = \beta_0 + \beta_1.OC + \beta_2.ROA_{i,t} + \beta_3.GROP_{i,t} + \beta_4.SIZE_{i,t} + \varepsilon_{i,t} \quad (1).$$

In this model, the dummy variable ISE is set to 1 if the firm-year observation is included in the ISE index, and 0 otherwise.

OC stands for ownership concentration. This variable has been measured as voting ownership concentration in hands of the main owner, the sum in hands of the two main owners, and so forth until the sum of voting shares owned by the five main stockholders. Besides, for robustness of results, ownership concentration is also measured by the annual Herfindahl index for each firm-year observation, corresponding to the sum of squares of stocks in hands of each of the five main shareholders as done in previous works (MAURY; PAJUSTE, 2005; CRISÓSTOMO; LÓPEZ-ITURRIAGA; VALLELADO, 2014). Profitability has been proxied by ROA and ROE. Growth Opportunities (GROP) have been proxied by Tobin's q and calculated as the ratio between firm value (shares market value plus debt) and firm book value as usual (VILLALONGA; AMIT, 2006). Finally, firm size (SIZE) has been proxied by Ln of firm total assets.

$$ISE_{i,t} = \beta_0 + \beta_1.OC + \beta_2.ROA_{i,t} + \beta_3.GROP_{i,t} + \beta_4.LEV_{i,t} + \beta_5.SIZE_{i,t} + \varepsilon_{i,t} \quad (2).$$

Alternate models have incorporated the variable LEV, that stands for firm leverage, being measured by the ratio total debt over total assets. This model has been estimated for the sub sample of nonfinancial firms, for which leverage emerges as an important control variable as highlighted by the literature.

Besides these multivariate estimates we also perform univariate tests for firm financial characteristics to compare ISE firms, considered leading CSSP firms, and conventional firms, i.e., non ISE firms. Such tests allow us to have an idea about the differences between the two groups of firms.

3.2 Sample

This work has used a sample composed of firm-year data in the period 2006-2011. Financial and ownership data have been collected from Economatica database while the fact of composing the annual ISE has been verified at BM&FBOVESPA records. The database has a total of 1,649 firm-year observations. Among these, 179 are ISE firm-year observations, and 1,470 are non ISE firm-year observations. The sample is well distributed among several important sectors of the economy as can be seen in Table 1.

Table 1- Sample distribution by Industry

Industry	Full sample		ISE firms		non ISE firms	
	n	%	n	%	n	%
Petroleum and fuel products	29	1.76	2	1.12	27	1.84
Chemicals, Paper products, Metal-mechanical	252	15.28	32	17.88	220	14.97
Equipment, Electrical machinery, and transport equipment	130	7.88	13	7.26	117	7.96
Building and transportation	186	11.28	10	5.59	176	11.97
Food products and beverages and tobacco	156	9.46	10	5.59	146	9.93
Textile, clothing, leather and footwear	197	11.95	6	3.35	191	12.99
Communication	65	3.94	7	3.91	58	3.95
Electrical, Water supply and sanitary services	232	14.07	65	36.31	167	11.36
Financial	171	10.37	24	13.41	147	10.00
Others	231	14.01	10	5.59	221	15.03
Total	1649	100	179	100	1470	100

4 RESULTS

Table 2 shows descriptive statistics of model variables. Our findings on ownership concentration agrees with previous works in Brazil showing that, in fact, Brazilian firms still face high ownership concentration (LA PORTA; LÓPEZ-DE-SILANES *et al.*, 1998; LÓPEZ-ITURRIAGA; CRISÓSTOMO, 2010; SILVEIRA; LEAL *et al.*, 2010). The average ownership concentration of voting shares is around 55% in hands of the main shareholder (OC1) and reaches 77.57% in hands of the five main voting shareholders (OC5). Such characteristic of high ownership concentration may lead to specific effects on certain firm strategic policies as previously found, and possibly also on CSR policy and sustainability concerns as hypothesized in this work. Brazilian firm has an average ROA of 8.1%.

Table 2- Descriptive statistics for sample variables

Var	N	mean	sd	cv	median	min	max
OC1	1649	0.5509	0.2713	0.4925	0.5388	0.0014	1.0000
OC2	1649	0.6799	0.2492	0.3665	0.6996	0.0014	1.0000
OC3	1649	0.7334	0.2287	0.3119	0.7673	0.0014	1.0000
OC4	1649	0.7611	0.2147	0.2822	0.8089	0.0014	1.0000
OC5	1649	0.7757	0.2069	0.2667	0.8272	0.0014	1.0000
HI5	1649	0.4161	0.2980	0.7161	0.3531	1.96e-06	1.0000
ROA	1649	0.0811	0.1093	1.3482	0.0661	-0.1478	0.3291
GROP	1649	1.2830	1.1359	0.8853	0.9612	0.0087	6.2200
LEV	1478	0.1786	0.1679	0.9402	0.1522	0.0000	0.9569
SIZE	1649	13.6153	1.7408	0.1279	13.5492	8.9965	19.9781

Advancing in the descriptive analysis it is worth mentioning that ISE and Non ISE firm-year observations are, indeed, different as can be seen in Table 3 which contains mean comparison tests for model variables, between ISE and non ISE firm-year observations. As can be observed, ISE firms present inferior ownership concentration, more growth opportunities, and profitability. As expected, ISE firms have superior market presence and liquidity, which are both required to participate in the index. Mean test have been computed by parametric and non parametric tests for robustness of results.

Table 3 - Comparing ISE versus non ISE firm

Variable	ISE firms	non ISE firms	t test	non parametric test
	mean	mean	p-value	p-value
OC1	0.5102	0.5559	0.0167	0.0224
OC2	0.6596	0.6824	0.1246	0.0798
OC3	0.7096	0.7363	0.0701	0.0185
OC4	0.7366	0.7640	0.0535	0.0060
OC5	0.7494	0.7789	0.0355	0.0021
HI5	0.3656	0.4223	0.0081	0.0378
ROA	0.1214	0.0761	0.0000	0.0001
GROP	1.5714	1.2479	0.0002	0.0027
LEV	0.1786	0.1779	0.6703	0.3495
SIZE	15.6513	13.3673	0.0000	0.0001

Our main results can be depicted from *logit* model estimates that has the pertinence to the ISE index as the dependent variable. Model of equation (1) has been estimated to the whole sample (Table 4), and, an alternate model (equation 2), with the leverage variable has been estimated to the sub sample of non financial firms (Table 5).

As hypothesized, voting ownership concentration has shown to affect negatively firm Corporate Social and Sustainability Performance, proxied by the probability of a firm being in the ISE index (Table 4). This result is consistent to models estimated with different measures of ownership concentration, the sum of voting stocks in hands of the five main shareholders, and also by the Herfindahl index among the five main stockholders. Such result is consistent with the argument that large controlling shareholders may not see CSSP as most relevant. CSSP includes both CSR and sustainability concerns. Corporate governance is closely related to the economic pillar of sustainability, which is very important in the ISE index. The high importance of corporate governance concerns embedded in the ISE index may be driving this inverse relation. The literature has proposed and provided evidence that high ownership concentration is associated to weaker corporate governance (SHLEIFER; VISHNY, 1997; BOZEC; BOZEC, 2007; HU; IZUMIDA, 2008).

Our findings of a inverse relation between ownership concentration and the propensity to compose the ISE index is in accordance with previous works in Brazil (NUNES; TEIXEIRA *et al.*, 2010; LOURENÇO; BRANCO, 2013). It is worth mentioning that the results are robust to model estimates with different proxies of ownership concentration, and to models estimated for the whole sample, and also to an alternate model estimated for the subsample of nonfinancial firms, in what the leverage variable does appear as an independent variable (Table 5).

Table 4 - Logit Regression for the whole sample

Var	(i)	(ii)	(iii)	(iv)	(v)	(vi)
HI5	-1.5612*** (0.4266)					
OC1		-1.9465*** (0.4575)				
OC2			-2.0006*** (0.4781)			
OC3				-1.9508*** (0.5034)		
OC4					-1.8085*** (0.5228)	
OC5						-1.7601*** (0.5316)
ROA	2.2299* (1.1946)	2.2464* (1.2005)	2.4093** (1.2030)	2.3385* (1.1971)	2.3054* (1.1924)	2.2633* (1.1904)
TQ	0.5666*** (0.1036)	0.5730*** (0.1040)	0.5582*** (0.1041)	0.5613*** (0.1039)	0.5657*** (0.1037)	0.5667*** (0.1037)
SIZE	1.1897*** (0.0943)	1.2016*** (0.0943)	1.2038*** (0.0938)	1.1960*** (0.0936)	1.1937*** (0.0936)	1.1945*** (0.0937)
Constant	-20.9245*** (1.5531)	-20.8175*** (1.5528)	-20.5610*** (1.5475)	-20.3113*** (1.5544)	-20.2689*** (1.5656)	-20.2515*** (1.5727)
N	1649	1649	1649	1649	1649	1649
R ²	0.4010	0.4052	0.4040	0.4015	0.3987	0.3977
LR chi ² (18)	454.28	459.01	457.68	454.84	451.62	450.56
valor-p	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

As theoretically expected, growth opportunities contribute positively for the pertinence to the ISE index. At the same time that a firm with growth opportunities needs to use all available funds to maximize such opportunities, this firm also has to show that has implemented high standards of corporate governance practices, and also has sustainability as a relevant concern, i.e., it needs to signal to the market that it has the economic pillar of sustainability as a priority. This is crucial in the financial market. This finding of the positive influence of growth opportunities on CSSP is in accordance with hypothesis 2 and previous results in the international arena and also in Brazil (ARTIACH; LEE *et al.*, 2010; ZIEGLER; SCHRÖDER, 2010; LOURENÇO; BRANCO, 2013).

It also worth mentioning the positive effect of firm size on the probability of the firm being component of the index ISE, as theoretically proposed in hypothesis 5, based on the argument that larger firms are more able to worry about social actions (CSR), and, at same time, are more required to show high standards of sustainability concerns. This finding is also consistent with previous studies in different markets (ARTIACH; LEE *et al.*, 2010; NUNES; TEIXEIRA *et al.*, 2010; LOURENÇO; BRANCO, 2013).

As mentioned, Table 5 reports model estimation of equation (1) for the sub sample of non financial firms. Such model estimates includes the leverage variable (LEV) and confirm the findings for the whole sample. Model estimates confirm previous most important results depicted from Table 4. Indeed, ownership concentration adversely affects the probability of a firm composing the ISE index. In another direction, growth opportunities and firm size have shown to be important determinants of CSSP in the Brazilian firm.

Table 5 - Logit Regression for the sub sample of non financial firms

Var	(i)	(ii)	(iii)	(iv)	(v)	(vi)
HI5	-1.5825*** (0.4671)					
OC1		-2.1531*** (0.5063)				
OC2			-2.2005*** (0.5191)			
OC3				-2.1654*** (0.5440)		
OC4					-1.9966*** (0.5627)	
OC5						-1.9462*** (0.5713)
ROA	1.5333 (1.2451)	1.6125 (1.2545)	1.6570 (1.2551)	1.5684 (1.2488)	1.5285 (1.2429)	1.4832 (1.2404)
TQ	0.5478*** (0.1042)	0.5578 (0.1050)***	0.5358*** (0.1045)	0.5394*** (0.1044)	0.5437*** (0.1042)	0.5447*** (0.1042)
LEV	-0.2188 (0.7284)	-0.0381 (0.7342)	-0.2519 (0.7303)	-0.2864 (0.7292)	-0.3255 (0.7280)	-0.3329 (0.7273)
SIZE	1.1548*** (0.1054)	1.1611*** (0.1052)	1.1579*** (0.1044)	1.1541*** (0.1042)	1.1550*** (0.1042)	1.1588 (0.1043)
Constant	-20.2883 (1.7117)***	-20.0763*** (1.7111)	-19.6603*** (1.7009)	-19.4448*** (1.7076)	-19.4507*** (1.7197)	-19.4747*** (1.7259)
N	1478	1478	1478	1478	1478	1478
R ²	0.3708	0.3779	0.3770	0.3744	0.3708	0.3697
LR chi ² (18)	367.91	374.98	374.07	371.48	367.92	366.83
valor-p	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

With regard to profitability and leverage, results are not conclusive. Although hypothesis 3 predicts a positive effect of profitability on CSSP, results with ROA have shown a positive effect of profitability on CSSP for the whole sample model (Table 4), while this finding has not been found for the non financial firms sub sample estimation and also not in models that have adopted ROE as proxy for profitability. In fact, literature findings are not conclusive about the effect of profitability on CSSP, with possible endogeneity being suggested (ARTIACH; LEE *et al.*, 2010; ZIEGLER; SCHRÖDER, 2010; CRISÓSTOMO; FREIRE *et al.*, 2011).

No significant effect of leverage on CSSP has been found. Similar to results related to profitability, results about the influence of leverage on CSSP are not conclusive but it remains considered an important control variable in such models.

CONCLUSIONS

Research has looked for determinants of Corporate Social Responsibility (CSR) and Sustainability. Recently, research has given attention to the possible role played by ownership structure on CSR and sustainability, due to reputational concerns, visibility, and the search for legitimizing firm actions. This paper has examined the conceptual aspects of CSR and Sustainability, trying to properly understand the ISE, index that follows some other similar indexes in other countries. Analyzing the ISE, one can see that it prioritizes the economic pillar of sustainability, taking into account strongly firm corporate governance concerns.

This paper examines whether ownership concentration moderates the level of corporate social and sustainability performance (CSSP) in Brazil, as proxied by firm membership to the ISE index. Using a stakeholder framework, we find that CSSP of Brazilian firm is inversely correlated to ownership concentration. This result may be an indication that

controlling voting shareholders may not see CSSP as a priority. Corporate governance concerns are closely related to the economic pillar of sustainability, which is very important in the ISE index. The adverse effect found may be a signal that dominant shareholders do not contribute to the advance in the adoption of good corporate governance practices which is closely linked to firm sustainability. The high private benefits of control documented in Brazilian market may be related to our results. Large controlling shareholders may not see CSSP as a relevant concern.

Although the adverse effect of ownership concentration on CSSP, additional results are important to highlight. Leading CSSP Brazilian firms are significantly larger, and face more growth opportunities. These two firm characteristics have shown to be able increase the probability that the firm become listed in the ISE index. As proposed in the literature, indeed, firm size is an important determinant for CSSP in Brazil. Larger Brazilian firms are actually more worried about CSR actions, or able to undertake them, as well as with sustainability concerns. At the same time, growth opportunities seem to be able to increase firm concerns with CSR and sustainability. Firms with investment opportunities are more prone to look for CSSP improvement. This may be, in fact, related to firm relation with funding market that appreciates good sustainability standards of firms.

We see this work as contribution to Corporate Social and Sustainability Performance (CSSP) research by providing evidence on the negative CSSP-ownership concentration sensitivity, which may be linked to the high private benefits of control in the Brazilian market. This adverse effect of ownership concentration on CSSP comes from Brazil, an important emerging market, where this research needs to be enforced.

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