

Article

# The Effect of Environmental, Social and Governance Consistency on Economic Results

Idoya Ferrero-Ferrero \*, María Ángeles Fernández-Izquierdo and María Jesús Muñoz-Torres

Finance and Accounting Department, Universitat Jaume I, 12071 Castellón de la Plana, Spain;  
afernand@uji.es (M.Á.F.-I.); munoz@uji.es (M.J.M.-T.)

\* Correspondence: Ferrero@uji.es; Tel.: +34-964-387-143

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**Abstract:** This study aims to explore how environmental, social and governance (ESG) consistency impacts the firm performance, specifically, the relationship between ESG performance and economic performance (EP). This study posits that the company's commitment and effectiveness towards the creation of consistent competitive advantage in environmental, social and governance dimensions constitutes an intangible value that leads improvements in corporate performance. This work uses a panel dataset for listed firms of the EU-15 countries during the period 2002 to 2011 and applies Generalized method of moments (GMM) estimator system in order to address the potential unobserved heterogeneity and dynamic endogeneity. The main results reveal that the global effect of ESG performance on EP for those firms that present interdimensional consistency is greater than the rest, except for higher levels of ESG performance.

**Keywords:** firm performance; economic performance; environmental; social and governance performance; consistency; synergistic effect; generalized method of moments; endogeneity problems

## 1. Introduction

In recent years, the severity of the global financial crisis, its negative implications for growth and development, the effects of climate change and the corporate scandals around the globe, have increased the stakeholder interest in environmental, social and governance (ESG) concerns. On the one hand, investors [1] and international organizations [2,3] have placed particular emphasis on the critical role of companies towards contributing to sustainable development. On the other hand, taking into account the expectations of a broad range of stakeholders—consumers, investors, policy-makers, media, and NGOs—companies are showing a more proactive attitude to integrate ESG aspects in the management system, which theoretically brings benefits in terms of corporate reputation, trust, customer loyalty, cost savings, access to capital, human resource management, innovation capacity, and risk management. In this sense, ESG performance is used by the stock market as a proxy of company's integration of corporate social responsibility (CSR) in corporate strategy.

In the academic world, after decades of research on the relationship between CSR and corporate economic performance (EP), many scholars still claim that much research remains to be conducted before this relationship can be fully understood, specifically developing models that incorporate omitted variables [4–6]. In this regard, this study attempts to contribute to the literature gap of how the combination of the ESG aspects in the management systems impacts on the firm performance [7] by including the synergistic effect of the three ESG dimensions in the abovementioned relationship. In order to test ESG synergistic effect, this study proposes the “interdimensional consistency” between ESG dimensions and explores how this consistency can affect the relationship between ESG and EP.

This study contributes to the literature and business practices in different ways. Firstly, this study advances to the emerging literature about consistency by exploring how the interrelationships

across environmental, social and governance dimensions impacts on firm performance as a whole. Secondly, this study develops different measures of consistency based on strengths in ESG dimensions comparing the firms' scores respect to their peer groups. Thirdly, it proposes three different levels of ESG consistency to measure the company's commitment and effectiveness towards the creation of a competitive advantage. Fourthly, in terms of methodology, this paper uses a panel dataset for listed firms of the EU-15 countries during the period 2002 to 2011 and applies generalized method of moments (GMM) estimator system in order to address the potential unobserved heterogeneity and dynamic endogeneity. And finally, this study reveals that those companies that obtain an excellent ESG performance, there are not necessarily firms that outperform their competitors in all the extra-financial performance dimensions. This result means that not all the excellent ESG companies maintain an interdimensional consistency but they can offset strengths in some dimensions with weaknesses in others.

This work is divided into five sections. After this introduction, Section 2 presents a literature review and the hypotheses. Section 3 includes information on the sample, variables, and the methodology used in estimating the models. Section 4 presents the results and Section 5 offers the main conclusion.

## 2. Literature Review and Hypotheses

In the field of strategic management, the stakeholder theory [8] provides a reasoned perspective on how firms should manage their relationships with stakeholders to ensure a sustainable corporate success [9]. In particular, the instrumental stakeholder theory [10] assumes that the stakeholder management practices can result in significant competitive advantage, minimizing costs and improving economic performance. In this regard, a large number of authors [9,11–14] argue that those firms that integrate environmental, social and governance factors into management can create and maintain value for their stakeholders by providing better products and services, attracting and retaining higher quality employees, enhancing the company's reputation, increasing customer loyalty, gaining social legitimacy and improving risk management among others. Likewise, from the resource-based perspective [15,16], those firms with strong extra-financial capabilities (e.g., environmental ones) improve the organizational process to efficiently and competitively use of tangible and intangible assets boosting their capacity for generating economic results.

A broad range of empirical studies have tested the relationship between various types of social and environmental performance and economic performance. A substantial proportion of empirical studies reported positive effects of social and/or environmental performance on economic performance [4,17–20], while others found a mixed relationship [21], no significant effects [22] or negative effects [23]. In this regard, a recent meta-analysis [24] that combines the findings of about 2200 studies shows that a vast majority of studies reported a positive relationship between ESG dimensions and financial performance. Based on such arguments and the recent meta-analysis results, this study establishes the following baseline hypothesis:

**Hypothesis 1.** *The level of ESG performance is positively associated with economic performance.*

A possible explanation of the mix findings in the ESG-EP relationship could be that previous research has omitted the interactions between different ESG dimensions and their moderating effects [16,25]. To measure ESG performance, many previous studies have been based on a rating that includes different dimensions. However, a particular level of a rating can conceal different levels of uniformity in the ESG dimensions, which can affect the economic performance. In this respect, the concept of "uniformity" is closely related to "consistency", which reflects an imperative to maintain coherence in the diverse and complex businesses and in the relations with the environments [26].

In the literature, the concept of consistency has been explored from different perspectives. As Soda and Zaheer [27] state, the organizational research emphasizes the value of consistency among organizational elements, arguing that internal fit among them enhances corporate performance, maintaining a coherence

image of the organization and creating value through the mutual reinforcement between and within tangible and intangible assets of the organization. From a managerial firm perspective, strategic consistency implies an alignment among stakeholder approach of companies, their declared commitments, and their performance [28].

Recently, a stream of the empirical literature on CSR has included the concept of “consistency” to explore the relationship between social and environmental performance and financial performance. Moneva et al. [28] analyzed whether the strategic consistency of the firm related to its stakeholders led to successful financial results. For that end, the authors developed an index to measure the degree of strategic consistency between the sustainability reporting—external transparency—and the strategic orientation of the firm—internal level. The main result revealed that those companies with a strategic stakeholder consistency commitment did not achieve lower financial performance than those organizations with a shareholder approach. Oikonomou et al. [26], focusing on intradimensional CSR consistency, investigated how the corporate financial performance was affected by the impacts of uniformly positive, uniformly negative and mixed—positive and negative—indicators in five dimensions—community, diversity, employee, environment, and product. They found evidence that firms, that exhibited uniformly positive or negative indicators in particular dimensions of CSR, outperformed firms that showed a mixed picture of positive and negative indicators, suggesting stakeholders’ judgments of CSR reward uniformity. Likewise, Wang and Choi [29], considering the same five dimensions of Oikonomou et al. [26], examined temporal and interdomain consistency in CSR. Temporal consistency refers to the reliability of a firm’s treatment of its stakeholders over time, while interdomain consistency indicates uniformity in a firm’s treatment of its different stakeholder groups. Wang and Choi [29] concluded that the two types of consistency in CSR interact positively to influence a firm’s financial performance.

This study contributes to literature by proposing the “interdimensional consistency” based on the organizational and management literature. The interdimensional consistency is defined as a balanced approach, in a positive direction, among the environmental, social and governance dimensions. The interdimensional consistency is aligned with the concept of “strong sustainability”, which allows a lower degree of tolerance to offset economic, social and environmental pillars [30,31]. In this regard, the offsetting effect cannot be accepted when good results in one dimension may hide the absence of results or inadequacy of policies in other dimensions [32–34].

This study explores how the interrelationships across environmental, social and governance dimensions impacts on firm performance as a whole. In particular, this study attempts to fill the research gap of the consistency based on strengths in ESG dimensions depending on its peer groups. Recent research has documented an increasingly strong lateral effect of CSR on the strategic management, which represents a pressure generated by the corporate community itself [35]. In this regard, Barnett [36] explains that in an industry when a company engage in misconduct or when the industry as a whole is perceived as lacking social or environmental awareness, some companies invest extra efforts and resource to adopt CSR as an integral component of corporate strategy with the aim of differentiating from their less responsible colleagues and being positively judged by the market actors. These efforts can build competitive advantage and provide extra economic performance for synergistic reasons. In contrast, those companies that do not increase their CSR practices to match the competitors in their industry may have significant losses of reputation and customer loyalty, causing economic harm.

Theoretically, the different dimensions of the corporate ESG performances are interdependent. On the one hand, whether a company maintains a high degree of consistency of strengths may develop different value chain activities aligned with the acquired commitments, increasing the social complexity of a company’s relationship assets, encouraging that the corporate behavior are in harmony with the environment, and improving the strategic management process. In this regard, the interaction value of the different ESG practices exceeds the total value of individual and isolated efforts, creating a strong ESG strategy, which cannot easily be mimicked by competitors. In this vein, Wagner [37] states that

sustainability integration, determined by the different stakeholder domains, is a mediator variable between stakeholder demands and corporate performance, since sustainability integration aligns the environmental and social objective with other strategic ones and ensures that activities and projects are not in conflict, capturing the simultaneous influence of stakeholders.

On the other hand, according to Wang and Choi [29], those firms that present ESG performance relationships built without consistency, will not develop a strong ESG strategy and will be easier for competitors to replicate it. To reflect these arguments, this study tests the following hypothesis:

**Hypothesis 2.** *The interdimensional consistency affects positively to the effect of the ESG performance on economic performance.*

### 3. Research Methodology

#### 3.1. Sample Selection

The sample consists of those companies listed in the stock exchanges of the EU-15 member states for the period 2002–2011 that report ESG data in Asset4 database. This study explores EU-15 members given the potential differences across regions in the ESG-EP relations [24]. The analyzed time series finish in 2011 due to the structural changes promoted by the “renewed EU strategy 2011–2014 for Corporate Social Responsibility” [38]. This strategy could have generated a mediating effect exerted by CSR national policies from EU countries after 2012. The starting point of the sample includes data from 506 firms and 3809 firm-year observations. This study uses a lag-structure for the dependent variable based on previous research [16,39]. This structure results in a loss of observations related to a specific year, 2002. In addition, this study deleted those firms with missing data in a particular year, since it could generate inconsistent estimations. Taking into account these conditions, the final sample of the study includes 460 firms and 3071 firm-year observations. However, with the aim of applying a robust dynamic approach, those firms that did not present the ESG scores for four or less years, were in a first stage not considered. This restricted sample consists of an unbalanced panel of 373 firms and 2835 firm-year observations since 87 firms do not have sufficient ESG data over time to meet the latter criterion. Nonetheless, the results also were checked in the non-restricted unbalanced panel in order to address the ESG disclosure bias.

The information was obtained from Thomson Reuters Asset4 database, which uses only publicly available information. As Schäfer et al. [40] state, Thomson Reuters Asset4 database provides transparent, objective, auditable, comparable and systematic economic, environmental, social and governance information, offering a comprehensive platform for establishing benchmarks for the assessment of corporate performance. Thomson Reuters Asset4 contains over 250 key performance indicators organized into 18 categories within four dimensions: (1) economic performance score; (2) social performance score; (3) environment performance score; and (4) corporate governance score. Note that all firms from Luxemburg were deleted because the database did not contain the information about ESG for their firms.

#### 3.2. Variables

The dependent variable is the economic dimension (ECONOMIC) that is measured using the economic performance score provided by Thomson Reuters Asset4. This score measures a company's capacity to generate sustainable growth and a high return on investment through the efficient use of all its financial and non-financial resources, building on the research gap found by Goyal et al. [41]. This proxy is the reflection of a company's overall financial health and its ability to generate long-term profits. Economic performance data is presented relative to a representative group of the industry, which is measured by the median [42,43]. According other studies [14,44], the industry is defined by Standard Industrial Classification (SIC) codes. This study uses one-digit SIC code given the sample size and the scale used to define the relative measures. Therefore, the ECONOMIC variable is defined

as the difference between a firm's score and the median of the ECONOMIC scores across all listed firms in the same one-digit SIC and from the country in which the company is registered in a particular year.

With respect to the independent variables, this study includes two extra-financial variables: (i) the level of ESG performance (ESG); and (ii) the interdimensional ESG consistency (INTERDIMENSIONAL CONSISTENCY). According to previous articles [45,46], this study measures the level of ESG performance for every year and each firm, constructing a composite index with equal weights to each of the three dimensions: social, environmental, and corporate governance. This variable allows testing Hypothesis 1. Regarding the interdimensional ESG consistency, this study builds three different levels of ESG consistency based on strengths in ESG dimensions. In this study, a strength means that a firm performs over or equal its peer group in environmental, social or governance terms. In order to identify strengths, this study explores the categories related to each extra-financial dimension. In particular, Thomson Reuters Asset4 structures the environmental dimension in three categories—resource reduction, emission reduction, and product innovation—the social dimension in seven categories—human rights, workforce opportunity, society and community, training and development, product responsibility, employment quality, and health and safety—and corporate governance dimension in five categories—vision and strategy, shareholder rights, board functions, board structure, and compensation policy. In line with previous research [47–50], this study uses the median as a measure of central tendency of performance which represents a group level indicator for each category in a given industry, country and year and allow identifying those firms that have strengths—if are over or equal the media. In this regard, Liden et al. [47] used the median to explore the effects of leader-member exchange differentiation on individual and group performance. Kim et al. [48] defined the ethical behavior of borrowers and lenders depending whether the business ethics scores were above or below the median value of the distribution for the corresponding sector and year. Tang and Luo [49] measured the extent of the carbon pollution mitigation taking into account whether the firm's emissions intensity was lower than the median of its sector, since this measure is more comparable across firms than data based on absolute emissions. Likewise, Laroche and Salesina [50] used a dummy variable on the bases of the samples' median to identify those firms that made the most and least intensive use of high performance work practices.

This study uses seven dummy variables to identify those firms that have a position over or equal the median respect to the industry in all categories for each dimension, for two specific dimensions or for the three dimensions. Table 1 shows the description of each dummy variable. In this regard, the first level of ESG consistency, the dummy variables only identify the firms that have strengths in all the categories of each dimensions in an independent way and, actually, they show consistency within each dimension and they do not represent any type of interdimensional consistency. The second level represents bidimensional consistency, which is understood as the uniformity in the performance position regarding all the categories associated with two extra-financial dimensions. For instance, a firm presents environmental and social consistency whether it performs better (or equal) in both dimensions with respect to the peer group, regardless of its position in corporate governance dimension. Based on the indicator of strength for each dimension, this study builds a new set of dummy variables to identify those firms that jointly presents strengths in two dimensions. The third level corresponds to the interdimensional ESG consistency, which is associated with Hypothesis 2.

This study uses a dummy variable to identify those firms that have strengths in the three dimensions. With the aim of testing asymmetries in the ESG-EP relationship depending on the interdimensional consistency, this study multiplies the dummy variables above-mentioned by ESG performance.

**Table 1.** Dummy variables to identify the different levels of interdimensional consistency.

Type of Consistency	Dummy Variable	Description
First level of consistency. It considers consistency within each dimension in an independent way.	CONSISTENCYE	The performance of the environmental categories is above or equal to the median of the reference group.
	CONSISTENCYC	The performance of the social categories is above or equal to the median of the reference group.
	CONSISTENCYG	The performance of the corporate governance categories is above or equal to the median of the reference group.
Second level of consistency. Bidimensional consistency.	CONSISTENCYES	The performance of the environmental and social categories is above or equal to the median of the reference group.
	CONSISTENCYCSG	The performance of the social and corporate governance categories is above or equal to the median of the reference group.
	CONSISTENCYEG	The performance of the environmental and corporate governance categories is above or equal to the median of the reference group.
Third level of consistency. Interdimensional ESG consistency.	CONSISTENCYESG	The performance of the environmental, social and corporate governance categories is above or equal to the median of the reference group.

Focusing on control variables and consistent with previous empirical research [14,51,52], the firm specific variables that could affect the economic performance are: the natural log of total assets as an indicator for size (SIZE); capital expenditures divided by total assets as proxy for investment ratio (CAPEX); total debt per unit of total assets as a proxy for capital structure (LEVERAGE); and annual growth rate of sales as indicator of growth (GROWTH). Additionally, as Muhammad et al. [53] state the relationship between environmental performance and financial performance depends on the macroeconomic context: growth or contraction period. In this regard, a dummy variable is created to differentiate the periods before and after the 2007 financial crash (YEARS CRISIS). Financial industry plays an important role in the economic development and their industrial peculiarities such as self-regulation—e.g., Equator Principles—or explicit economic benefits from outside sources—e.g., public funds to bailout distressed financial institutions—may affect their economic performance [39,54]. For these reasons, this study includes an additional dummy variable in order to reflect differences between finance and insurance industry (FINANCIAL INDUSTRY) and the rest of industries. For addressing the idiosyncrasy among regions according to their legal system, this study uses the Zattoni and Cuomo [55] criterion to classify countries according to the legal origin system (ENGLISH SYSTEM) (FRENCH SYSTEM) (GERMAN SYSTEM) (SCANDINAVIAN SYSTEM). In this case, the omitted dummy is the one for countries with a legal system based on the English law tradition. Moreover, this study includes the dependent variable lagged by one period ( $ECONOMIC_{t-1}$ ) with the aim to capture the existence of some inertia in economic performance year after year.

### 3.3. Model and Method

In order to test the hypotheses, this study estimates the linear regression models presented in Equation (1).

$$\begin{aligned}
 ECONOMIC_{i,t} = & \beta_0 + \beta_1 \times ECONOMIC_{i,t-1} + \beta_2 \times ESG_{i,t} + \beta_3 \times INTERDIMENSIONAL\ CONSISTENCY_{i,t} \\
 & + \beta_4 \times SIZE_{i,t} + \beta_5 \times CAPEX_{i,t} + \beta_6 \times GROWTH_{i,t} + \beta_7 \times LEVERAGE_{i,t} + \beta_8 \times YEARS\ CRISIS_i \\
 & + \beta_9 \times FRENCH\ SYSTEM_{i,t} + \beta_{10} \times GERMAN\ SYSTEM_{i,t} + \beta_{11} \times SCANDINAVIAN\ SYSTEM_{i,t} \\
 & + \beta_{12} \times FINANCIAL\ INDUSTRY_{i,t} + \eta_i + v_{it}
 \end{aligned} \quad (1)$$

Consistent with previous research [18,56], Equation (1) contains economic performance as the dependent variable, which is explained by ESG performance, interdimensional ESG consistency and control variables. The “Interdimensional Consistency” variable specified in Equation (1) is divided into different variables that reflect the strengths in the ESG dimensions and allow testing the effect of interdimensional consistency on economic performance presented in Hypothesis 2. This study tests the hypotheses by regressing 8 models because the joint estimation of the interaction variables presents

problems of collinearity. Table 2 displays the consistency variables included in each model and their purpose. The problem collinearity has been explored by means of the variance inflation factors (VIF) for the independent variables. The VIF values in the different models are below 10 except for variables with interaction terms, but, in this case, multicollinearity should not be a significant concern [57].

Given the feature of the data (cross-sectional and time-series data), this study uses the panel data methodology. In this case, it is necessary to consider the existence of latent unobservable effects specific to each firm ( $\eta_i$ ). Moreover, the variables used in this research may present endogeneity problems. Wooldridge [58] suggests that the general approach for estimating models that present problems of endogeneity is the use of instruments. In this regard, an instrumental variable approach is applied to address the endogeneity problem; in particular, the system-GMM estimator proposed by Arellano and Bover [59] and Blundell and Bond [60]. This estimator also addresses the presence of unobserved heterogeneity since it transforms the variables into first differences. This estimator has been implemented using a two-step methodology, since the estimates are efficient and asymptotically robust in the presence of heteroscedasticity.

**Table 2.** Consistency variables included in each model and their purpose.

Model	Variables Included in "Interdimensional Consistency"	Types of Consistency Included in the Model and Their Purpose
Model 1 (Baseline)	-	Without interdimensional ESG consistency. It allows knowing the coefficient associated with ESG before including interdimensional ESG consistency.
Model 2	CONSISTENCYESG	Third level of interaction variables: interdimensional ESG consistency.
	CONSISTENCYESG x ESG	It allows knowing the effect of the interdimensional ESG consistency on economic performance.
Model 3	CONSISTENCYE	First level of interaction variables, considering strengths for the environmental dimension.
	CONSISTENCYE x ESG	It allows knowing the effect of being consistent within environmental dimension on the ESG-EP relationship
Model 4	CONSISTENCYC	First level of interaction variables, considering strengths for the social dimension.
	CONSISTENCYC x ESG	It allows knowing the effect of being consistent within social dimension on the ESG-EP relationship.
Model 5	CONSISTENCYG	First level of interaction variables, considering strengths for the corporate governance dimension.
	CONSISTENCYG x ESG	It allows knowing the effect of being consistent within corporate governance dimension on the ESG-EP relationship.
Model 6	CONSISTENCYES	Second level of interaction variables: bidimensional consistency between environmental and social dimensions.
	CONSISTENCYES x ESG	It allows knowing the effect of being consistent within and between environmental and social dimensions on the ESG-EP relationship.
Model 7	CONSISTENCYSG	Second level of interaction variables: bidimensional consistency between social and governance dimensions.
	CONSISTENCYSG x ESG	It allows knowing the effect of being consistent within and between social and corporate governance dimensions on the ESG-EP relationship.
Model 8	CONSISTENCYEG	Second level of interaction variables: bidimensional consistency between environmental and corporate governance dimensions.
	CONSISTENCYEG x ESG	It allows knowing the effect of being consistent within and between environmental and corporate governance dimensions on the ESG-EP relationship.

#### 4. Empirical Results and Discussion

Table 3 shows the descriptive statistics and a correlation matrix for the main variables. All variables of consistency are correlated with the level of economic performance. The variables that consider strengths in Environmental, Social, or Governance terms present a positive relationship with EP and ESG performance. Another preliminary result of the correlation matrix is that the economic performance presents the strongest correlation with respect to environmental dimension and the weakest correlation with respect to corporate governance.

Table 3. Descriptive Statistics and Correlation Matrix.

Variable	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	
(1) ECO	−0.43	18.83																				
(2) ESG	56.43	18.75	0.46***																			
(3) CONSISTENCYE	0.38	0.49	0.33***	0.41***																		
(4) CONSISTENCYE x ESG	25.14	33.85	0.37***	0.57***	0.95***																	
(5) CONSISTENCYC	0.19	0.39	0.25***	0.20***	0.47***	0.42***																
(6) CONSISTENCYC x ESG	12.28	26.56	0.28***	0.33***	0.45***	0.47***	0.95***															
(7) CONSISTENCYG	0.15	0.36	0.13***	0.12***	0.36***	0.29***	0.49***	0.40***														
(8) CONSISTENCYG x ESG	9.46	23.53	0.16***	0.25***	0.34***	0.34***	0.43***	0.41***	0.95***													
(9) CONSISTENCYES	0.16	0.37	0.22***	0.18***	0.56***	0.51***	0.91***	0.86***	0.50***	0.43***												
(10) CONSISTENCYES x ESG	10.41	24.87	0.25***	0.30***	0.54***	0.55***	0.86***	0.91***	0.41***	0.42***	0.95***											
(11) CONSISTENCYSG	0.10	0.30	0.10***	0.03***	0.38***	0.28***	0.68***	0.57***	0.78***	0.68***	0.69***	0.57***										
(12) CONSISTENCYSG x ESG	5.74	18.45	0.12***	0.14***	0.35***	0.32***	0.64***	0.62***	0.73***	0.73***	0.64***	0.61***	0.94***									
(13) CONSISTENCYEG	0.12	0.33	0.11***	0.10***	0.47***	0.40***	0.54***	0.44***	0.87***	0.82***	0.60***	0.50***	0.82***	0.76***								
(14) CONSISTENCYEG x ESG	7.43	21.24	0.13***	0.22***	0.45***	0.44***	0.46***	0.44***	0.82***	0.87***	0.52***	0.50***	0.72***	0.76***	0.94***							
(15) CONSISTENCYESG	0.09	0.29	0.08***	0.02***	0.41***	0.30***	0.65***	0.54***	0.75***	0.65***	0.72***	0.60***	0.96***	0.90***	0.86***	0.75***						
(16) CONSISTENCYESG x ESG	5.27	17.71	0.11***	0.13***	0.38***	0.35***	0.61***	0.59***	0.70***	0.70***	0.68***	0.65***	0.90***	0.95***	0.80***	0.80***	0.94***					
(17) SIZE	15.19	2.14	0.30***	0.39***	0.30***	0.36***	0.20***	0.26***	0.09***	0.15***	0.19***	0.25***	0.05**	0.11***	0.07***	0.13***	0.03*	0.10***				
(18) CAPEX	6.52	12.58	−0.03†	−0.07***	−0.05*	−0.04*	−0.00	−0.01	−0.01	−0.01	0.00	0.00	0.02	0.02	0.01	0.00	0.02	0.02	−0.17***			
(19) GROWTH	0.92	37.98	−0.01	−0.04*	0.01	0.00	0.03†	−0.01	0.03*	0.01	0.03†	0.01	0.05**	0.03	0.04*	0.02	0.05**	0.03	−0.01	−0.01		
(20) LEVERAGE	63.27	23.34	0.12***	0.16***	0.14***	0.15***	0.09***	0.11***	0.02	0.04*	0.08***	0.10***	0.00	0.02	0.02	0.04*	−0.01	0.01	0.37***	−0.11***	−0.02	

The table shows the descriptive statistics and the correlation of the data included in the unbalanced panel (full sample). †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .



Tables 4–6 present the eight models regressed in this study. Model 1 (Table 4) presents the baseline model, which does not include any indicator of ESG consistency. In line with the results of a large number of studies [17–19], a positive relationship is evident between the level of ESG performance and economic performance (0.4253,  $p$ -value < 0.001). This relationship remains positive and highly significant when the ESG consistency is included in the model (Models 2–8). Therefore, this result supports the Hypothesis 1 “The level of ESG performance is positively associated with economic performance”.

**Table 4.** Estimates of the ESG—Economic performance relationship: Baseline and ESG consistency.

Dependent Variable: ECONOMIC <sub><i>i,t</i></sub>	Model (1)	Model (2)
ECONOMIC <sub><i>i,t-1</i></sub>	0.2741 *** (0.0258)	0.2656 *** (0.0252)
ESG <sub><i>i,t</i></sub>	0.4253 *** (0.0258)	0.4338 *** (0.0483)
CONSISTENCYESG <sub><i>i,t</i></sub>	-	13.0526 *** (3.7814)
CONSISTENCYESG <sub><i>i,t</i></sub> × ESG <sub><i>i,t</i></sub>	-	-0.1694 ** (0.0570)
SIZE <sub><i>i,t</i></sub>	0.7029 (0.4898)	0.7903 (0.4893)
CAPEX <sub><i>i,t</i></sub>	0.0647 (0.0410)	0.0675 (0.0417)
GROWTH <sub><i>i,t</i></sub>	0.0207 (0.0180)	0.0030 (0.0208)
LEVERAGE <sub><i>i,t</i></sub>	-0.1453 * (0.0570)	-0.1424 † (0.0555)
YEARS CRISIS <sub><i>t</i></sub>	-3.991 *** (0.5853)	-3.8460 *** (0.5930)
FRENCH SYSTEM <sub><i>i,t</i></sub>	-2.5434 * (1.2097)	-3.0410 * (1.2541)
GERMAN SYSTEM <sub><i>i,t</i></sub>	0.9871 (1.6328)	-0.4287 (1.6833)
SCANDINAVIAN SYSTEM <sub><i>i,t</i></sub>	-2.4834 (1.7571)	-2.7067 (1.8282)
FINANCIAL INDUSTRY <sub><i>i,t</i></sub>	3.0646 * (1.3768)	3.4496 * (1.4064)
CONSTANT	-23.5841 *** (4.3249)	-25.8262 *** (4.4804)
Wald test	414.19 ***	424.25 ***
N. obs.	2835	2835
Hansen test $\chi^2$	360.59	368.62
AR <sub>1</sub>	-10.93 ***	-10.94 ***
AR <sub>2</sub>	1.58	1.53

The table reports the two-step GMM system estimator. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ . Standard errors are in brackets.

Model 2 (Table 4) reflects the interdimensional ESG consistency, by means of two indicators: CONSISTENCYESG, which represents those firms that have all the performance of the extra-financial categories above or equal the median of the reference group; and CONSISTENCYESG × ESG,

which denotes the combination of ESG performance and those firms that are over or equal the median in all the categories associated with environmental, social and governance dimensions. The coefficient of the variable *CONSISTENCYESG* is significant and with the expected sign. However, the variable *CONSISTENCYESG × ESG* is significant but with an opposite sign, which means that the marginal effect of ESG performance on EP is positive but is lower when a firm is consistent in all categories of the three dimensions: environmental, social and corporate governance (0.4338–0.1694,  $p < 0.01$ ), than a firm that shows mixed or lower performance in some or all extra-financial categories to their peers (0.4338,  $p < 0.001$ ). This result does not support Hypothesis 2 “The interdimensional consistency affects positively to the effect of the ESG performance on economic performance”.

Models 3–5 (Table 5) consider the first level of ESG consistency, i.e., the strengths within each ESG dimension. The results show that the coefficients of the consistency variables are not significant for the environmental dimension. Regarding social and corporate governance dimensions, the marginal effect of ESG performance on EP is lower for those firms that offer a consistency within social dimension and corporate governance dimension independently. The marginal effect is given by the coefficient (0.4252–0.1067,  $p < 0.10$ ) for those firms that have the performance of all their social categories over or equal their peers and by the coefficient (0.4541–0.1303,  $p < 0.05$ ) for those firms that have the performance of all their corporate governance categories over or equal their peers.

Models 6–8 (Table 6) take into account the bidimensional consistency. In the second level of consistency, for those firms that present jointly strengths in social and environmental dimensions (Model 6) the finding reveals that there are not significant differences for the marginal effect of ESG performance on EP than for the rest of firms. However, focusing on consistency between social and corporate governance dimensions, Model 7 shows that those firms that present social and corporate governance bidimensional consistency have a lower impact (0.4496–0.1903,  $p < 0.05$ ) of ESG performance on economic performance than the rest. A similar result is obtained when environmental and corporate governance bidimensional consistency is explored. Model 8 displays a lower effect (0.4554–0.2015,  $p < 0.001$ ) of ESG performance on economic performance for those firms that have better or equal results in all categories associated with environmental and corporate governance dimensions.

Consequently, the results obtained exploring consistency in the three levels—third level of consistency: Model 2; second level of consistency: Models 6–8; and first level of consistency: Models 3–5—do not support Hypothesis 2. Note that these outcomes do not mean that the market actors do not appreciate interdimensional consistency, since the dummy variable coefficient, when significant, is always positive. Considering also the interaction variable, the global effect of ESG on EP for those firms that present interdimensional consistency is greater than the rest, except for the higher levels of ESG performance. A possible explanation of this outcome is that ESG initiatives and performance may differ in their visibility, allowing firms to offset strategically. In this regard, Torres et al. [61] showed that local social responsibility policies in communities generate brand value and foster the positive effect of corporate social responsibility toward other stakeholders, particularly customers. In line with this argument, those firms that concentrate their efforts to be leaders on those extra-financial categories that have the greatest visibility may increase the effectiveness of ESG practices to stakeholders and credibility to the firm, obtaining better economic performance than those firms that intends to stand equal or above their peers in all the extra-financial categories.

Additionally, another possible argument could be that the market interest in nonfinancial information differs depending on the analyzed dimension and within each dimension. In this sense, Eccles and Serafeim [62] examined the interest of professional investors in 247 nonfinancial metrics included in Bloomberg database and they concluded that, at the aggregate market level, interest in environmental information was greater than in social one, due to the greater concern about climate change and the fact that environmental issues are easier to quantify and integrate into valuation models. Regarding corporate governance dimension, professional investors were mainly interested in the principles of good governance, which are associated to traditional board characteristics such

as percentage and number of independent directors, size of the board, or CEO duality, becoming other governance aspects related to environmental and social dimensions, for example “Executive Compensations linked to ESG”, less important.

**Table 5.** Estimates of the ESG—Economic performance relationship: ESG interdimensional consistency.

Dependent Variable: ECONOMIC <sub><i>i,t</i></sub>	Model (3)	Model (4)	Model (5)
ECONOMIC <sub><i>i,t-1</i></sub>	0.2698 *** −0.0246	0.2681 *** −0.0259	0.2655 *** −0.026
ESG <sub><i>i,t</i></sub>	0.4045 *** −0.0548	0.4252 *** −0.0513	0.4541 *** −0.0488
CONSISTENCYE <sub><i>i,t</i></sub>	3.5913 −3.0205	-	-
CONSISTENCYE <sub><i>i,t</i></sub> × ESG <sub><i>i,t</i></sub>	−0.024 −0.0472	-	-
CONSISTENCY <sub><i>i,t</i></sub>	-	10.3122 * −4.5797	-
CONSISTENCY <sub><i>i,t</i></sub> × ESG <sub><i>i,t</i></sub>	-	−0.1067 † −0.0623	-
CONSISTENCYG <sub><i>i,t</i></sub>	-	-	9.5119 * −3.9022
CONSISTENCYG <sub><i>i,t</i></sub> × ESG <sub><i>i,t</i></sub>	-	-	−0.1303 * −0.0562
SIZE <sub><i>i,t</i></sub>	0.7451 −0.4731	0.7151 −0.5096	0.7079 −0.4613
CAPEX <sub><i>i,t</i></sub>	0.0621 −0.0412	0.0606 −0.0419	0.0677 † −0.0411
GROWTH <sub><i>i,t</i></sub>	0.0159 −0.0201	0.0034 −0.0185	0.0091 −0.0197
LEVERAGE <sub><i>i,t</i></sub>	−0.1520 ** −0.0541	−0.1478 ** −0.0553	−0.1460 ** −0.0535
YEARS CRISIS <sub><i>t</i></sub>	−3.8576 *** −0.5946	−3.7566 *** −0.5874	−3.9819 *** −0.5824
FRENCH SYSTEM <sub><i>i,t</i></sub>	−2.8272 * −1.2287	−3.2257 ** −1.2308	−2.6246 * −1.26
GERMAN SYSTEM <sub><i>i,t</i></sub>	0.5122 −1.5919	0.2034 −1.6048	0.4062 −1.5449
SCANDINAVIAN SYSTEM <sub><i>i,t</i></sub>	−2.8280 † −1.7186	−2.8541 −1.8105	−2.5931 −1.7939
FINANCIAL INDUSTRY <sub><i>i,t</i></sub>	2.9252 * −1.4231	3.3089 * −1.455	3.6052 ** −1.3696
CONSTANT	−23.1980 *** −4.4135	−24.0442 *** −4.6122	−25.4061 *** −4.408
Wald test	421.78 ***	428.51 ***	443.48 ***
N. obs.	2835	2835	2835
Hansen test $\chi^2$	363.96	367.21	363.54
AR <sub>1</sub>	−11.04 ***	−10.95 ***	−10.84 ***
AR <sub>2</sub>	1.64	1.54	1.48

The table reports the two-step GMM system estimator. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ . Standard errors are in brackets.

**Table 6.** Estimates of the ESG—Economic performance relationship: Bidimensional consistency and ESG interdimensional consistency.

Dependent Variable: ECONOMIC <sub>i,t</sub>	Model (6)	Model (7)	Model (8)
ECONOMIC <sub>i,t-1</sub>	0.2694 *** −0.0252	0.2644 *** −0.0253	0.2660 *** −0.0254
ESG <sub>i,t</sub>	0.4052 *** −0.0492	0.4496 *** −0.049	0.4554 *** −0.0508
CONSISTENCYES <sub>i,t</sub>	6.4106 * −3.1688	-	-
CONSISTENCYES <sub>i,t</sub> × ESG <sub>i,t</sub>	−0.0632 −0.0447	-	-
CONSISTENCYSG <sub>i,t</sub>	-	15.6871 ** −5.8407	-
CONSISTENCYSG <sub>i,t</sub> × ESG <sub>i,t</sub>	-	−0.1903 * −0.0783	-
CONSISTENCYEG <sub>i,t</sub>	-	-	14.2274 *** −3.5328
CONSISTENCYEG <sub>i,t</sub> × ESG <sub>i,t</sub>	-	-	−0.2015 *** −0.05
SIZE <sub>i,t</sub>	0.7904 −0.4949	0.758 −0.4977	0.6554 −0.467
CAPEX <sub>i,t</sub>	0.0583 −0.0408	0.0683 −0.0412	0.0687 † −0.0415
GROWTH <sub>i,t</sub>	0.0088 −0.019	−0.0017 −0.0197	0.0079 −0.0207
LEVERAGE <sub>i,t</sub>	−0.1382 * −0.0547	−0.1433 ** −0.0521	−0.1354 ** −0.051
YEARS CRISIS <sub>t</sub>	−3.7141 *** −0.5826	−3.8328 *** −0.6046	−3.9166 *** −0.5875
FRENCH SYSTEM <sub>i,t</sub>	−3.1206 * −1.2541	−3.256 * −1.2735	−2.7700 * −1.286
GERMAN SYSTEM <sub>i,t</sub>	0.0721 −1.6318	0.0992 −1.6959	0.437 −1.7054
SCANDINAVIAN SYSTEM <sub>i,t</sub>	−2.8372 −1.8315	−2.7648 −1.7937	−2.4610 * −1.7717
FINANCIAL INDUSTRY <sub>i,t</sub>	2.8600 * −1.4032	3.6932 ** −1.4052	3.6105 * −1.407
CONSTANT	−24.2197 *** −4.3863	−26.2627 *** −4.6106	−25.4296 *** −4.5046
Wald test	385.95 ***	444.22 ***	414.21 ***
N. obs.	2835	2835	2835
Hansen test $\chi^2$	366.53	362.47	368.76
AR <sub>1</sub>	−10.97 ***	−10.94 ***	−10.92 ***
AR <sub>2</sub>	1.57	1.47	1.52

The table reports the two-step GMM system estimator. †  $p < 0.10$ ; \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ . Standard errors are in brackets.

With respect to control variables, the leverage, the French legal system and the dummy that contains the years of the financial crisis are statistically significant and negative related to the economic performance. Regarding the industry dummy, those firms of the finance and insurance industry have

a positive effect on economic performance. The rest of the control variables, i.e., firm size, invest ratio, and growth rate of sales show the expected sign although they are not statistically significant.

To further check the robustness of the main results, this study has regressed Models 1–8 using full sample. In this case, the results are available upon request from the authors. It is observed that the coefficients and the level of significance have not changed substantially, thus the above-mentioned findings are supported. In addition, this study reports the results of two specification tests in Tables 4–6: the second—order serial correlation test (AR2) and the Hansen test of over-identification. The results do not reject the validity of the Models 1–8 and the hypothesis that the instruments are valid.

## 5. Conclusions

Numerous studies have investigated the link between corporate social responsibility and economic performance. A broad range of these studies have used a particular score of a corporate social responsibility rating to measure social performance without considering the differences in the outcomes among the dimensions. This study advances in the understanding of the ESG—economic performance relationship, exploring the impact of interdimensional ESG consistency on this relationship. For that end, this paper identifies those firms that present strengths in environmental, social and governance dimension with respect to their peer groups and builds three different levels of ESG consistency: (i) the first level does not represent any interdimensional consistency; (ii) the second level shows bidimensional consistency; and (iii) the third level denotes interdimensional ESG consistency. To test empirically the hypotheses, this paper uses a panel of listed firms from EU-15 during the period 2002–2011 and applies the GMM estimator system, which addresses heterogeneity and endogeneity problems.

The main finding reveals that those firms that have interdimensional consistency present a global effect of ESG on EP greater than the rest, except for higher levels of ESG performance. This result points out that market actors do not penalize the offsetting effect for those firms that concentrate their efforts to be leaders on some extra-financial categories which allow them to obtain a noticeable good result in the ESG rating as a whole.

This study has important implications for academics and practitioners. For academics, this study proposes a new type of strategic and organizational consistency, “the interdimensional ESG consistency”, and tests its effect on economic results. In addition, the paper encourages the use of relative measures of economic and ESG performance based on the context—industry, year and country—and applies these measures to identify those firms that present strengths in ESG dimensions. For business practice, this study suggests that the consistency effect of extra-financial dimensions on economic results could be conditioned by the market preferences, which are unbalanced between environmental, social and governance dimensions and market actors do not penalize the offsetting effect of the performance from different dimensions when the global ESG performance is high. In this regard, public policy should change the approach of the normative and voluntary guidelines towards the concept of “strong sustainability”, which allows a lower degree of tolerance to compensate among the different extra-financial dimensions. This fact will allow market actors to consider in their decision-making process the variable “interdimensional consistency” and to call into question those firms that behind an excellent global ESG performance conceal weaknesses in some extra-financial dimensions.

The findings of this empirical research should be viewed in light of potential limitations that might open new areas for future research. A limitation of this study is that empirical findings are conditioned by the sample and the availability of information. Samples with companies from other regions are clearly needed to test the robustness of the results. The results of this study might also be limited by the ESG rating and the models used. On the one hand, the ESG performance variable could be enhanced by considering the market actor preferences [32] or adopting a lifecycle approach. On the other hand, the modelization of the relationship between ESG-EP could be tested

introducing inter-temporal effects [25], as well as inverted U-shape relationship between dependent and independent variables [63].

The results of this paper may serve as a starting point for future research in strategic consistency, examining how the interdimensional ESG consistency affects the economic value for the different stakeholders, such as revenue and client loyalty or shareholder returns. This future study could improve the knowledge on the individual stakeholder's interests and their relationship with the interdimensional ESG consistency.

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