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THE RELATIONSHIP BETWEEN ENVIRONMENTAL REPORTING AND CORPORATE GOVERNANCE CHARACTERISTICS OF ROMANIAN LISTED ENTITIES

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ABSTRACT

Within this study, we have focused on factors related to the entity, such as the internal characteristics, consisting mainly in how the entity is managed, in order to identify the existence of certain associations between the characteristics of corporate governance and the existence of environmental reporting in the case of the Romanian companies listed at Bucharest Stock Exchange. We have suggested a model comprising corporate governance characteristics such as size and structure of the board, existence of the board committees and the practice of separation between Chief Executive Officer and Chairman of the board. We found that board independence and board size are factors that explain the level of environmental reporting within Romanian companies. For assuring a high transparency level of environmental performance within a company, the board of directors should ensure a sufficient number of independent members able to exercise an independent reasoning in order to solve potential conflicts of interests.

Corporate Governance, Board Independence, Environmental Reporting, Listed Companies, Bucharest Stock Exchange, Romania

INTRODUCTION

Environmental reporting represents a tool for providing environmental information to the stakeholders and reflecting environmental performance and companies concerns on environmental issues (Shearer, 2002).

During the last decade, the demand for environmental reporting has increased dramatically within the stock listed companies (Beretta and Bozzolan, 2004). External

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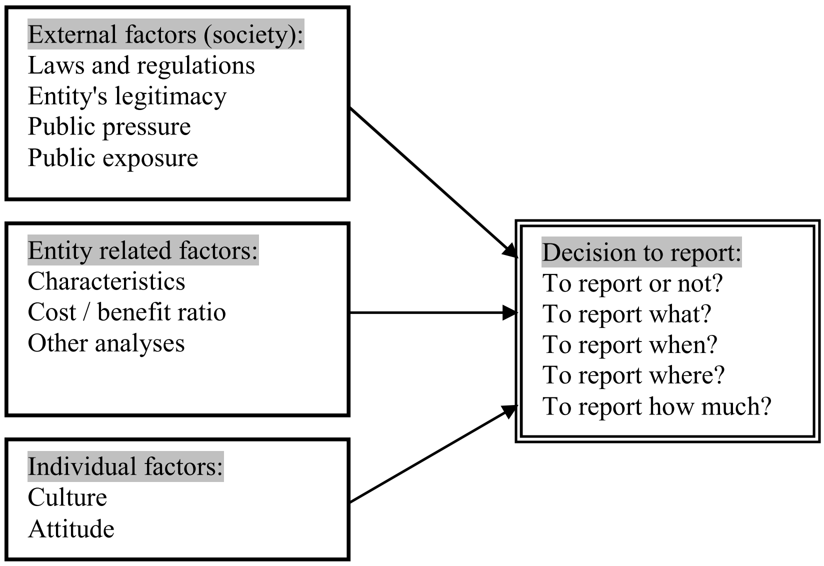
users require relevant and credible information regarding the environmental performance of the entities (Di Piazza and Eccles, 2002). Because environmental reporting remains voluntary on an international scale, there are major differences in terms of quality and quantity for the environmental information reported by entities from varied sectors and countries. A large number of studies analyzed the time and space variation of the environmental reporting, emphasizing the factors that are determinant for the environmental reporting (Buhr and Freedman, 2001; Larrinaga *et al.,* 2002; Deegan *et al.,* 2002; O'Donovan, 2002; Holland and Foo, 2003; Al-Tuwaijiri *et al.*, 2003; Cormier *et al.,* 2005; Frost, 2007; Taylor and Shan, 2007; Sumiani *et al.,* 2007).

Lee and Hutchinson (2005) offer a current status of the factors that can influence the decision to report environmental information (Figure 1):

Figure 1. **Factors influencing the decision to report environmental information**



(*Source*: Lee and Hutchison, 2005: 86)

Starting from the agency theory, the company is accountable for the decision to report environmental information, decision made by the management to serve the interests of the shareholders (Buniamin *et al.*, 2011: 56). Kolk (2006) considers that to increase the shareholders' insight and to influence corporate behavior, emphasis should be laid on the internal context.

The purpose of this study is to examine the relationship between corporate governance characteristics namely size and structure of the board, existence of the board committees and the practice of separation between Chief Executive Officer and Chairman of the board and the extent of environmental reporting.

Within this study, we have focused on certain factors related to the entity's internal characteristics, consisting mainly in how the entity is managed, in order to identify if good corporate governance practices explain the voluntary environmental reporting in the case of Romanian companies listed on the Bucharest Stock Exchange. As far as the results are concerned, we expected that companies which comply with good corporate governance practices, related to the board size and structure, the practice of separating the Chief Executive Officer and the Chairman of the board, the existence of board committees, will be more environmentally responsible and report more environmental information.

The findings reveal that the size and structure of the board, the independence of the board and board size have a significant relationship with environmental reporting as far as Romanian listed companies are concerned.

The paper is organized as follows. The next section provides an overview of corporate governance issues in particular for Romania. The literature review is presented in the following section, followed by a presentation of research methodology. The following section highlights the study findings and results and the final section provides conclusions, limitations of the study and directions for future research.

1. CORPORATE GOVERNANCE IN ROMANIA

There is no generally accepted definition for corporate governance. The literature highlights significant differences in defining this concept depending on how the company, organization, investors and other users perceive this concept.

A financial, more traditional approach would restrict the corporate governance to the relation between the company and shareholders. This is the vision that is specific to the agency theory, according to which, the manager is rationally interested in maximizing his or her personal profit, and there is a conflict of interests between the shareholders of the company and the manager they hired. This theory brings the conflict between the principal and the agent, appearing in the case where the structure of incentives imposes personal costs from the agent and where it performs activities with the intention to maximize the principal's objectives. This conflict, called *agency problem* has been used in several studies to explain why sometimes managers chose to take decisions which in fact do not best represent the interests of the company (Booth and Schulz, 2004). Judging from the point of view of this theory, corporate governance is defined as the supervision and control process intended to ensure that company management acts according to the interests of the shareholders or owners (Solomon, 2007).

From a different perspective, corporate governance surpasses the relation between the company and owners and is regarded as an ensemble of relations between the company and stakeholders, including here, in addition to shareholders and clients, the suppliers, employees, society, etc. Such a perspective is expressed by *the stakeholder theory* and is based on the idea that the company's success depends on the relation between the company and stakeholders.

There are some commonly accepted principles of corporate governance issued by OECD in 1999 are they refer to the rights and equitable treatment of shareholders, obligations for all legitimate stakeholders, the role and responsibilities of the board, integrity and ethical behavior, disclosure and transparency (OECD, 1999). In essence, the corporate governance code is a set of principles, standards and good governance methods whose implementation does not have a compulsory character. In the European Union, countries have used two models of corporate governance which different characteristics: the Anglo-American model which is an outsider-based system and tends to give priority to the interests of shareholders and encourages radical innovation and cost competition and the Continental European model which is an insider-based system that recognizes the interests of workers, managers, suppliers, customers and the community and facilitates innovation and competition. Central and Eastern European countries (including Romania) have a common governance model based on internal control, as a result of the privatization and reorganization process (Vasilescu, 2008).

Until 2001, there was no National Corporate Governance Code in Romania, but the *legislative framework contains aspects related to corporate governance:* The Company Law, The Commercial Code, The Law on the capital market with all its amendments, The Law regarding the insolvency procedure, The Law on accounting with all the amendments, The Order of the Minister of Public Finance on the harmonization of Romanian accounting with the European Directives and the International Accounting Standards, The Labor Code, The Law on the collective employment contract (Duca *et al.,* 2007). In assessing the strengths and weaknesses of Romanian corporate governance in 2001, OECD recommended that top priority should be given to reforms that will improve effective implementation and enforcement of existing laws and regulations. Also, OECD recommended the emergence of a strong private sector in Romania with an effective ownership and control structure and prevention of expropriation by controlling shareholders and/or managers (OECD, 2001: 8).

A first step was made in August 2001, when the Bucharest Stock Exchange elaborated a *Code of Corporate Governance* and introduced a virtual tier, the Plus tier, for the listed companies that wanted to implement the principles of corporate governance.

In April 2004, World Bank publishes a report regarding the assessment of corporate governance in Romania for the year 2002. It recommended that policymakers should protect shareholder rights, create a Corporate Governance Institute, provide training to board members, develop a new Corporate Governance Code, refocused on the role of the board of directors, and revise the Company Law with emphasis on shareholder rights and the board of directors (World Bank, 2004). In 2003, the Institute of Corporate Governance of BVB (Bucharest Stock Exchange) was founded with the purpose of improving the professional standards for managers (Vasilescu, 2008: 5).

Bucharest Stock Exchange elaborated, in 2008, a new Code of Corporate Governance, more complex and more adapted to the European legislation. Romanian listed companies are required to include in their Annual Report a Declaration of conformity or nonconformity with a corporate governance code adopted in 2008, inspired by the Corporate Governance Code of the Warsaw Stock Exchange (Ionaşcu and Olimid, 2011). The 2008 Romanian Corporate Governance Code explains the role, the duties and the composition of companies' boards of administrators, management and their relationships with different stakeholder groups. Companies accepted for trading on Bucharest Stock Exchange adopt and comply with the new Corporate Governance Code on a voluntary basis, but issuers of securities must include a Comply or Explain Declaration in their financial statements beginning with 2009 (Ionaşcu and Olimid, 2011).

In a report of 2009, Canadian Business Association and some partners companies analyze the implementation of the 2008 Corporate Governance Code within 101 Romanian companies listed at Bucharest Stock Exchange and Rasdaq Stock Exchange. They conclude that most Romanian companies fail to observe the requirement of the Corporate Governance Code, the requirements of independence and fail to have an adequate level of transparency regarding corporate governance practices (Canadian Business Association, 2009). Regarding the conformity level of the Romanian companies listed at Bucharest Stock Exchange in 2010, Feleagă *et al.* (2011) analyze 15 of the companies listed at Bucharest Stock Exchange, first category and conclude that most sample companies do not meet the recommendations of the Bucharest Stock Exchange code of corporate governance regarding the independence of directors and audit committee members (Feleagă *et al.*, 2011).

2. LITERATURE REVIEW

As many other countries from Central and Eastern Europe, Romania inherited heavy environmental problems from the communist period. These problems were caused by the industrial policy based on high productivity that did not take into account the impact on environment and public health. The biggest issues concern sectors like water quality, waste disposal, and air and soil pollution. Environmental policies in Romania emerged during the 1990s, at the same time with the former Ministry of the Environment. The national objectives related to the environmental field were elaborated in 1992, "The National Strategy for Environmental Protection" being revised in 1996 and 2002. Starting from 1999, Romania has adopted a *National Strategy for Sustainable Development*, in accordance with the area regulations in

Europe and worldwide. Since 2000 the national environmental policies try to assess the European standards and objectives, the environmental aspects becoming an important component for Romania's general policy. The year 2007 marks the integration of Romania into the European Union, the implementation of European environmental policies and the introduction of new European funding programs for environmental protection activities (structural funds). Since 2008, Romania has a new National Strategy for Sustainable Development, characterized by a new philosophy of development embraced in the European Union and worldwide. The strategy sets actual targets for the transition to a generating value added development model, aimed at a continuous improvement of the quality of people life and their relations in harmony with the natural environment.

However, there is no legislation, so far, in this area, requiring the Romanian companies, either listed or not on the capital market, to provide stakeholders with separate reports or specific information related to environmental impact. Providing such information would be useful, especially for listed companies and for those operating in industries considered highly polluting. In other words, the entity's commitment regarding the environmental impact or environmental issues remains voluntary in the case of Romanian companies.

Although Budeanu and Thidell (2006) consider that despite the incipient stages of public disclosure of environmental information, Romanian enterprises are ready to catch up with Western practices, Ienciu *et al.* (2011) investigating the quality of environmental information voluntarily reported by Romanian listed companies compared with Hungarian companies for the period 2006-2008, concludes that the majority of environmental information provided by the Romanian companies is incomplete and irrelevant. The study sustains that the legitimacy theory is the most adequate for explaining and defining environmental reporting within Romanian companies because companies are only looking at the aspects able to ensure a positive image and a good place in the society.

Jindrichovska and Purcărea (2011) focus their study on corporate social responsibility in two countries: Czech Republic and Romania. The study considers that although the standard of environmental reporting is based on the same principles in both countries, the particular approaches differ. Also with regards to Romania, a more systematic regulatory approach may be adopted for environmental reporting.

Regarding the correlations between the characteristics of corporate governance and the level of voluntary reporting a series of studies has been conducted. According to this assumption, Rao *et al.* (2012) investigate using a quantitative analysis the relationship between Environmental Reporting and Corporate Governance attributes of Australian companies for 2008. They analyze the annual reports of 100 Australian firms listed on the Australian Stock Exchange. The paper demonstrates a significant positive relationship between the extent of Environmental Reporting and the proportion of independent and female directors on the board.

Uyar (2011) investigates the company characteristics that influence the information disclosure level on the internet for the Turkish companies listed on the Istanbul Stock Exchange (ISE), related to corporate reporting. The results indicate that firm size and being listed in the XCORP are significant explanatory variables for the total disclosure score on the corporate web sites.

Sanchez *et al.* (2011) analyze the disclosure practices of Spanish companies in relation to a voluntary typology of strategic information to determine the factors that explain these practices. Findings show that companies where the Chairperson of the Board is the same person as the CEO and, moreover, where there is a lower frequency of meetings, disclose a greater amount of strategic information on their web sites.

The study conducted by Ho and Wong in 2001 (Ho and Wong, 2001) analyzes the connection between the structures of the corporate governance (the proportion of independent managers, the existence of the audit committee, the existence of dominant personalities, the ratio of family members) and the level of voluntary reporting within the Hong Kong Stock Exchange listed entities. The study concludes that the existence of the audit committee positively influences the level of voluntary reporting. The study conducted by Gul and Leung (2004) is also focused on the Hong Kong market, analyzing the connections between the structure of the management board and the reporting of voluntary information for 385 entities on the basis of regression analysis. The results have shown that the executive manager's dual role (executive manager is also the chairman of the board) is associated with less voluntary reporting.

Haniffa and Cooke (2002) analyze the importance of various cultural characteristics or corporate governance specificities for voluntary reporting within Malaysian stock listed companies. The following variables have been analyzed by the study: board structure, dualist role, position of the board chairman, existence of managers who are members of the board in other companies, the existence of board chairmen who are managers in other companies. The working hypotheses have been tested by means of regression analysis. Results have shown that a non-executive position for the chairman of the board influence the level of voluntary reporting, including the environmental reporting.

Barako *et al.* (2006) started from the idea that corporate governance must ensure reporting for all stakeholders. The study analyzes the way corporate governance attributes, shareholder structure and company characteristics influence the level of voluntary reporting for Kenyan companies. The characteristics of corporate governance going through analysis as independent variables include: the proportion of non-executive managers, the management system (unitary or dualist), the existence of the audit committee. The authors prove the presence of a positive association between the existence of audit committees and the number of voluntary environmental reporting as well as the presence of a negative association between the proportion of non-executive managers within the board and the number of voluntary reporting.

The study conducted by Huafang and Jianguo (2007) intends to examine, by means of regression analysis, the impact of shareholder structure and board structure onto the voluntary reporting for a sample of 559 listed companies from China. The percentage of independent managers is associated with an increased level of voluntary reporting.

Buniamin *et al.* (2008) analyze the way the following corporate governance characteristics influence the level of environmental reporting: Independence of managers, dualist management system, shareholder structure, and board size. The article is based on the content analysis for 243 Malaysian companies stock listed in 2005. The study shows how board size influences the level of environmental reporting. In a study conducted on the Malaysian stock market, Akhtaruddin *et al.* (2009) suggests a positive association between the size of the board and the reporting of voluntary information, also between the ratio of independent, non-executive managers within the board and the voluntarily reported information.

Li *et al*. (2008) investigates, by means of a disclose index, the relationship between the intellectual capital reporting and the characteristics of the corporate governance, for a sample of 100 Great Britain stock listed companies. The independent variables include various structures of corporate governance: board composition, shareholder structure, audit committee size and frequency of meetings and the duality of the executive manager. The analysis findings indicate a significant association between the reporting on intellectual capital with factors such as board members, shareholder structure, audit committee size, and frequency of meetings. Donnelly and Mulcahy (2008) prove that the level of voluntary reporting for Ireland stock listed companies' increases with the number of non-executive managers within the board. Kelton and Yang (2008) examine the association between the corporate governance mechanisms and transparency of reporting measured by the financial reporting over the Internet. The results indicate that companies wherein shareholders rights are less protected, ratio of independent managers is higher, percentage of financial experts inside the audit committee is higher are more involved in the reporting of information.

Al-Shammari and Al-Sultan (2010) analyze the relationship between the characteristics of corporate governance and the voluntary information reported within annual financial statements from 170 companies listed with the Kuwait Stock Exchange in 2007. The study analyze four major corporate governance characteristics: ratio of non-executive managers in the total number of board directors; ratio of family members in the total number of board directors; dual role of chairman and executive manager and the existence of audit committee. Univariate and multivariate regression analysis have been used to examine the relationship between these characteristics and voluntary reporting. The results indicate that only the existence of a voluntary audit committee influences in a most significant and positive way the voluntary reporting.

Klai and Omri (2011) analyze the effect of corporate governance mechanisms (characteristics of board and shareholder structure) over the financial reporting on a sample of companies listed with the Tunisian Stock Exchange for a period between 1997 and 2007. Results show that the mechanisms of corporate governance affect the quality of financial information supplied by analyzed Tunisian companies. The percentages owned by foreigners and families, in particular, decrease the quality of information which are reported, while the state supervision and financial institutions are associated to a higher quality of financial information.

3. RESEARCH METHODOLOGY

The present study is an empirical analysis on how corporate governance characteristics might explain the level of environmental reporting for a sample of 64 companies listed at Bucharest Stock Exchange. The variables were collected from 2010 annual reports and other corporate reports using content analysis and are presented in Appendix 1.

For assessing how environmental performance or environmental information is reported in 2010 by the Romanian companies listed at Bucharest Stock Exchange in the first, second and third tier (EnvRep) we constructed a Disclosure Index (DI) on the following groups of information:

- [*d1*] Non-financial information regarding environmental objectives, management, policy and other aspects which can reflect environmental performance in non-financial information. This indicator can bring value ”1” if the company reports this kind of information or ”0” if the company doesn’t report the information.
- [*d2*] Key Performance Indicators regarding environmental impact (water, air, soil). Such indictors are stipulated by Global Reporting Initiative, and other organisations. The indicator is “0” if company does not report such indicators or can be “1” if company reports such indicators although this indicators are not correlated with indicators stipulated in international guidelines.
- [*d3*] Financial indicators (environmental investment, costs, provisions). Such indicators reflect in monetary terms the companies’ attitude regarding environmental reporting. The values can be “0” if the company does not report this information or “1” if the company reports this kind of information.

This method of quantifying environmental information allows the integration of different types of information into one single figure comparable between companies and is not very subjective because this is not a qualitative examination depending on the researcher’s point of view which is not always the same with the investor’s point of view in terms of environmental reporting relevance.

So, our EnvRep Disclosure Index (DI) is calculated as follows:

$$EnvRepDI = \frac{\sum_{i=1}^{n} di}{m},$$

Where,

n – number of element disclosed, n=3

m – number of possible elements to disclose, m=3

di – group of elements disclosed

The sample consists of 64 entities listed at Bucharest Stock Exchange in the first, second and third tier from areas of activity that may impact the environment: agriculture, forestry and fishing; the extractive industry; the manufacture industry; production and supply of electricity, thermal energy, gas, water; water distribution, sanitation, managing waste, recyclable materials recovery activities; construction; transport and storage; food industry, hotels, restaurants; the repair, retail, maintenance and installation of machinery and equipment; printing and reproduction of recorded media. The distribution of the companies is presented in Table 1.

Table 1. **Distribution of the companies by sector of activity**

	Frequency	Percent	Cumulative Percent
extractive industry	3	4.7	4.7
manufacture industry	44	68.8	73.4
energy, gas, water	1	1.6	75.0
construction	6	9.4	84.4
maintenance and installation	4	6.3	90.6
hotels, restaurants	3	4.7	95.3
transport and storage	3	4.7	100.0
Total	64	100.0	

4. FINDINGS AND RESULTS

Like other studies (Cormier *et al.,* 2005; Gibson and O'Donovan, 2007; Guthrie *et al.*, 2008) we excluded from the sample entities which activate in sector with low or no impact on the environment like financial activities, real estate, renting and business activities, education, other work activities, social and personal, information technology, media, mortgage finance, research and development, telecoms. The results obtained are presented and described in Appendix 2 and Table 2.

Table 2. **Descriptive analysis of EnvRep**

	Frequency	Percent	Valid Percent	Cumulative Percent
Minimum .00	5	7.8	7.8	7.8
.33	46	71.9	71.9	79.7
.67	5	7.8	7.8	87.5
Maximum 1.00	8	12.5	12.5	100.0
Total	64	100.0	100.0	
Descriptive characteristics	Mean	Median	Mode	Std. Deviation
	.4145	.3300	.33	.25993

We state that most of the Romanian companies listed on the Bucharest Stock Exchange (71.9%) report only non-financial information regarding environmental objectives, management, policy [*d1*]. Out of 64 companies, only 8 companies report all types of environmental information, while 5 of them do not report any kind of environmental information. The Romanian companies don't report environmental information using national or international guidelines, the main source of environmental information being the annual report. Similar to the period between 2006 and 2009, for the year 2010, the quality and quantity of environmental information reported by Romanian company still suffer from irrelevancy and incompleteness. We consider that Romanian entities cannot be compared with Western companies, as the quality and quantity of environmental information reported by Romanian companies is low.

For analyzing the conformity of the 64 Romanian companies listed at Bucharest Stock Exchange with 2008 Corporate Governance Code we have analyzed the following characteristics of the corporate governance: the size and structure of the Board of Directors, existence of the board committees (audit committee, remuneration committee, and nominalization committee), the practice of separation between the Chairman of the Board and the CEO (Chief Executive Officer). The variables are presented in Appendix 1 and Appendix 3.

The size and structure of the Board of Directors

A larger board size can bring directors with experience that may represent a multitude of values in the board (Buniamin *et al*., 2008). The Bucharest Stock Exchange 2008 Corporate Governance Code recommends that the Board must have sufficient number of members that guarantee the efficiency of monitoring, analyzing, and evaluating the work of directors and the fair treatment of shareholders. For instance, the average number of the Board of Directors in Europe is about 12 (Albert-Roulhac and Breen, 2005). In Table 3, we can see that the average number of Board members is 5, quite small comparative with the European average.

Table 3. **Descriptive Statistics regarding Board size**

	N	Min.	Max.	Mean	Std. Dev.	Variance
Number of Board members	64	3.00	10.00	4.9219	1.61643	2.613

Regarding the structure of the board we have analyzed the percentage of the independent directors in the board out of the total number of board members. The dates were very hard to obtain because of the lack of transparency related to the independence of board members. Independent directors are considering accountability mechanisms because their role is to help ensuring that companies are protecting the interests of stakeholders (Haniffa and Cooke, 2005).

The Bucharest Stock Exchange 2008 Corporate Governance Code (Principle VI, Art. 4) recommends a balance between executive and non-executive members of the Board and a sufficient number of board members must be independent directors. Independent directors are presented by the Code (Principle VII Art. 4) as those that should not have or have recently had, directly or indirectly, any business relationship with the company or persons involved, of such importance to influence the objectivity of their opinions. The results obtained for the 64 sample companies analyzed are shown in Table 4.

Table 4. **Descriptive statistics regarding Board independence**

		Frequency	Percent	Cumulative Percent
Percentage of the board independence	Min .00	29	45.3	45.3
	.14	3	4.7	50.0
	.20	18	28.1	78.1
	.22	1	1.6	79.7
	.33	3	4.7	84.4
	.40	4	6.3	90.6
	.42	1	1.6	92.2
	.43	3	4.7	96.9
	.44	1	1.6	98.4
	Max .60	1	1.6	100.0
	Total	64	100.0	
	Mean			.1497

We can see that 78.1 % of the analyzed Romanian companies have below 20% independence regarding the board members, 98.4 % having the percentage of independence lower than 50%.

Non-executive directors are seen as the check and balance mechanism, in ensuring that companies act in the best interests of owners and other stakeholders (Haniffa and Cooke, 2005). Regarding the balance between executive and non-executive members of the Board, we can see in Table 5 that the average is over 50%, so the balance is ensured.

Table 5. **The balance between executive and non-executive directors**

	N	Min.	Max.	Mean	Std. Dev.	Variance
Percentage of nonexecutive directors in the board	64	.20	.88	.5458	.18010	.032

Existence of Board Committees

Bradbury (1990) considers that the audit committees are monitoring mechanisms that enhance the audit function and McMullen (1996) argued that an audit committee determines good corporate disclosure of information. The Bucharest Stock Exchange

Corporate Governance Code (Principle XIII, Art. 7) recommends that the Board of Directors should adopt strict rules, designed to protect the interests of the company regarding financial reporting, internal control and risk administration. This task should be accomplished by creating an Audit Committee which would examine the efficiency of the financial reporting, internal control and management system and establish and check the independence and performance of the internal and financial auditor. Because of the essential role of the Audit Committee the Code recommends that it should include non-executive directors, the majority of them being independent. The Corporate Governance Code recommends that the board should establish a Remuneration Committee to develop and organize a remuneration policy for directors and executives. Also the Code recommends that a Nomination Committee should be established, in order to evaluate the potential candidates for the position of administrator, based on specific criteria required by the company.

Table 6. **Existence of the Board Committees**

		Frequency	**Percent**
Audit Committee	does not exist	46	71.9
	does exist	18	28.1
Remuneration Committee	does not exist	50	78.1
	does exist	14	21.9
Nomination Committee	does not exist	56	87.5
	does exist	8	12.5
Total		64	100.0

As we can see from the descriptive analyses, most of the companies analyzed (71.9%) don’t have an audit committee, only 14 companies had established remuneration committees and only 8 of them have established nomination committees.

The practice of separation between the Chairman of the Board and the Chief Executive Officer

Chaganti *et al.* (1985) suggest that a separation between the Chief Executive Officer (CEO) and the Chairman of the Board roles is needed to ensure the independence of the board of directors. The ‘‘CEO duality’’ or “dominant personality phenomenon” occurs when the same person is the CEO and the Chairman of the Board and can reduce the effectiveness of the board in monitoring the management (Agrawal and Chadha, 2003; Haniffa and Cooke, 2002). The 2008 Corporate Governance Code recommends the separation between the Chairman of the Board and the Chief Executive Officer. By separating the two functions, the Executive Officer will be able to direct his/her activities to issues related to management, while the Chairman of the Board will be able to direct his/her activities to monitor the Council. The separation between the two functions presents benefits for shareholders and investors. Table 7 shows that most of the Romanian listed companies (60.9 %) don’t use the practice of separation between the Chairman of the Board and the CEO, which is not very good in terms of Board efficiency.

Table 7. The **separation between the Chairman of the Board and CEO**

	Frequency	**Percent**
NO, they are different	39	60.9
YES, it is the same person	25	39.1
Total	64	100.0

According to prior works in our field of research we have formulated the following research hypotheses:

- ✓ *The level of environmental reporting is positively influenced by the size and structure of the Board.* As mentioned before, the structure and the size of the Board are analyzed by three variables: the number of the Board members, the percentage of non-executive directors in the Board, the percentage of independent non-executive directors in the Board.

The OECD principles and the majority of corporate governance codes, respectively, suggest the existence of both executive and non-executive managers within the board, the role thereof being monitoring or decision making. The executive managers are employees of the company with a direct role in its management, while the non-executive managers do not participate directly in managing the company, having an objective and independent monitoring role on how the company is managed.

From the perspective of agency theory (Solomon, 2007: 82), the presence of independent non-executive managers in the board (board of directors) should help reduce the conflicts of interests existing between the shareholders and the company's management, because their role is to independently monitor the company's activity, bringing about an increasing objectivity and independence inside the board, thus leading to the minimization of agency costs. According to the OECD principles (OECD Principles, part VI) the board should be capable to objectively and independently analyze the economic operations performed by the company. For this purpose, the board should ensure a sufficiently large number of independent members able to exercise an independent reasoning in order to solve the potential conflicts of interest. As independent managers should represent the interests of stakeholders, it is to be expected that they have more influence on reporting the environmental performance related information (Haniffa and Cooke, 2005).

Studies suggest various results related to the correspondence between the number or percentage of independent non-executive managers and the level of voluntary reporting. Therefore, Akhtaruddin *et al*. (2009), Donnelly and Mulcahy (2008), Huafang and Jianguo (2007), Kelton and Yang (2008), Chen and Jaggi (2000), Bujaki and McConomy (2002) are all studies reflecting the existence of a positive correlation between the number of independent non-executive managers and the level of reporting, on the basis of empirical approaches, while Barako *et al.* (2006) reflects a negative association between the level of voluntary reporting and the ratio of non-executive managers.

Nevertheless, the literature also introduces a negative perspective related to the existence of independent non-executive managers: in the event of a large board, the non-executive managers represent a powerless, unjustifiable element within the structure. The supporters of this theory believe that the market wherein the company operates has the capacity to determine a company's management to function properly, thus supporting the shareholders' interests (Solomon, 2007).

The literature believes that board size determines the efficiency and efficacy thereof (Xie *et al.,* 2001) because a larger board attracts more experienced individuals. A more efficient board incurs a more efficient reporting system, and a more increased level of voluntary reporting at the same time, environmental reporting included.

Nevertheless, there are studies having proven statistically that there is no relation between the board size and the level of voluntary reporting: Halme and Huse (1997), Cheng and Courtenay (2004). We believe the level of environmental reporting might be correlated with the board size.

So, we have developed the following null hypothesis: *H1: The level of environmental reporting is not influenced by the size and structure of the Board.*

- ✓ *The existence of board committees (Audit Committee, Remuneration Committee, and Nominalization Committee) positively influences the level of environmental information reported by the companies.*

The main purpose of board committees is to monitor the audit process, the auditor's independence, the internal control and accounting system, the nomination and remuneration of the board directors, thus ensuring a continuous communication between the external auditor and the company's board (Rashidah and Fairuzana, 2006). Studies conducted by Ho and Wong (2001), Barako *et al.* (2006), Li *et al.* (2008), O'Sullivan *et al.* (2008), Yuen *et al.* (2009), Al-Shammari and Al-Sultan (2010) have proven that an audit committee and the incurring independence thereof represent a positive influence on the level of reporting within companies. In conclusion, we consider the existence and independence of audit committees as a determining factor with regards to the level of environmental reporting.

So the null hypothesis which was developed is: *H2: The existence of board committees does not influence the level of environmental information reported by the companies.*

- ✓ *The level of environmental reporting is influenced by the practice of separation between the Chief Executive Officer and the Chairman of the Board.*

The dualist role refers to the fact that the executive manager is also the chairman of the board, which makes a single person having two dominant positions, enabling that person to stop the provision of relevant information towards the outside interested parties, including information related to the environmental performance of companies. In the case of separation of powers between two individuals, i.e. the unitary leadership system, the chairman of the board is a different person from the executive manager, which can ensure a more objective monitoring, favoring the reporting of certain information to the disadvantage of the company's management, such as environmental performance information, environmental management information, etc.

The literature shows contrary results with regards to the practice of separation between the executive manager and the chairman of the board and the level of reporting. Ho and Wong (2001) believe there is no significant association between the practice of separation of powers and the level of reporting, while the studies conducted by Gul and Leung (2004) have demonstrated that the executive manager's dual role (executive manager is also the chairman of the board) is associated with lower levels of voluntary reporting. Donnelly and Mulcahy (2008) prove that companies with a non-executive chairman report more information than other companies.

We developed the null hypothesis: *H3: The level of environmental reporting is not influenced by the practice of separation between the Chief Executive Officer and the Chairman of the Board.*

The analyses of the hypothesis formulated above were tested using a multiple linear regression model. We have used *environmental reporting (EnvRep)* as the dependent variable and the corporate governance characteristics (presented in Appendix 1) as independent variables. Also we have used two control variables:

- ✓ Turnover. The intensity of the work carried out represent an essential factor for the environmental reporting quality level. The more intense the activity the entity carries out, the more increased the pollution risk for the entity or the risk of frequent coverage in the media, thus being inclined to provide as much information to users as possible. Pattern (1991) and Milne and Hackston (1996), Cormier and Magnan (2003), Cormier *et al.* (2005), Belkaoui-Riahi (2001), Watson *et al.* (2002) are some of the researchers that have demonstrated in time that there are correlations between the size of the entity and the level of environmental reporting in different samples of entities, in different countries. The size of the entity is expressed by the turnover for 2010.
- ✓ The industry. Halme and Huse (1997), Milne and Patten (2002), Deegan and Blomquist (2006), Guthrie *et al.* (2008) are some of the studies demonstrating that the sector in which the company activates determines the level of environmental reporting.

The regression equation used to explain the level of environmental reporting for the Romanian companies would be as follows.

$$EnvRepD1 = a0 + a1\,\text{IndBoard} + a2\text{NeexBoard} + a3\text{No Board} + a4\text{AuditCommittee} + a5\text{RenCommittee} + a6\text{NomCommittee} + a7\text{CEO\_Chairman} + a8\text{Turnover} + a9\text{ActivitySector}$$

Where,

a_0 – constant;
$a_1 - a_9$ – equation coefficients;
EnvRep – environmental reporting;
IndBord – board independence (number of independent directors divided by the total number of directors);
NeexBoard – balance between executive and non-executives directors (number of non-executive directors divided by the total number of directors);
NoBoard – number of the directors in the Board;
AuditCommittee – existence of the Audit Committee;
RenCommittee – existence of the Remuneration Committee;
NomCommittee – existence of the Nomination Committee;
CEO_Chairman – practice of separation between the Chairman of the Board and Chief Executive Officer;
Turnover – turnover for 2010 expressed in RON;
ActivitySector – industry.

The regression model was analyzed using SPSS, version 17.0 by applying the Stepwise method for determining the variable that could explain the variation of the environmental reporting in the case of Romanian companies. The tables below reflect the correlations between environmental reporting and corporate governance characteristics.

Table 8. **Model Summary (EnvRep)**

M	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
3	.827c	.684	.668	.14966	.035	6.639	1	60	.012	1.517
c. Predictors: (Constant), IndBoard, Turnover, NoBoard										

Table 9. **Anova test (EnvRep)**

Model		Sum of Squares	df	Mean Square	F	Sig.
	Total	4.256	63			
3	Regression	2.912	3	.971	43.341	.000c
	Residual	1.344	60	.022		
	Total	4.256	63			
c. Predictors: Predictors: (Constant), IndBoard, Turnover, NoBoard						

Table 10. **Coefficients of the model**

Model	Unstand Coeff		Stand Coeff	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Toler	VIF
(Constant)	.375	.062		6.094	.000	.252	.498		
IndBoard	1.238	.136	.769	9.117	.000	.966	1.509	.739	1.353
Turnover	3.389E-11	.000	.255	3.214	.002	.000	.000	.836	1.197
NoBoard	-.034	.013	-.209	-2.577	.012	-.060	-.008	.800	1.249

Table 11. **Collinearity Diagnostics (EnvRep)**

M	Dim	Eigen value	Condition Index	Variance Proportions			
				(Constant)	IndBoard	Turnover	NoBoard
3	1	2.812	1.000	.01	.04	.03	.01
	2	.828	1.843	.01	.00	.75	.01
	3	.317	2.979	.04	.89	.20	.02
	4	.044	8.034	.94	.07	.02	.97

Table 12. **Residuals Statistics (EnvRep)**

	Min	Max	Mean	Std. Dev	N
Predicted Value	.1409	1.0903	.4145	.21501	64
Std. Predicted Value	-1.272	3.143	.000	1.000	64
Standard Error of Predicted Value	.020	.133	.033	.017	64
Adjusted Predicted Value	.1234	1.4266	.4175	.23301	64
Residual	-.45903	.31950	.00000	.14606	64
Std. Residual	-3.067	2.135	.000	.976	64
Stud. Residual	-3.097	2.232	-.004	1.010	64
Deleted Residual	-.46814	.34915	-.00293	.16205	64
Stud. Deleted Residual	-3.351	2.311	-.005	1.033	64
Mahal. Distance	.107	48.682	2.953	6.445	64
Cook's Distance	.000	1.601	.037	.200	64
Centered Leverage Value	.002	.773	.047	.102	64

Analyzing the tables above (R square 0.684, Durbin-Watson 1.517) we observe that the board size and structure expressed by the variables board independence (percentage of the independent directors) and board size (number of the members in the board) and the turnover explains 68.4% from environmental reporting variation within Romanian companies listed at Bucharest Stock Exchange. F-ration is 43.341 which is significant al $p<0.001$ (Sig. is less than 0.001). The co linearity diagrams, the VIF coefficient and the residual statistics confirm the lack of co linearity between independent variables and sustain the model.

So, we could reject only the first null hypothesis (the level of environmental reporting is influenced by the size and structure of the board, the independence of the board and board size being the independent variables), the last two null hypothesis being accepted. So the level of environmental reporting is not influenced by the practice of separation between the Chief Executive Officer and the Chairman of the Board and the existence of board committees does not influence the level of environmental information reported by the companies.

CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

From the point of view of the Romanian companies the presence of independent non-executive managers in the board helps reduce the conflict of interests between the stakeholders and the company's management. The independent directors monitor the company's activity, bringing about increasing transparency, independence inside the board, thus leading to the minimization of agency costs. For assuring a high transparency level of environmental performance within a company, the board should ensure a sufficient number of independent members able to exercise an independent reasoning in order to solve potential conflicts of interests. The independent directors represent the interests of the stakeholders and have more influence on reporting information related to environmental aspects.

We have found a negative correlation between the size of the board and environmental reporting, showing that large boards are not very effective because such boards should have a large number of non-executive independent directors in order to ensure the objectivity and transparency of information. Romanian companies cannot ensure a sufficient ratio of independence within large boards and therefore the transparency of environmental performance is low.

Environmental reporting is correlated with the intensity of the work carried out by the company, because the more intense the activity the entity carries out, the higher the risk for the entity to pollute or to have frequent coverage in the media, thus being inclined to provide users with as much information as possible.

Therefore, we can consider that implementing good corporate governance practices by introducing a sufficient level of independent directors that can ensure transparency and objectivity can solve the agency's theory conflict and determine companies to report more voluntary information regarding environmental performance and other aspects. Our theory regarding good corporate governance able to ensure adequate environmental performance and reporting can be partially validated for this sample of companies and will be tested for other samples as well.

The paper is a relevant research paper that could contribute to increasing the readers' awareness in this field by providing with the current state of environmental reporting practices in Romania. The findings can influence the investors' community in their decision making process and can be a challenge for the practitioners to become more environmentally responsible in the future. Also, the present study provides a significant evidence, for public regulators, about the necessity to revise the existing regulations and perhaps to introduce specific standards for environmental accounting.

The results of this study may be interpreted depending on several limitations. Firstly, we have considered data only for a one year period of analysis. It would be interesting in the future to conduct a longitudinal analysis on a yearly basis to highlight the trend of environmental reporting and the impact of corporate governance on environmental reporting practices. Secondly, the study utilized only a few corporate governance variables in order to analyze the environmental reporting practices in Romania. Further studies could consider other variables such as corporate governance system or frequency of audit/remuneration committee meetings for example. This will be the aim of our future research.

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Appendix 1. **Description of the independent variables**

Independent Variables	***Definition of variables***	***Quantification system***
(IndBord) Board independence	Percentage of independent non-executive directors within the board	Number of independent non-executive directors within the board divided by the total number of the board members
(NeexBord)Board non-executives	The balance between non-executive directors and executive directors within the board	Number of non-executive directors within the board divided by the total number of the board members
(NoBoard) Board size	Total number of directors within the board	Total number of board members
(AuditCommittee) The existence of audit committee	The existence of the audit committee within the corporate governance structure	We have marked with 1 if the company has an audit committee or 0 if there is no audit committee
(RenCommittee) The existence of remuneration committee	The existence of the remuneration committee within the corporate governance structure	We have marked with 1 if the company has remuneration committee or with 0 if there is no remuneration committee
(NomCommittee) The existence of nomination committee	The existence of the nomination committee within the corporate governance structure	We have marked with 1 if the company has nomination committee or with 0 if there is no nomination committee
(CEO_Chairman) The practice of separation between the Chairman of the Board and Chief Executive Officer	Practice of separation between executive manager and chairman of the board	We have marked with 1 if the executive manager is also the chairman of the board or with 0 if the executive manager and the chairman of the board are different people
Turnover	Company size	Turnover expressed in RON
Industry wherein operating (control variable)	Classification of industries	We have marked with 1 if the company belongs to an industry with significant environmental impact and with 0 if the company belongs to an industry of less environmental impact.

Appendix 2. **EnvRep Disclosure Index (DI)**

No.	Symbol	Company mane	d1	d2	d3	DI
1	ARS	AEROSTAR S.A.	1	0	0	0,33
2	ALR	ALRO S.A.	1	0	0	0,33
3	ALT	ALTUR S.A.	0	0	0	0,00
4	ALU	ALUMIL ROM INDUSTRY S.A.	0	0	0	0,00
5	AMO	AMONIL S.A.	1	0	0	0,33
6	ATB	ANTIBIOTICE S.A.	1	1	1	1,00
7	ARM	ARMATURA S.A.	1	0	0	0,33
8	AZO	AZOMURES S.A.	1	1	1	1,00
9	BRM	BERMAS S.A.	1	0	0	0,33
10	BIO	BIOFARM S.A.	1	0	0	0,33
11	SPCU	BOROMIR PROD SA BUZAU (SPICUL)	0	0	0	0,00
12	TEL	C.N.T.E.E. TRANSELECTRICA	1	1	1	1,00
13	CBC	CARBOCHIM S.A.	1	0	0	0,33
14	BCM	CASA DE BUCOVINA-CLUB DE MUNTE	1	0	0	0,33
15	CEON	CEMACON SA ZALAU	1	0	0	0,33
16	CMCM	COMCM SA CONSTANTA	0	0	0	0,00
17	CMF	COMELF S.A.	1	0	0	0,33
18	CMP	COMPA S. A.	1	0	1	0,67
19	ENP	COMPANIA ENERGOPETROL S.A.	1	0	0	0,33
20	COFI	CONCEFA SA SIBIU	1	0	0	0,33
21	COMI	CONDMAG S.A.	1	0	1	0,67
22	CGC	CONTOR GROUP S.A. Arad	1	0	0	0,33
23	DAFR	DAFORA SA ind	1	0	0	0,33
24	ELJ	ELECTROAPARATAJ S.A.	1	0	0	0,33
25	ELGS	ELECTROARGES SA CURTEA DE ARGES	1	0	0	0,33
26	ELMA	ELECTROMAGNETICA SA BUCURESTI	1	0	0	0,33
27	EPT	ELECTROPUTERE S.A.	1	0	0	0,33
28	RMAH	FARMACEUTICA REMEDIA SA DEVA	1	0	0	0,33
29	ECT	GRUPUL INDUSTRIAL ELECTROCONTACT S.A.	1	0	0	0,33
30	IMP	IMPACT DEVELOPER & CONTRACTOR S.A.	1	0	1	0,67
31	MECF	MECANICA CEAHLAU	1	0	0	0,33
32	COS	MECHEL TARGOVISTE S.A.	1	0	0	0,33
33	MEF	MEFIN S.A.	1	0	0	0,33
34	MJM	MJ MAILLIS ROMANIA S.A.	1	0	0	0,33
35	OIL	OIL TERMINAL S.A.	1	0	0	0,33
36	OLT	OLTCHIM S.A. RM. VALCEA	1	1	1	1,00
37	SNP	OMV PETROM S.A.	1	1	1	1,00
38	PEI	PETROLEXPORTIMPORT S.A.	0	0	0	0,00
39	PREH	PREFAB SA BUCURESTI	1	0	0	0,33

40	PPL	PRODPLAST S.A.	1	0	0	0,33
41	RTRA	RETRASIB SA SIBIU	1	0	0	0,33
42	ROCE	ROMCARBON SA BUZAU	1	1	1	1,00
43	RRC	ROMPETROL RAFINARE S.A.	1	1	1	1,00
44	PTR	ROMPETROL WELL SERVICES S.A.	1	0	0	0,33
45	RPH	ROPHARMA SA BRASOV	1	0	0	0,33
46	TGN	S.N.T.G.N. TRANSGAZ S.A.	1	1	1	1,00
47	SNO	SANTIERUL NAVAL ORSOVA S.A.	1	0	0	0,33
48	COTR	SC TRANSILVANIA CONSTRUCTII SA	1	0	0	0,33
49	STZ	SINTEZA S.A.	1	0	0	0,33
50	SRT	SIRETUL PASCANI S.A.	1	0	0	0,33
51	SOCP	SOCEP S.A.	1	0	0	0,33
52	ART	T.M.K. - ARTROM S.A.	1	1	0	0,67
53	TRP	TERAPLAST SA	1	0	0	0,33
54	MPN	TITAN S.A.	1	0	0	0,33
55	TBM	TURBOMECANICA S.A.	1	0	0	0,33
56	TUFE	TURISM FELIX S.A. BAILE FELIX	1	0	0	0,33
57	EFO	TURISM, HOTELURI, RESTAURANTE MAREA NEAGRA	1	0	0	0,33
58	UAM	UAMT S.A.	1	0	0	0,33
59	UCM	UCM RESITA S.A.	1	0	0	0,33
60	VESY	VES SA	1	0	0	0,33
61	APC	vostalpine VAE APCAROM SA	1	0	0	0,33
62	VNC	VRANCART SA	1	0	0	0,33
63	SCD	ZENTIVA S.A.	1	0	1	0,67
64	ZIM	ZIMTUB S.A.	1	0	0	0,33

Appendix 3. **Values of variables**

Entity	EnvRep	Turnover	Sector	CEO_Chairman	NoBoard	IndBoard	NeexBoard	AuditCommittee	RenCommittee	NomCommittee
ARS	0,33	158289213	4	1	7	0.2	0.57	1	0	0
ALR	0,33	1812185954	4	0	5	0.2	0.4	0	0	0
ALT	0	115652749	4	0	5	0	0.8	0	0	0
ALU	0	67789995	7	1	5	0	0.6	0	0	0
AMO	0,33	111439112	4	1	5	0	0.6	0	0	0
ATB	1	243626063	4	1	7	0.43	0.71	1	1	1
ARM	0,33	17571582	4	1	5	0	0.4	0	0	0
AZO	1	1202016666	4	0	7	0.43	0,71	0	0	0
BRM	0,33	24125360	4	1	3	0	0,33	0	0	0
BIO	0,33	82294885	4	1	5	0,2	0,6	0	1	0
SPCU	0	126690959	4	1	5	0,2	0,4	1	1	0
TEL	1	2545724630	5	1	7	0,43	0,71	1	1	0
CBC	0,33	28274180	4	1	7	0	0,71	0	0	0
BCM	0,33	4805673	8	0	5	0,2	0,6	0	0	0
CEON	0,33	22133000	4	0	5	0,2	0,6	1	1	0
CMCM	0	29979000	6	0	5	0	0,6	0	0	0
CMF	0,33	109792439	4	0	5	0,2	0,8	0	0	0
CMP	0,67	413637752	4	1	5	0,4	0,4	1	1	0
ENP	0,33	20361786	6	1	3	0	0,33	0	0	0
COFI	0,33	111760311	6	0	5	0	0,6	0	0	0
COMI	0,67	198452126	6	0	5	0,4	0,4	1	1	1
CGC	0,33	34877580	4	1	3	0	0,33	0	0	0
DAFR	0,33	194197402	3	1	5	0,2	0,2	1	1	0
ELJ	0,33	23276471	4	0	3	0	0,33	0	0	0
ELGS	0,33	21562337	4	0	3	0	0,33	0	0	0
ELMA	0,33	474017495	4	1	9	0,22	0,44	0	0	0
EPT	0,33	291780238	4	0	5	0	0,8	0	0	0
RMAH	0,33	182561836	7	0	5	0,2	0,2	0	0	0
ECT	0,33	7878002	4	0	5	0	0,6	0	0	0
IMP	0,67	34288805	6	1	3	0,33	0,33	0	0	0
MECF	0,33	22201451	4	0	5	0,2	0,8	1	1	1
COS	0,33	851698784	4	0	5	0,2	0,6	0	0	0
MEF	0,33	16846508	4	0	3	0	0,33	0	0	0
MJM	0,33	30435130	4	0	5	0	0,6	0	0	0
OIL	0,33	132259761	9	1	10	0,2	0,8	1	1	1
OLT	1	1309544085	4	1	5	0,6	0,6	0	0	0
SNP	1	13953092655	3	0	9	0,44	0,88	1	0	0
PEI	0	360732003	7	0	3	0	0,33	0	0	0
PREH	0,33	71520050	4	0	5	0,2	0,8	1	1	1
PPL	0,33	48309970	4	0	5	0,2	0,2	0	0	0
RTRA	0,33	47507537	4	0	3	0	0,67	0	0	0
ROCE	1	112964960	4	0	3	0,33	0,67	0	0	0
RRC	1	7099249720	4	0	3	0,33	0,33	0	0	0
PTR	0,33	79196025	3	0	5	0,2	0,6	0	0	0
RPH	0,33	351997844	7	1	7	0,14	0,57	1	1	1
TGN	1	1312997932	9	0	5	0,4	0,6	1	1	1
SNO	0,33	69300063	4	0	5	0	0,8	0	0	0
COTR	0,33	35543933	6	0	5	0	0,8	0	0	0
STZ	0,33	9374393	4	1	5	0,2	0,6	0	0	0
SRT	0,33	8136554	4	1	3	0	0,33	0	0	0
SOCP	0,33	45952768	9	1	5	0,2	0,6	0	0	0
ART	0,67	665822119	4	0	7	0,42	0,71	0	0	0
TRP	0,33	212747210	4	0	7	0,14	0,57	0	0	0
MPN	0,33	260114259	4	0	5	0	0,6	1	0	0
TBM	0,33	53178629	4	1	5	0,2	0,6	1	1	1
TUFE	0,33	48499100	8	0	3	0	0,67	0	0	0
EFO	0,33	21154175	8	0	3	0	0,67	0	0	0
UAM	0,33	57204639	4	0	3	0	0,33	0	0	0
UCM	0,33	167697604	4	1	3	0	0,33	0	0	0
VESY	0,33	44544280	4	0	7	0,14	0,71	1	0	0
APC	0,33	74039982	4	0	5	0	0,4	0	0	0
VNC	0,33	152746206	4	1	3	0	0,33	1	0	0
SCD	0,67	259644377	4	0	5	0,4	0,4	0	0	0
ZIM	0,33	34131821	4	0	3	0	0,67	0	0	0