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Article

Transparency of Corporate Governance through Public Information: Evidence from Spain

Asier Garayeta ¹, Javier Corral-Lage ¹, Eduardo Trigo ² and J. Iñaki De la Peña ^{3,*}

¹ Financial Economics I Department, University of the Basque Country (UPV/EHU)

² Finance and Accounting Department, University of Malaga (UMa))

³ Financial Economics I Department, University of the Basque Country (UPV/EHU)

* Correspondence: jinaki.delapena@ehu.eus;

Abstract: The measurement of corporate governance takes into account not only the profitability and solvency of the companies, but also the degree of information provided: its transparency. Corporate governance has become particularly relevant in recent years and one of the main problems is how to measure it properly. It is usually measured privately, either through audits or private verification companies. However, the public and mandatory information issued by these companies is rarely valued. This is where this research is new. The aim of this article is to develop a CGRI (Corporate Governance Ratio Index) to evaluate the transparency of corporate governance of companies using public and mandatory information. For this purpose, it is applicable to companies listed on the Spanish continuous market. This paper applies the index to the 35 most relevant companies in the Spanish continuous market. Subsequently, the paper assesses the interrelation of the index with the main factors of corporate governance such as remuneration, monitoring and governance structure. By using a publicly available index, this study contributes to the transparency and accessibility of CG assessment, providing valuable insights into the effective corporate governance practices and thus the index helps to identify areas for improvement in the company itself and to observe the actions of its competitors.

Keywords: Corporate governance; Corporate governance management; board of directors; board remuneration; board of directors' remuneration

1. Introduction

Corporate governance (CG) is a combination of policies, laws and instruments involved in the management and governance of a company (Solomon, 2020). It is a set of rules that ensures a relationship between a company and its shareholders is transparent and equitable (Fung, 2014; Solikhah and Maulina, 2021). It has a more direct impact on both employees and shareholders; shareholders perceive it through dividends and employees in their working conditions (Buallay et al., 2017). In this way, good CG makes companies attractive to future investors and increases market confidence (Guo and Kga, 2012) and can lead to better management as well as increase the transparency of the company (Forte et al., 2020).

The predominant theoretical framework in CG studies (Iskander and Chamlou, 2000; Beiner et al., 2006; Adams et al., 2010; Pande and Ansari, 2014) is agency theory (Jensen and Meckling, 1976). Its popularity is due to two characteristics (Daily et al., 2003).

- i) The first it reduces decision making to two groups –management and shareholders – with clearly defined divergent interests (Daily et al., 2003).
- ii) The second assumes that human beings are intrinsically selfish (Okibe, 2020) and therefore every rational individual pursues their own interests.

In recent decades, agency theory has studied these conflicts. Indeed, these are closely linked to the good governance of an organization and its efficient functioning (Eling and Marek, 2014). Most studies indicate that the mechanisms employed in CG limit the self-interest of managers to align with the interests of shareholders (Libson, 2020). In most companies, this internal mechanism is a properly structured board of directors (Ekanayake, 2018) and a pay structure that orients a manager toward

shareholder interests (Kultys, 2016). Thus, corporate management can improve as long as the shareholders are oriented towards this improvement process.

Investor risk is reduced if internal CG mechanisms are correctly applied, thereby, increasing investment capital and improving corporate performance. This impact has been widely discussed, using different measures to analyse its effect on company performance, which can be operational-, market- or financial-based (Buallay et al., 2017). When analysing CG components, most studies focus on return on equity (ROE) as a financial measure and return on assets (ROA) as an operational measure or they analyse the components from a risk perspective, dividing them into financial, product and investment risk (Eling and Marek, 2014).

The aim of this paper is to establish an index based on public information, which determines the factors on which adequate CG depends. This paper develops the index through mandatory and transparent public reporting, so that it becomes applicable in other markets and countries. To demonstrate its applicability, this paper takes the most relevant companies in the Spanish continuous market that make up the IBEX35 stock market index (Iberian index). This paper evaluates the factors that positively impact the CG of these companies. To do so, it uses a large panel of data (64 criteria of 35 companies over two years) that allows the index to be extended to various productive sectors of the Spanish market.

Previous studies have focused on analysing the variables that affect CG through private indices. However, this paper analyses whether or not the variables referenced in the literature do or do not influence good corporate governance through an index based on the Annual Corporate Governance Report (ACGR). This report will be mandatory and required by the CNMV supervisor as well as by its European counterparts and will provide non-financial accounting information, providing value and differentiation to companies. This report indicates the degree of compliance with the recommendations given by the European Parliament and the European Council on good corporate governance. It is the basis for obtaining the necessary data to create the Corporate Governance Rating Index (CGRI). This index includes the data on Spanish companies in the continuous market that are obliged to report and published annually by the CNMV. Each company must respond to 64 criteria with qualitative answers. This paper develops a procedure to convert them into quantifiable data to create this index.

To address this objective, the paper is as follows. The second section reviews the indices that measure CG. The establishment of an index based on public information and the key factors that the literature considers relevant for good CG is located. Next, the paper presents the methodology of the research, determining for the Spanish case the variables that can help to measure IBEX35 companies' CG, and the hypotheses are developed. The fourth section explains the modelling process as well as how each variable is measured. The fifth section discusses the results obtained through the empirical study and it finishes with the most relevant conclusions according to the data, tables and references used.

2. Index for Measuring Corporate Governance: A Literature Review

There is a substantial literature on finance and accounting, beginning with Gompers, Ishii and Metrick (2003). It develops various governance metrics from publicly available information based on large samples of U.S. and international companies and assesses the associations of good governance with various outcome variables. Today, transparency of information is one of the criteria that determine good governance practices. Effective governance depends on transparency (Fung, 2014; Solikhah and Maulina, 2021), which entails providing shareholders with valuable information (Mechelli and Cimini, 2020) and instilling confidence in the companies they invest in (La Rosa et al., 2019; Shahid and Abbas, 2019). Moreover, transparency fosters increased investment in companies (Cai et al., 2019) and bolsters corporate reputation (Orzes et al., 2020) by conferring legitimacy in the eyes of stakeholders and society (Rossignoli et al., 2021).

In addition, effective governance processes are built upon principles of accountability (Ramaswamy et al., 2008; Solomon, 2020) and a steadfast commitment to long-term objectives (Salvioni et al., 2018). This framework fosters heightened performance (Todorovic, 2013; Lu and

Wang, 2021), promotes growth (Tandukar, 2019), and ensures business stability (Wood and Small, 2019).

Optimal and transparent corporate governance is crucial not only to increase competitiveness (Davies and Schlitzer, 2008; Berinde, 2018; Laksito and Ratmono, 2021) and improve business efficiency, but also to safeguard the rights of shareholders and third parties. According to the European Union in 2014, ensuring optimal corporate governance is primarily the responsibility of the company itself (Rajoria, 2020). To uphold this, there have been established several standards at both national and EU levels to ensure compliance with essential criteria for good corporate governance. Additionally, various ratings are available to evaluate an entity’s corporate governance practices, as depicted in Table 1

Table 1. Private ratings for assessing corporate governance.

Authors	Index	Explanation
Khanchel (2007)	Standard and Poor’s	List of 80-100 factors. Grouped into three categories: ownership structure and investor relations, financial transparency and disclosure, and board and management structure and processes.
Bauer et al. (2004)	Eurotop 300 del Financial Times Stock Exchange (FTSE)	Based on some 300 different criteria. These criteria can be grouped into four broader categories: shareholder rights and obligations; range of takeover defences; CG disclosure and board structure and functioning.
Klapper y Love (2004)	Credit Lyonnais Securities Asia-CLSA Ltd.	The ranking takes into account seven categories: discipline, transparency, independence, accountability, responsibility, impartiality and social conscience. Each category has a weight of 0.15, except for the last one, which has a weight of 0.10.
Brown y Caylor (2006)	Shareholder Services	The elements divided into four equally weighted categories (0.25): shareholder rights, board of directors, external directors, and disclosure and transparency.

Source: Authors.

In recent years, many European Union (EU) countries, including Spain, have adopted codes of good practice aimed at providing guidelines for listed companies to enhance the overall quality of corporate governance (CG). Spain has actively participated in this movement, achieving significant advancements in the field of good corporate governance. The Spanish government offers recommendations following the internationally recognized “comply or explain” principle to categorize each company’s specific CG within the corporate governance framework (CNMV, 2021). This principle requires companies to either comply with CGRI (Corporate Governance Report and Recommendations) requirements or provide explanations for non-compliance. While full compliance can signal positively to both the market (Solikhah and Maulina, 2021) and society (Bae et al., 2018), it might not always be the most suitable approach for a company from a CG standpoint (Rose, 2016). In certain instances, choosing not to implement a provision can enable more effective company management (Outa and Waweru, 2016; Bunget et al., 2020).

The utilization of publicly accessible good governance codes in conjunction with the “comply or explain” principle represents a valuable system for accomplishing key objectives of corporate governance. This approach is consistently implemented not only in major European Union nations but also in other developed countries (Beiner et al., 2006; Arora and Bodhanwala, 2018; Kahveci and Wolfs, 2019), underscoring its adaptability and potential to serve as a benchmark for best practices in corporate governance.

Moreover, the European Union explicitly endorses the applicability of this principle, as reaffirmed in the EU Green Paper on corporate governance of listed companies (European Commission, 2011). Except for the research by Corral et al., (2024), previous studies incorporating CG indices (Beiner et al., 2006; Arora and Bodhanwala, 2018; Kahveci and Wolfs, 2019) have typically assessed CG aspects independently. A notable contribution of this paper is the approach of considering these facets collectively.

Therefore, this paper develops the Index of Corporate Governance Reports and Recommendations (IGRC) used in this study from the recommendations given by public institutions, specifically the CNMV (2018). The 64 recommendations identified can be classified into three main blocks (Table 2):

Table 2. Categories of corporate governance management in CNMV.

General Aspects	General Meeting of Shareholders	Board
Statutory limitations	Transparency	Responsibility
Company listing	Attendance and participation	Structure and composition
Monitoring of recommendations	Attendance fees policy	Functioning and organization of the board
Shareholders’ and block shareholders’ meetings		Remuneration of directors
Share issues		Sustainability, environmental, and social aspects

Source: Authors through CNMV, 2018.

The analysis assumes significance in the wake of recent financial scandals and crises, which have underscored the connection between CG and the design of remuneration systems, oversight mechanisms, and the structure of corporate boards.

The founding assumption of corporate governance theory postulates that mechanisms to match the interests of investors with the interests of management can exist. These mechanisms commonly entail the methods of compensating board members (referred to as internal incentives), the tools accessible to shareholders for monitoring board behavior, and the ownership structure (Jensen and Meckling, 1976).

Therefore, the proposed model elaborates on the impact of compensation (board remuneration), oversight (number of independent directors, number of board meetings, and number of female directors), and ownership structure (number of block shareholders and number of proprietary members) on a CG basis.

All three components play crucial roles in mitigating agency conflicts between investors and executives, which stem from the segregation of decision-making and decision control (Jensen and Meckling, 1976; Fama and Jensen, 1983; Chen, Steiner and Whyte, 1998; Eling and Marek, 2014). Moreover, the literature consistently identifies these factors as significant in achieving optimal governance, thus forming the basis of our hypotheses.

2.1. Compensation

Higher salaries are correlate with less risky decision-making and thus better corporate governance (Iatridis, 2018). Thus, compensation systems serve to align interests between investors and executives, with the level of executive remuneration compared to the market average being a critical factor. In a free market scenario where managers aim to maximize their utility, they are inclined to work for firms offering the highest utility, implying a positive correlation between pay levels and corporate governance (Grace, 2004; Milidonis and Stathopoulos, 2011).

However, the remuneration of directors and senior management may conflict with the interests of other stakeholders (Werner et al., 2005). Therefore, it must be controlled (Loderer and Martin, 1997). For directors, this entails imposing limits on remuneration and restricting share distribution (Filatotchev and Allcock 2010). In this sense, higher levels of corporate control appear to be associated with lower managerial compensation, and less linked to performance outcomes (Baixauli-Soler and Sánchez-Marín, 2015). In addition, executive cash compensation has a negative association with corporate governance, suggesting that this form of remuneration is not advisable (Iatridis, 2018). Moreover, the responsibilities carried out by governing board members align with the required qualifications and remuneration (Deschenes et al., 2015; Jacques et al., 2023).

The preceding considerations lead to the following hypothesis:

H1. *There is no relationship between adequate GC and compensation (COM).*

2.2. Monitoring

Board supervision is widely recognised as a crucial mechanism for corporate governance and shareholder influence (Michelon and Parbonetti, 2012). Numerous studies have investigated the importance of board independence for effective corporate governance oversight (Agrawal and Knoeber, 1996). There are even studies that interrelate board size with effective board monitoring and thus improved management (Kao et al., 2019) and adaptation to the business environment (Pucheta-Martinez and Gallego-Álvarez, 2019). Furthermore, the inclusion of young directors may challenge monitoring if there is a wide range of board members' experience and destabilise management (Abu Qadam and Suwaidam, 2019).

On the other hand, it can affect the profitability of the company, since the contribution of independent members to effective supervision can improve firm performance (Chijoke-Mgbane et al., 2020). These members will ensure a more transparent management and provide objectivity to the information reported by the company (Forte et al., 2020). In many instances, a positive correlation has been found between more stringent oversight of company management and governance, particularly with boards comprised mostly of independent members (Agrawal and Knoeber, 1996), as well as more efficient meetings (Chen et al., 2015). Furthermore, the inclusion of female board members has been shown to influence oversight (Adamns and Ferreira, 2009), with their presence contributing to improved governance (Majumder et al., 2017). The preceding considerations lead to the following hypothesis:

H2. *There is no positive relationship between adequate CG and its monitoring.*

2.3. Structure of Boards

Previous research has indicated a positive correlation between blockholders and governance, particularly in terms of promoting efficiency (Huang and Wang, 2015). However, other studies suggest that concentrated control of a company's capital by a few individuals can lead to conflicts with management and impede good governance practices (Eling and Marek, 2014). Some authors have criticized proprietary directors for focusing solely on personal enrichment through significant ownership stakes in the company's capital, often at the expense of prioritizing the development of good governance within the organization (Douma et al., 2006; Grosman et al., 2019).

Therefore, it is imperative to verify these assertions.

H3. *There is no positive relationship between adequate CG and governance structure.*

3. Materials and Methods

3.1. Materials

In Spain, the requirement to disclose non-financial information came into force in 2017 and implemented in 2018. Consequently, the IAGC provides an analysis of the significance of good corporate governance (CG) practices in enhancing economic efficiency and bolstering investor confidence. It offers an overview of the evolution of CG regulations at the EU and international levels, a summary of key regulatory developments, and incorporates recommendations from codes of good governance, along with a description of CG guidelines for listed companies.

The database initially focuses on IBEX35-listed companies for the years 2018 and 2019. In order to mitigate the impact of the COVID-19 pandemic on the variables considered, data for the years 2020 and 2021 have not taken into account. There are four companies excluded from the analysis because they are not subject to Spanish law or because they contain biases or errors in their data. The data sources utilized for the sample include Annual Corporate Governance Reports (ACGRs) and annual reports from the CNMV. Using the 64 variables determined by the IAGC, the CGRI is obtained (Table 3) for a two-year period for the 31 selected companies listed on the IBEX35; that is totals 3,968 data.

Table 3. Descriptive statistics of the CGRI.

	N	Minimum	Maximum	Media	Deviation
CGRI	62	,76171875	,97656250	,9175907258	,05021261905

Source: Authors.

This research also uses panel data with 558 observations from the companies’ accounting inform (2 years for 31 companies/years for nine variables/company) standardised in order to eliminate the time effect. These data come from public information from the CNMV. In order to carry out the study, the research transforms into variables. Thus, there are 4526 data used.

The paper uses a multiple linear regression to test the indicated hypotheses. In this way, the interaction of the variables is analysed, which determines the relationship of the three defined blocks as far as CG is concerned.

The 64 criteria established for the CGRI are the basis for measuring CG. Therefore, each recommendation has a specific weighting, in order to obtain qualitative corporate governance results, as the reports provide qualitative information. Based on the practices established by the CNMV, the research uses the following criteria for data transformation,

- a) 1 if this recommendation is explained or fulfilled;
- b) 0.75 if not applicable*;
- c) 0.5 if partially compliant; and
- d) 0 if is not compliant

*in the case of non-application and no concrete and concise explanation of the same, based on the good practice guidance for applying the comply-or-explain principle that was adopted on 15 July 2019 by CNMV.

3.2. Modelling the Corporate Governance

Rather than concentrating solely on three variables—remuneration, monitoring, and governance structure—the model has been expanded to include a broader array of variables. This enhancement involves calculating both the dependent and explanatory variables in a more comprehensive manner.

3.2.1. Executive Compensation or Remuneration (COM) (V_i) (Loderer and Martin, 1997; Filatotchev and Allcock 2010)

The executive compensation or remuneration includes salaries, cash, and stock-based compensation. The total is given by the amount paid by the company to its executives, regardless of

the number of directors (executive compensation). Similarly, total compensation per board member is calculated on a logarithmic basis.

3.2.2. Monitoring

Monitoring by the board of directors is pivotal for corporate governance, given that the board serves as the primary decision-making entity of the company. Effective board monitoring plays a crucial role in ensuring that decisions are made fairly and equitably, thereby safeguarding the interests of all shareholders. Torchia et al. (2015) investigated the correlation between board monitoring and the standard of corporate governance in Italian companies. Their study revealed a positive association between board oversight and the quality of corporate governance.

Board monitoring is a variable that the literature typically measures through

- Number of council meetings throughout the year (Vafeas, 1999; Laksmana, 2008; Suteja et al. 2017; Ji et al. 2020). (**NRC**) (V_2)
- Ratio of independent board members: the percentage that the number of independent board members represents of the total number of board members. (**IND**) (V_3) (Eling and Marek, 2014)
- Ratio of executive board members (Yermack, 1996; Eisenberg et al., 1998; Huang and Wang, 2015): percentage of executives belonging to a company who are part of the top management. (**EJ**) (V_4).
- Ratio of female directors: percentage of the number of women in the total number of board members. (**NCA**) (V_5).

3.2.3. Governance Structure

Management involvement in ownership serves to align the interests of management with those of shareholders, fostering a sense of shared objectives. Additionally, management can validate their decisions through the support of senior management, enhancing their legitimacy. However, in instances of highly concentrated company ownership, management may face increased scrutiny from shareholders. This heightened oversight can constrain management's decision-making power and influence the formulation of policies and strategies, as shareholders closely monitor management's actions and decisions.

Previous research has indicated a positive correlation between blockholders (**ADV**) (V_6) and corporate governance, particularly in terms of enhancing efficiency (Huang and Wang, 2015). However, it is worth noting that an increase in the number of blockholders may lead to a larger pool of investors, potentially resulting in a lack of diversification in the company's portfolio (Eling and Marek, 2014). Conversely, some authors (Douma et al., 2006; Grosman et al., 2019) have criticized blockholders for prioritizing profits for select shareholders, raising concerns about potential conflicts of interest.

The variables associated with blockholders enable the analysis of the number of significant company shareholders (Edmans and Holderness, 2017). In Spain, individuals or entities holding 5% or more of a company's shares have the potential to influence company decision-making (**DOM**) (V_7). Consequently, the analysis involves examining the proportions of shareholders with voting rights and the percentage of proprietary board members, as the latter may exert external influence on the company.

3.2.4. Control Variables

Finally, based on Beiner et al. (2006), two control variables are included as well as descriptive statistics for all variables (Table 4):

1. The CNMV (Comisión Nacional del Mercado de Valores/National Stock Market Commission), **SECTOR** (V_8), serves as a controlling variable to assess which sectors yield the most favorable calculated corporate governance (CG) outcomes. For instance, it would be insightful to examine how companies in the service sector perform, considering their potential impact on other sectors. Each sector possesses unique characteristics, and it is valuable to investigate whether certain

variables exert a more significant effect in specific sectors than in others. Thus, the research uses the CNMV's sector classification (Table 4) to facilitate this analysis.

2. The variable Company size, **SIZE** (V_9), is included as a control variable due to the different management practices observed in larger companies (Eling and Marek, 2014). The research defines this variable, commonly used in governance studies, as the logarithm of total assets. Compared to smaller companies, larger companies are often subject to greater scrutiny and analysis, which influences their governance practices (Eling and Marek, 2014). Therefore, incorporating company size as a control variable allows for a more accurate examination of the impact of other governance variables on company behavior and performance.

Table 4. Descriptive Statistics for the variables used in the analysis.

	CGRI	COM	NRC	IND	EJ	NCA	ADV	DOM	SIZE
Mean	0.91	15.80	11.38	50.57	16.76	0.24	31.46	24.22	23.74
Maximum	0.98	17.95	18.00	71.43	40.00	0.43	72.29	69.23	28.05
Minimum	0.76	13.40	5.00	15.38	5.56	0.00	0.00	0.00	18.64
Standard Dev.	0.06	1.04	3.09	11.82	8.41	0.09	22.60	17.37	2.08

Source: Authors.

3.3. Empirical Model

The use of the statistical technique of multiple linear regression makes it possible to generate a linear model in which the value of the dependent variable (CGRI) is determined from a set of independent variables or predictors (V_h)

$$CGRI = \alpha + \sum_{h=1}^9 \beta_h \cdot V_h + \varepsilon \quad (1)$$

Where

α : Constant value. It is the intercept of the regression model.

β_h : Linear regression coefficient. Represents the partial relationship of the h -th explanatory variable with the dependent variable. It is the average effect of a one-unit increase in the predictor variable V_h on the dependent variable CGRI; all other variables remain constant.

ε : It is the residual or error, i.e., the difference between an observed value and a value estimated by the linear model.

To identify all explanatory variables V_h that explain the relationship and degree of association with the dependent variable CGRI without any of them being a linear combination of the remaining variables, robust regression techniques such as iteratively reweighted least squares (Marx, 1996) can be employed. This method assigns weights to each observation based on whether they meet the assumptions underlying standard multiple regression.

The application of this model is justified by its widespread use in the literature, either for predicting the value of a dependent variable or for assessing the influence of each predictor on it. Consequently, this approach enables the analysis of the degree of influence of each variable on the CGRI of Spanish IBEX35-listed companies during 2018 and 2019.

4. IBEX35: Modelling Results

Based on the stepwise regression procedure and the goodness of fit of the data to the multiple linear regression model, the research proposes a model, featuring the highest multiple correlation coefficient (R). This model results from a systematic process of including or excluding variables based on their significance in explaining the variation in the dependent variable, CGRI. The aim is to construct a model that optimally captures the relationship between the dependent variable and the selected explanatory variables, resulting in the highest possible multiple correlation coefficient.

It is crucial to recognize that the magnitude of each partial regression coefficient depends on the units in which the corresponding predictor variable (V_h) is measured. Therefore, the magnitude of a

coefficient alone does not necessarily indicate the importance of each predictor. The research uses standardized partial regression coefficients to assess the impact of each variable in the model. To do this, normalizing the predictor variables (subtracting the mean and dividing by the standard deviation) after adjusting the model (Table 5), the value of the coefficients is obtained. This standardization process allows for a fair comparison of the relative importance of each predictor variable in influencing the dependent variable, CGRI.

Table 5. Summary of the model^c.

Model	R	R ²	R ² adjusted	Standard error
1	.571 ^a	0.326	0.312	0.043138839
2	.638 ^b	0.407	0.382	0.040903068

a. Predictors: (Constant), *IND*
b. Predictors: (Constant), *IND*, *EJ*
c. Dependent variable: *CGRI*
Source: Authors.

The model that interrelates enhanced corporate governance according to the requirements established in Spain causes executive members of the board of directors and independent members to influence the CG through the CGRI (Table 6). Thus, if these two components increase, so does governance and good management.

Table 6. Complete model and final (Stepwise) model Coefficients^a.

Complete Model		Non-standard coefficients		Standard coefficients	<i>t</i>	Sig.
		β	Error	β		
1	(Constant)	.451	.155		2.917	.006
	SIZE	-.002	.005	-.049	-.352	.726
	SECTOR	-.004	.003	-.149	-1.156	.254
	NRC	.005	.002	.325	2.214	.033
	IND	.002	.001	.556	2.546	.015
	EJ	.003	.001	.364	1.958	.057
	NCA	.190	.085	.297	2.223	.032
	ADV	.000	.000	-.177	-1.126	.267
	DOM	.001	.001	.183	.695	.491
	COM	.015	.008	.267	1.924	.062

a. Variable dependent: ICGC

Final Model		Non-standard coefficients		Standard coefficients	<i>t</i>	Sig.
		β	Error	β		
1	(Constant)	.791	.026		30.970	.000
	<i>IND</i>	.002	.001	.571	4.822	.000
	(Constant)	.750	.029		25.741	.000
	<i>IND</i>	.003	.000	.609	5.375	.000
	<i>EJ</i>	.002	.001	.286	2.528	.015

Source: Authors.

In this way, it is confirmed that meets the characteristics of *IND* ($t = 5.375, p<0.05$) and *EJ* ($t = 2.528, p<0.05$) which explain the independent variable *ICCG* more thoroughly, by means a positive linear association.

Likewise, the coefficient of determination (R^2) shows that the variability explained by the model is 40.7%, which is very close to the adjusted coefficient of determination (Table 6). We can also observe the correlations between the variables (Table 7):

Table 7. Pearson Correlation between the variables used in the analysis.

	ICGC	SIZE	SECTOR	NRC	IND	EJ	NCA	ADV	DOM	COM
ICGC	1.000									
SIZE	.274*	1.000								
SECTOR	.108	.191	1.000							
NRC	.205	.268*	.280*	1.000						
IND	.558**	.414**	.144	.225	1.000					
EJ	.282*	.192	.256*	-.067	-.019	1.000				
NCA	.284*	.166	.125	-.053	.437**	-.113	1.000			
ADV	-.109	-.256*	-.030	.262*	-.192	.035	-.241	1.000		
DOM	-.550**	-.194	-.073	.014	-.632**	-.467**	-.314*	.407**	1.000	
COM	+.118	.442**	-.022	-.169	.034	.227	.025	.247	-.174	1.000

* Correlation is significant at the 0.05 level (bilateral). ** Correlation is significant at the 0.01 level (bilateral). Source: Authors.

The analysis of variance (ANOVA) identifies the variability explained by each of the predictors incorporated in the model (Table 8):

Table 8. ANOVA^a.

Model		Sum of squares	gl	Root mean square	F	Sig.
1	Regression	,043	1	.043	23.253	.000 ^b
	Waste	,089	48	.002		
	Total	,133	49			
2	Regression	,054	2	.027	16.128	.000 ^c
	Waste	,079	47	.002		
	Total	,133	49			
a. Dependent variable: <i>CGRI</i>						
b. Predictors: (Constant), <i>IND</i>						
c. Predictors: (Constant), <i>IND</i> , <i>EJ</i>						

Source: Authors.

As in simple linear models or correlation studies, no matter how high the goodness of fit, if the *F*-test is not significant, the model is not valid because it is unable to explain the observed variance better than expected by chance.

The ANOVA test carried out in this study shows that, for model 2 (which integrates these 2 variables), the *p*-value associated with the *F* statistic is lower than the significance level (Table 8).

In this case, the *p*-value is less than 0.05; therefore, tis research finds that the characteristics of *IND* and *EJ* significantly describe the degree of relevance they attach to *CGRI*. Therefore, H_2 is rejected: There is no positive relationship between adequate CG and the monitoring of board members (*IND*). Thus, the predictor variables that enter the equation are the latter *IND* and *EJ* (Table 9).

$$CGRI = 0.750 + 0.003 \cdot IND + 0.002 \cdot EJ + \varepsilon$$

(2)

Table 9. Excluded variables^a.

	Model	β	t	Sig.	Partial correlation
1	SECTOR	.012 ^b	.099	.921	.014
	SIZE	.084 ^b	.674	.504	.098
	NRC	.097 ^b	.790	.434	.114
	EJ	.286 ^b	2.528	.015	.346
	NCA	.138 ^b	1.046	.301	.151
	ADV	-.095 ^b	-.784	.437	-.114
	DOM	-.309 ^b	-2.056	.045	-.287
	COM	.204 ^b	1.759	.085	.248
2	SECTOR	-.041 ^c	-.348	.729	-.051
	SIZE	.079 ^c	.666	.509	.098
	NRC	.134 ^c	1.152	.255	.167
	NCA	.184 ^c	1.480	.146	.213
	ADV	-.019 ^c	-.154	.878	-.023
	DOM	-.077 ^c	-.352	.726	-.052
	COM	.130 ^c	1.102	.276	.160

a. Dependent variable: CGRI

b. Predictors: (Constant), IND

c. Predictors: (Constant), IND, EJ

Source: Authors.

On the contrary, the following variables are excluded (Table 9) from the rest of the hypotheses: *SECTOR* ($t = -0.348$, $p > 0.05$), *SIZE* ($t = 0.666$, $p > 0.05$), *NRC* ($t = 1.152$, $p > 0.05$), *NCA* ($t = 1.480$, $p > 0.05$), *ADV* ($t = -0.19$, $p > 0.05$), *DOM* ($t = -0.077$, $p > 0.05$) and *COM* ($t = 0.130$, $p > 0.05$).

5. Conclusions

To date, previous studies have primarily concentrated on analyzing the variables that influence corporate governance (CG) using private indices. However, this paper represents a pioneering effort by offering a comprehensive analysis of the variables—defined throughout the literature—that either have or lack a significant influence on good corporate governance. This research is performed through a Corporate Governance Report and Recommendations Index (CGRI) specifically designed for a quantitative measurement of CG, sourced from a public institution such as the CNMV in Spain. By using a publicly available index, this study contributes to the transparency and accessibility of CG assessment, providing valuable insights into the determinants of effective corporate governance practices and thus improve the business performance of the companies. The index helps to identify areas for improvement in the company itself and to observe the actions of its competitors.

In contrast to the literature on corporate governance (CG) for IBEX35-listed companies, the results obtained in this study diverge significantly from studies conducted in other countries. While at the international level there are numerous variables that influence CG to a greater or lesser extent, this study underscores the uniqueness of the Spanish context. This leads to the conclusion that corporate governance and its management must be adapted to the habitat in which the company operates.

The main conclusion in the case of the IBEX35 companies studied, is that good CG is mainly influenced by the number of independent directors and the number of executive directors. Independent directors are commonly believed to positively impact organizational performance by advocating for practices that, through effective monitoring, mitigate potential blockholder appropriation and thus promote the development of good CG. It is important to remember that it also improves the profitability of the company, as other authors have shown.

The analysis indicates that the remuneration received by directors and executives, or the governance structure, does not significantly influence the development of good corporate governance among IBEX35 companies. Instead, it underscores the significance of monitoring conducted by independent and executive members, utilizing control mechanisms, which positively influences good CG. This underscores the importance of effective oversight and governance practices, particularly in fostering transparency and accountability within Spanish companies.

Moreover, regarding monitoring, the study finds that the number of annual board meetings and the incorporation of women into senior management do not significantly affect governance within these entities. In the case of board meetings, it is the acceptance of the recommendations established by the CNMV as well as the frequency of the meetings that influences them. These recommendations should focus on assessing the productivity of these meetings and the efficiency of decisions made during them.

Similarly, regarding the incorporation of women into senior management, the absence of specific recommendations directly addressing this issue complicates the evaluation of compliance. Even if companies report information on the number of women in decision-making roles, they may perceive this recommendation as fulfilled, regardless of whether they meet the minimum percentage of women required. Therefore, it is suggested that recommendation 14 from the CNMV be split into two separate recommendations—one promoting the incorporation of women into senior management positions and the other addressing the approval of boards of directors' selection policies. This separation would enable a more accurate measurement of compliance with the inclusion of women in decision-making positions.

Spanish listed companies are mandated to document their level of compliance in an Annual Corporate Governance Report (ACGR) and, if necessary, provide an explanation for any non-compliance with specific recommendations. The adequacy and thoroughness of these explanations, intended to justify instances of non-compliance, should be subject to auditing by external and independent professionals. This ensures that shareholders, investors, and the broader market can assess them accurately and make informed judgments regarding the company's governance practices. Such audits contribute to transparency and accountability, fostering trust and confidence among stakeholders in the company's operations and decision-making processes.

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References

1. Abu Qa'dan, M. B., and Suwaidan, M. S. 2019. Board composition, ownership structure and corporate social responsibility disclosure: The case of Jordan. *Social Responsibility Journal*, 15(1): 28-46.
2. Adams, R. B., Hermalin, B. E., and Weisbach, M. S. 2010. The role of boards of directors in corporate governance: A conceptual framework and survey. *Journal of economic literature*, 48(1): 58-107.

3. Agrawal, A. and Knoeber, C. R. 1996. Firm performance and mechanisms to control agency problems between managers and shareholders, *Journal of Financial and Quantitative Analysis*, 31, 377–97.
4. Arora, A., and Bodhanwala, S. 2018. Relationship between corporate governance index and firm performance: Indian evidence. *Global Business Review*, 19(3): 675-689.
5. Bae, S. M., Masud, M., Kaium, A., and Kim, J. D. 2018. A cross-country investigation of corporate governance and corporate sustainability disclosure: A signaling theory perspective. *Sustainability*, 10(8): 2611.
6. Baixauli-Soler, J. S., and Sanchez-Marin, G. 2015. Executive compensation and corporate governance in Spanish listed firms: a principal–principal perspective. *Review of Managerial Science*, 9(1): 115-140.
7. Bauer, R., Guenster, N. and Otten, R. 2004. Empirical evidence on corporate governance in Europe: the effect on stock returns, firm value and performance, *Journal of Asset Management*, 5 (2): pp. 91-104.
8. Beiner, S., Drobetz, W., Schmid, M. M., and Zimmermann, H. 2006. An integrated framework of corporate governance and firm valuation. *European Financial Management*, 12(2): 249-283.
9. Berinde, S. R. 2018. Corporate Governance Decisions in Accounting Business Field for Increasing Competitiveness. Romania, France and Europe Comparison. *Engineering Economics*, 29(3): 302-311.
10. Black, B., Jang, H. and Kim, W. 2006. Does corporate governance affect firm value? Evidence from Korea, *Journal of Law, Economics and Organization*, 22 (2): pp. 366-413.
11. Brown, D.L. and Caylor, M.L. 2006. Corporate governance and firm valuation, *Journal of Accounting and Public Policy*, 25 (4): pp. 409-34.
12. Buallay, A., Hamdan, A., and Zureigat, Q. 2017. Corporate governance and firm performance: evidence from Saudi Arabia. *Australasian Accounting, Business and Finance Journal*, 11(1): 78-98.
13. Bunget, O. C., Mateş, D., Dumitrescu, A. C., Bogdan, O., and Burcă, V. 2020. The Link between Board Structure, Audit, and Performance for Corporate Sustainability. *Sustainability*, 12(20): 8408.
14. Cai, W., Lee, E., Xu, A. L., and Zeng, C. C. 2019. Does corporate social responsibility disclosure reduce the information disadvantage of foreign investors? *Journal of International Accounting, Auditing and Taxation*, 34: 12-29.
15. Chen, C. R., Steiner, T. L., and Whyte, A. M. 1998. Risk-taking behavior and management ownership in depository institutions. *Journal of Financial Research*, 21(1): 1-16.
16. Chen, S., Bu, M., Wu, S., and Liang, X. 2015. How does TMT attention to innovation of Chinese firms influence firm innovation activities? A study on the moderating role of corporate governance. *Journal of Business Research*, 68(5): 1127-1135.
17. Chijoke-Mgbame, A. M., Mgbame, C. O., Akintoye, S., and Ohalehi, P. 2020. The role of corporate governance on CSR disclosure and firm performance in a voluntary environment. *Corporate Governance (Bradford)*, 20(2): 294-306.
18. Comisión Nacional del Mercado de Valores CNMV. 2021. Circular 3/2021, de 28 de septiembre, por la que se modifica la Circular 4/2013, de 12 de junio, que establece los modelos de informe anual de remuneraciones de los consejeros de sociedades anónimas cotizadas.
19. Corral-Lage, J., Garyeta, A, Trigo, E. and De la Peña, J.I. 2024. Does Corporate Governance Differ by Sector? An Analysis under Good Practice Criteria. The Case of Spain. *Plos One*. Forthcoming
20. Daily, C. M., Dalton, D. R., and Cannella, A. A., Jr. 2003. Corporate governance: Decades of dialogue and data. *Academy of Management Review*, 28(3): 371–382.
21. Davies, M., and Schlitzer, B. 2008. The impracticality of an international “one size fits all” corporate governance code of best practice. *Managerial Auditing Journal*, 23(6): 532-544
22. Deschênes, S., Rojas, M., Boubacar, H., Prud'homme, B., and Ouedraogo, A. 2015. The impact of board traits on the social performance of Canadian firms. *Corporate Governance (Bradford)*, 15(3): 293-305.
23. Douma, S., George, R., and Kabir, R. 2006. Foreign and domestic ownership, business groups, and firm performance: Evidence from a large emerging market. *Strategic Management Journal*, 27(7): 637-657.
24. Edmans, A., and Holderness, C. G. 2017. Blockholders: A survey of theory and evidence. *The handbook of the economics of corporate governance*, 1, 541-636.
25. Eisenberg, T., Sundgren, S. and Wells, M. T. 1998. Larger board size and decreasing firm value in small firms, *Journal of Financial Economics*, 48: 35–54.
26. Eling, M., and Marek, S. D. 2014. Corporate governance and risk taking: Evidence from the UK and German insurance markets. *Journal of Risk and Insurance*, 81(3): 653-682.
27. Ekanayake, A. 2018. Action at a distance: Accounting inscriptions and corporate governance of a public sector bank in a developing country. *Asian Review of Accounting*. 26(1): 39-61.
28. European Commission. 2011. Green Paper on the modernisation of EU public procurement policy. Towards a more efficient European Procurement Market
29. Fama, E. F., and Jensen, M. C. 1983. Agency problems and residual claims. *The journal of law and Economics*, 26(2): 327-349.
30. Filatotchev, I., and Allcock, D. 2010. Corporate governance and executive remuneration: A contingency framework. *Academy of Management Perspectives*, 24(1): 20-33.

31. Forte, H. C., Silva, L. K. S., and Abreu, M. C. S. 2020. Effect of the structure of the board of directors on the disclosure of environmental and social practices in brazilian companies. *Revista Universo Accounting*, 16(1): 119-135.
32. Fung, B. 2014. The demand and need for transparency and disclosure in corporate governance. *Universal Journal of Management*, 2(2): 72-80.
33. Grace, E. 2004. Contracting incentives and compensation for property-liability insurer executives. *Journal of Risk and Insurance*, 71(2): 285-307.
34. Gompers, P.A., Ishii, J. L. and Metrick, A. 2003. Corporate Governance and Equity Prices. *Quarterly Journal of Economics*, 118 (1): 107-155.
35. Grosman, A., Aguilera, R. V., and Wright, M. 2019. Lost in translation? Corporate governance, independent boards and blockholder appropriation. *Journal of World Business*, 54(4): 258-272.
36. Guo, Z., and Kga, U. K. 2012. Corporate governance and firm performance of listed firms in Sri Lanka. *Procedia-Social and Behavioral Sciences*, 40, 664-667.
37. Huang, Y. S., and Wang, C. J. 2015. Corporate governance and risk-taking of Chinese firms: The role of board size. *International Review of Economics and Finance*, 37, 96-113.
38. Iatridis, G. E. 2018. Accounting discretion and executive cash compensation: An empirical investigation of corporate governance, credit ratings and firm value. *Journal of International Financial Markets, Institutions and Money*, 55, 29-49.
39. Iskander, M., and Chamlou, N. 2000. *Corporate governance: A framework for implementation*. The World Bank.
40. Jacques, K. A. S., Lemes, S., Fávero, L. P. L., and Rodrigues, L. M. P. L. 2023. Composition of the board of directors and the probability of disclosure of social responsibility reports. *Revista Brasileira de Gestão de Negócios*, 25(4): p.516-532.
41. Jensen, M. C., and Meckling, W. H. 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, 3(4): 305-360.
42. Ji, J., Talavera, O., and Yin, S. 2020. Frequencies of board meetings on various topics and corporate governance: evidence from China. *Review of Quantitative Finance and Accounting*, 54(1): 69-110.
43. Kahveci, E., and Wolfs, B. 2019. Family business, firm efficiency and corporate governance relation: the case of corporate governance index firms in Turkey. *Academy of Strategic Management Journal*, 18(1): 1-12.
44. Kao, M. F., Hodgkinson, L., and Jaafar, A. 2019. Ownership structure, board of directors and firm performance: Evidence from Taiwan. *Corporate Governance (Bradford)*, 19(1): 189- 216.
45. Khanchel, I. 2007. Corporate governance: measurement and determinant analysis. *Managerial Auditing Journal*, 22(8): 740-760.
46. Klapper, L.F. and Love, I. 2004. Corporate governance, investor protection and performance in emerging markets. *Journal of Corporate Finance*, 10 (5): 703-28.
47. Kultys, J. 2016. Controversies about agency theory as theoretical basis for corporate governance. *Oeconomia Copernicana*, 7(4): 613-634.
48. La Rosa, F., Caserio, C., and Bernini, F. 2019. Corporate governance of audit firms: Assessing the usefulness of transparency reports in a Europe-wide analysis. *Corporate Governance: An International Review*, 27(1): 14-32.
49. Laksito, H., and Ratmono, D. 2021. Increasing the competitiveness of creative industries based on information technology and good corporate governance in central Java. *International Journal of Data and Network Science*, 5(2): 83-90.
50. Laksmana, I. 2008. Corporate board governance and voluntary disclosure of executive compensation practices. *Contemporary Accounting Research*, 25(4): 1147-1182
51. Libson, A. 2020. The Law of Good People: Corporate Governance as the Perfect Storm. *Jerusalem Review of Legal Studies*, 22(1): 25-37.
52. Loderer, C. and Martin, K. 1997. Executive stock ownership and performance. *Journal of Financial Economics*, 45 (2): 223-55.
53. Lu, J. and Wang, J. 2021. Corporate governance, law, culture, environmental performance and CSR disclosure: A global perspective. *Journal of International Financial Markets, Institutions and Money*, 70: 101264.
54. Majumder, M. T. H., Akter, A., and Li, X. 2017. Corporate governance and corporate social disclosures: a meta-analytical review. *International Journal of Accounting and Information Management*, 25 (4): 434-458.
55. Marx, B. D. 1996. Iteratively reweighted partial least squares estimation for generalized linear regression. *Technometrics*, 38(4): 374-381.
56. Mechelli, A., and Cimini, R. 2020. The effect of corporate governance and investor protection environments on the value relevance of new accounting standards: the case of IFRS 9 and IAS 39. *Journal of Management and Governance*, 25: 1241-1266.
57. Milidonis, A., and Stathopoulos, K. 2011. Do US insurance firms offer the “wrong” incentives to their executives?. *Journal of Risk and Insurance*, 78(3): 643-672.
58. Okibe, H. B. 2020. Sycophancy and Dearth of Integrity in Governance. *ESUT Journal of Social Sciences*, 5(2): 145-171

59. Orzes, G., Moretto, A. M., Moro, M., Rossi, M., Sartor, M., Caniato, F., and Nassimbeni, G. 2020. The impact of the United Nations global compact on firm performance: A longitudinal analysis. *International Journal of Production Economics*, 227: 107664.
60. Outa, E. R., and Waweru, N. M. 2016. Corporate governance guidelines compliance and firm financial performance. *Managerial Auditing Journal* 31(8/9): 891-914.
61. Pande, S., and Ansari, V. A. 2014. A theoretical framework for corporate governance. *Indian Journal of Corporate Governance*, 7(1): 56-72.
62. Pucheta-Martínez, M. C., and Gallego-Álvarez, I. 2019. An international approach of the relationship between board attributes and the disclosure of corporate social responsibility issues. *Corporate Social Responsibility and Environmental Management*, 26(3): 612-627.
63. Rajoria, D. K. 2020. Corporate governance and non-disclosure of material information: an insight into the wadia case. *Company Law Journal*, 1: 33-40.
64. Ramaswamy, V., Ueng, C. J., and Carl, L. 2008. Corporate governance characteristics of growth companies: An empirical study. *Academy of Strategic Management Journal*, 7: 21.
65. Rose, C. 2016. Firm performance and comply or explain disclosure in corporate governance. *European Management Journal*, 34(3): 202-222.
66. Rossignoli, F., Lionzo, A., and Buchetti, B. 2021. Beyond corporate governance reporting: the usefulness of information on board member profiles. *Journal of Management and Governance*, 25(1): 27-60.
67. Salvioni, D. M., Franzoni, S., and Gennari, F. 2018. Social responsibility as a factor of convergence in corporate governance. In *Sustainability and Social Responsibility: Regulation and Reporting* (pp. 29-53). Springer, Singapore.
68. Shahid, M. S., and Abbas, M. 2019. Does corporate governance play any role in investor confidence, corporate investment decisions relationship? Evidence from Pakistan and India. *Journal of Economics and Business*, 105: 105839.
69. Solomon, J. 2020. *Corporate governance and accountability*. John Wiley and Sons.
70. Solikhah, B., and Maulina, U. 2021. Factors influencing environment disclosure quality and the moderating role of corporate governance. *Cogent Business and Management*, 8(1): 1876543.
71. Suteja, J., Gunardi, A., and Auristi, R. J. 2017. Does Corporate Social Responsibility Shape the Relationship between Corporate Governance and Financial Performance? *Indonesian Journal of Sustainability Accounting and Management*, 1(2): 59-68.
72. Tandukar, H. (2019). Assessment of national policy to promote corporate governance in Nepal. Tandukar, H., Niroula, A., Shrestha, K., and Paudel, U. 2019. Assessment of national policy to promote corporate governance in Nepal. *Quest Journal of Management and Social Sciences*, 1(1): 73-95.
73. Todorovic, I. 2013. Impact of corporate governance on performance of companies. *Montenegrin Journal of Economics*, 9(2): 47.
74. Torchia, M., Calabrò, A., and Morner, M. 2015. Board of directors' diversity, creativity, and cognitive conflict: The role of board members' interaction. *International Studies of Management and Organization*, 45(1): 6-24.
75. Vafeas, N. 1999. Board meeting frequency and firm performance. *Journal of Financial Economics*, 53(1): 113-42.
76. Yermack, D. 1996. Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40: 185-211.
77. Werner, S.; Tosi, H. L.; Gomez-Mejia, L. R. 2005. Organizational governance and employee pay: How ownership structure affects the firm's compensation strategy. *Strategic Management Journal*, 26: 377-384.
78. Wood, A., and Small, K. 2019. An assessment of corporate governance in financial institutions in Barbados. *Journal of Governance and Regulation*, 8(1): 47-58.

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