Corruption and ESG performance

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This draft: January 20th, 2023

JEL Classification: G30; G39; K42; M14

Keywords: ESG rating; Corporate Sustainability; Corruption; Perception of corruption

Abstract

This paper deals with the relationship between corruption and ESG performance. Using data from the Refinitiv and World Value Survey's (WVS) databases, our results suggest that the effect of corruption on ESG performance depends on the country level of economic development. More specifically, using the Gross Domestic Product (GDP) and the Social Progress Index (SPI) as indicators for economic development, we find that, while corruption has a negative effect on ESG performance in developed countries, the effect is reverse in developing countries. This result echoes with the literature showing that in developing countries, corruption can foster corporate performance. Our study suggests that a similar effect is observed on ESG performance.

1. Introduction

More than just a marketing phenomenon, sustainable development has become a necessity for the firms which envisage long term activity. The existing literature indicates that investing in ESG measures can better anticipate the asymmetric information and its risks (Lopatta et al., 2017). It is especially true today, with climate change. However, economic actors are not at the same level in this domain. Indeed, we can observe some inequalities between sectors and world regions. The telecommunication or energy sectors are less advanced in this respect and several governments do not take strong initiatives, believing that ESG initiatives are the matter of an individual decision driven by market's mechanisms and volunteering (Deegan and Shelly, 2014). Many other factors may explain this disparity, like the cost level, law context or the demand (R. N. Sanyal and S.K. Subarna, 2002; M. D. Hayford, 2007; D. Treisman, 2000…).

In this paper, we investigate the effect of corruption on ESG performance. A country's social structure and its degree of development are important for a firm's ESG performance. For Jha and Cox (2015), Cai et al (2016) or Liang and Renneboog (2017), there is a mutual dependence between the firm and its environment depending on factors like the economic development, country's independence, law, or the culture. These elements are sensitive to corruption and can become a barrier to realizing economies of scales through a firm's individual strategies (Coleman, 1990). The majority of the studies demonstrate that there is a negative relationship between ESG performance and corruption. Even if we mostly use global and pillars scores as dependant variables, we are aware of the literature critics about that. That's why we don't forget to look at specific indicators like the CSR policy (Ucar and Staer, 2020; Hossain and Kryzanowski, 2021).

Corruption can be defined as an individual's specific behaviour that goes against his official or moral duty, drives by financial gains or social (Pellegrini, 2011). It is an important factor for firms because it can disrupt the resource flow.

According to Mauro (1995) and Wei (2000) corruption can be interpreted as an investment tax: when the supplementary cost is too big, certain projects may be reported or terminated. Then, corruption becomes a discouragement factor that we can find in "upstream" of the firm's project, for example in financial access (Statnik and Vu, 2020) and in "downstream" like in market conditions (Labic, 2021). Nevertheless, when corruption is too critical and the local institutions are subject to that, it can be considered as an unavoidable condition which forces economics agents to adapt and evolve this kind of environment (Mintzberg et al., 1998).

We can note that some firms use corruptive ways to break market barriers. In China, for example, it is common to pay backhanders to banks to accelerate credit demands (Chen and al., 2013). Therefore, the corruption cost is directly integrated in investment decisions, even if it concerns sustainable engagement.

Corruption is not a shock but a succession of events, rather stable over the time, which can be a source of a parallel economy, informal, outside of government's control (Algan et al., 2012). The scientific literature identifies 6 key elements to explain it (Treisman, 2000): religions, legal traditions (common law, civil law…); economic development level, imports level, political organizations of country (republic, monarchy, federal states…) and the regime (democracy, dictate, autocracy…). To soften corruption effects, the authorities may act in two lines: directly on economic agents by soothing financials constraints (Kong et al., 2021) or on the firm's context via its social capital, for example (Janjuha-Jivraj, 2003; La Porta, 1997).

It is difficult to have a good representation of the corruption importance. Each country has its own concepts, depending on its norms and values. Especially, because corruption is a negative element, the reality can be hidden for a better image. To have an idea of corruption's importance, we can do a local evaluation of corruption by identification of its consequences, which need to be economics and without violence (Uslaner, 2006). Then its form will be: bribe, embezzlement of funds, extortion, favouritism, and nepotism… Most of the studies use federal condemnations of each state as a proxy (Ucae and Staer, 2020) or the CPI (Corruption Perception Index) from Transparency International.

In this study, we chose to employ a similar approach to Lobez et al. (2021) which permits to evaluate the degree of corruption at local level. More precisely, with a sample of 4,189 firms over the period 2017-2020 (or around 16,756 firm-year observations), we construct this local measure in using the corruption's perception in area of 100 km around each localization of firms in our sample. This methodology has two advantages. First, as the measure obtained is firm-specific, it will be different for each value of our dependent variable. Second, it provides us with a measure of corruption that is not determined at the country level. Thus, we can control for the available country invariants.

It is a fact that investors include more and more extra financial information, like sustainable performance, in their portfolio's strategy (Chen et al., 2021). So, it is a source of value that firms need to take into consideration (Berg et al., 2022). This realization is expressed through ESG scores, which can be calculated by the company itself or by a rating agency. For the moment, there is no standardization of the scoring methodology and the choice of indicators is

rather subjective. However, most scores are based on the principles of ponderation and means. In the literature, most papers prefer to use an indicator than a score. According to Chatterji et al. (2016) it can be explained by the fact that with a score we do not know the origin of what we want to measure. There is often a lot of incomplete information due to missing data. Here, we decide to analyse ESG score from Refinitiv because its methodology is one of the most transparent, based on raw data (Berg et al., 2022).

In contrast to Hossain and Kryzanowski (2021), we find that corruption is positively correlated with firms' ESG performance. However, this contradiction disappears when we study developed and developing countries separately. While the correlation stays positive for the latter, it becomes negative for the former, and we find here a similar result to that of Hossain and Kryzanowski (2021) obtained for the USA.

The paper is structured as follows. In the second part presents the sample and method, the second part discusses the results, and the last par concludes.

2. Sample and method

2.1 The sample

To build our sample, we proceed in two-step. The first one is to extract data: the firms' financial and non-financial information from Refinitiv database, and peoples' perception of corruption from the World Value Survey's database (WVS). In the second step, we geocode (through a Google API key) the address of each firm and of WVS's respondents, and we use these coordinates to create a local corruption measure determined in an area with a radius of 100 km around each firm.

We drop from our sample, the companies that we don't find the address, the bankrupt firms, the dummy companies, or the firms which were absorbed following a recent M&A. In addition, countries with less than 10 observations are deleted.
So, we obtain an unbalanced panel of 4,189 firms over the period 2017-2020 (16,756 firm-year observations) from 12 countries: Argentina, China, Colombia, Egypt, Greece, Indonesia, Malaysia, Mexico, Philippines, Russia, Singapore, and the United States.

2.2 Dependent Variable: ESG score

There is a lack of consensus about ESG measures in empirical literature. We have a lot of different ratings with different methodologies. In this paper, we use Refinitiv score (*esg_scr*) scale to 0 to 100 (best note), using the process of artificial intelligence and integrating around 282 indicators in its calculations.

Some studies question its rating's independent since the merge with FTSE Russel. However, according to F. Berg, J. B. Kölbel and R. Rigobon (2022), Refinitiv have the most individual indicators. Its rating has similarities with those of famous score like Sustainalytics or Moody's ESG. Moreover, its methodology is easily replicable and accessible.

We also decide to test our model on the 3 pillars scores: *env_scr* (environment); *soc_scr* (social) and *gov_scr* (government) to determine which part of the ESG performances is the most influence by corruption. Especially, when these variables are not equal between them: some pillar scores have more information and elements than others.

2.3 Independent variable: Corruption

We construct our measure of corruption (corrupt) in using the following question (Q120) to WVS survey (wave 7): "How high is the risk in this country to be held accountable for giving or receiving a bribe, gift, or favour in return for public service? To indicate your opinion, use a 10-point scale, where "1" means "no risk at all" and "10" means "very high risk". The answers are coded from 0 "no risk" to 10 "high risk". The building of our measure of corruption is the following. Firstly, we use GPS coordinates of both firms and interviewed by WVS. The underlying idea of the process is the following (it is similar than the one implemented by Lobez et al. (2021)). For each firm in our sample, we determine an average of the answers made to question Q120 of the WVS survey by interviewees living within 100 km of the firm. Due to the way that question Q120 is asked, the average obtained varies in opposite to corruption. To solve this issue, we define our variable *corrupt* as the inverse of the previous average.

Focusing on corruption measure based on people's perception allow us to analyse areas' disparities through local culture and psychologic behaviours (Melgar et al., 2010). Especially for countries, like in our database, where corruption is a real concern and tend to have the same "real" corruption's level or the truth is attenuated by global rating.

We have also compared the consistency of our proxies using the CPI from Transparency International. Frequently use in empirical studies (Husted (1999); DiRienzo et al. (2007); Seleim and Bontis (2009); Gelbrich and al. (2016); Domashova and Politova (2021)). Through personal experience, it measures corruption at national level with a ration g scale to 0 to 100 (lowest level of corruption).

One question that can be asked is the following: is our measure of corruption accurate? To answer this issue, we compare the consistency of our proxy using the CPI from Transparency International. Frequently use in empirical studies (Husted (1999); DiRienzo et al. (2007); Seleim and Bontis (2009); Gelbrich and al. (2016); Domashova and Politova (2021)). Through personal experience, it measures corruption at national level with a ration g scale to 0 to 100 (lowest level of corruption). From our proxy of corruption, we determine an average for each country. Correlation between CPI and our measure is -0.6 and highly significant. This result shows that our corruption measure correctly captures the measured characteristic.

2.4 Empirical model

Following the literature, we start to test the following hypothesis:

H1: "A firm's ESG performance decreases with corruption: the more a firm is localized in an area where corruption is strong, the worse its ESG performances will be".

$$esg\_scr_{i,t} = \alpha + \beta 1 corruption_i + \beta 2\ controls_{i,t} + FE + \varepsilon_{i,t}$$

As control variables, we have decided to only this firm's attributes: *lnmv* as a proxy of firm size; *mb* or the market-to-book ratio, the debt ratio (*debt*), *ebitda_ta* for profitability, cash-to-asset (*cash_lagta*) and dividends-to-asset (*newdiv_lagta*). We only use OLS regression with heteroscedasticity robust standard errors and year, country and sector fixed effects.

3. Results

3.1. First results

As the descriptive summary shows us (*Table 2*), the mean of our main variable of ESG performance *esg_scr* is 39.63, and its standard deviation at 18.74. Among the pillar score, we

can observe that it's the environment score has the lowest mean (25.28) with 26.88 as SD. For the corruption variable *corrupt*, the mean and SD are of 0.173 and 0.026.

At first, we can say that there is a negative and significant relationship between *corrupt* and two scores (*esg_scr and env_scr)* (*Table 3*). Splitting the sample with the mean of corruption score, a t-test (*Table 4*) nuance this correlation by the reveal of a significant difference positive for *soc_scr* and negative for *env_scr*.

For this reason, we also do mean test by separating the most corrupt areas (group1) of the less corrupt (group2). Like report below, two mean differences remain significant: *env_scr* and *soc_scr*. In other words, on average, the environment score is higher for firm being in the less corrupt area contrary to social score which is better in most corrupt zone.

Results of our first regressions (*Table 6*) display a positive and highly significant correlation between ESG performance and our variable *corrupt* for two score *(esg_scr and esg.scr)*. It means that ESG performance is higher when the corruption is stronger Hence, opposite to the conclusion of Hossain and Kryzanowski (2021), it seems that ESG performance increases with corruption. Regarding the firm attributes, only three variables follow the result of Hossain and Kryzanowski (2021): the firm's size (*lnmv*) its market-to-book (*mb*) and debt (*debt*) ratios. As we can see, its cash-to-asset ratio (*cash_lagta*) is significant at 1% level but with very small coefficient. It can be explained by the fact that this variable contains a lot of zero because Refinitiv code 0 when the value is zero or missing.

To better understand the surprising positive link between ESG performance and corruption, we decide to refine our results by separately analysing developed and less developed country. Such a split is driven by the well-established fact if corruption on the whole "sands the wheel" of economic activity (Shleifer & Vishny, 1993; Dutta and Sobel, 2006…) some studies (Leys,1965; Lui,1985) put in light that it could be, on the contrary, "grease the wheel" of economic activity. Consequently, it is no exclude that we could observe these both opposite effects also on ESG performance.

3.2. Gross Domestic Product (GDP) per capita

The first separation is realized by using the mean of the GDP per capita (*pib_hab1*) to obtain two groups: the firms from most and last developed countries.

Even if only two countries (United States and Singapore) composed the second group, we have a real significant mean difference at 1% level regarding the four scores (*Table 6*).

We can also observe that all the scores except the social pillar is stronger for the firm of first group.

This finding is confirmed by the regressions below (*Table 7*) with sign's change of corruption coefficient. Indeed, it's positive and highly significant for firms from countries with GDP per capita under the mean, and it's positive and significant for the United States and Singapore (except for the last score).
We also observe an evolution of firm's attributes: if dividends are only significant for the first group (*pib_hab = 0)*, the opposite is observed for *capex_sales*.

3.3. Social Progress Index (SPI)

For the second partitioning of our sample we use a qualitative index: the Social Progress Index (SPI) introduced by Stiglitz et al (2009). This index ranges from 0 to 100 and its objective is to reveal hidden contrasts between countries that the quantitative index cannot show us. Thus, its rating is based on the well-being and social development of each country with indicators such as health, security or human rights.

Besides, we this time, we use the rank of countries to have two equal groups. Then on one hand we have the top with: United States, Singapore, Greece, Argentina, Malaysia, Russia (*IPS_rang=1*) and on another hand: Colombia, China, Egypt, Indonesia, Mexico, and Philippines (*IPS_rang=0*).
We get similar results than precedent split: there is a significant difference between the two country groups, with again negative mean difference for the social pillar (*Table 8*).

Results of regressions (*Table 9)* totally confirm the one obtained previously confirm. The coefficients of variable *corrupt* are, on the one hand, are positive and strongly significant for countries displaying a weak SPI, and on the other hand, its coefficients are negative for the other group and significant for the first three scores.

3.4. Democratic index

For the third and last partition of our sample we use the democratic index developed by The Economist It measures the degree of democracy in a political regime by integrating five elements in is scoring (0 to 10) namely: electoral process; civil liberty; government's operation;

involvement in politics and its culture. The higher the score is, the nearer the country is to/from a perfect democracy.

The group of the six less democratic countries, is composed of Singapore, Russia, China, Egypt Indonesia, and Mexico. For the other group, the most democratic countries, is composed of Greece, Colombia, Malaysia, Argentina, United States and Philippines.

Tables 10 and *11* show we find again identical results than the previous one. We observe the same opposite sign for the corruption's coefficient in the two groups: positive and significant in the less democratic countries and positive and significant (except for the last score) in the more democratic countries.

4. Conclusion

This study investigates the link between corruption and ESG performance on a sample of 4,189 firms over the period 2017-2020 based in a range of developed and developing countries. To overcome the shortcomings of using national-level corruption measures, we followed the same methodology that Lobez et al. (2021) and constructed firm-specific corruption indicators by averaging the corruption in the firm's area of operation. Our results show that ESG performance is higher when the corruption is stronger. Such a conclusion seems to be opposite to the one of Hossain and Kryzanowski (2021). But this conclusion evolves when you consider the development (economic, social and democratic) of countries. More precisely, the positive link between ESG performance and corruption is always observed in less developed countries, but it is inverted for the more developed country. Hence, this last conclusion supports the one of Hossain and Kryzanowski (2021) obtained in US.

Interestingly, it appears that our results put in light a similar effect of corruption on ESG performance to that well-known of corruption on economic development. Thus, it appears that corruption "greases the wheel" of ESG performance in the least developed countries but "sands the wheel" in the most developed.

Table 1: Variable definitions

Variables	Description
esg_scr	*Firm's ESG score scales to 0 at 100.*
env_scr	*Firm's environment pillar score scales at 0 to 100.*
soc_scr	*Firm's social pillar score scales to 0 at 100.*
gov_scr	*Firm's government pillar score scales to 0 at 100.*
corrupt	*Perception of individuals of the risk to be condemn for corruption.*
lmnv	*Natural log of firm's market value.*
mb	*Market-to-Book ratio.*
debt	*Debt-to-asset ratio (%).*
ebidta_ta	*EBITDA scaled by total assets.*
cash_lagta	*Cash scaled by lagged total assets.*
capex_sales	*Capital expenditure (CAPEX) scaled by total sales.*
newdiv_lagta	*Total dividends paid scaled by lagged total asserts.*
pib_hab1	*(Dummy) equal 1 if superior or equal to the mean of GDP per capita, 0 else.*
IPS_rang	*(Dummy): equal 1 for the six best SPI score, 0 else.*
democ	*(Dummy): equal 1 for the six best Democratic score, 0 else.*

Table 2: Descriptive statistics

Variables	N	Mean	SD	Min	Median	Max
esg scr	14683	39.629	18.742	.66	36.77	93.52
env scr	14683	25.279	26.881	0	15.98	98.27
soc scr	14672	40.864	21.282	.44	38.055	97.91
gov scr	14683	48.301	22.124	.21	48.78	99.49
corrupt	16752	.1732231	.0256528	.1052632	.1740506	.3333333
lnmv	15593	8.475	2.456	-6.032	8.301	20.412
mb	15352	12.86	782.87	-4731.52	2.04	92264.94
debt	15931	30.005	393.97	0	22.57	48885.71
ebitda ta	15459	.031	.539	-42	.077	4.61
cash lagta	14196	6746.589	691317.94	0	.097	81778800
capex sales	13681	24.804	399.169	0	4.2	35750.08
newdiv lagta	15955	.022	.132	0	.006	10.694

Notes: This table report the principal summary statistics use in our empirical model. Our final sample is composed of 4,189 firms (around 16,756 firm year observations). To build or sample, we import firms' data with the address of their headquarters from Refinitiv dataset over the period 2017 to 2020 (N= 33,680). We extract a variable dealing about corruption's local perception with respondents' coordinates available in World Value Survey database for the same period. Next, we cross the two localizations (headquarters and people) by geocoding it with a precision of two decimals (N= 16,832). We deleted of our sample, the dummy companies, bankruptcy firms, absorb firms following an M&A or the nowhere to be found coordinates. We also drop countries with less than 10 firms record (final N=16,756). See table 1 for variables definitions.

Table 3: Global pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) esg_scr	1.000											
(2) env_scr	0.832***	1.000										
(3) soc_scr	0.864***	0.678***	1.000									
(4) gov_scr	0.696***	0.407***	0.353***	1.000								
(5) corrupt	-0.023***	-0.113***	0.012	0.005	1.000							
(6) lnmv	0.436***	0.513***	0.350***	0.224***	-0.350***	1.000						
(7) mb	-0.025***	-0.011	-0.024***	-0.024***	0.000	-0.015*	1.000					
(8) debt	0.094***	0.144***	0.082***	0.058***	0.001	0.053***	0.006	1.000				
(9) ebitda_ta	0.167***	0.197***	0.071***	0.157***	-0.014*	0.265***	-0.025***	-0.672***	1.000			
(10) cash_lagta	0.004	0.007	0.009	-0.006	-0.019**	0.032***	0.000	0.000	0.003	1.000		
(11) capex_sales	-0.019**	-0.023***	0.006	-0.024***	0.004	-0.040***	-0.001	-0.011	-0.059***	0.000	1.000	
(12) newdiv_lagta	0.021**	0.043***	0.016*	-0.002	-0.022***	0.058***	-0.002	0.007	0.065***	0.000	-0.001	1.000

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Note: this table presents the Pearson correlations between the four scores (esg_scr, env_scr, soc_scr and gov_scr) and the dependent variable (corrupt) as well as the firm's attributes.

Table 4: Two-sample t-test with equal variances: ESG scores regarding corruption

	obs1	obs2	Mean1	Mean2	diff	St Err	t value	p value
esg_scr	7596	7087	39.526	39.738	-.211	.309	-.7	.494
env_scr	7596	7087	22.343	28.426	-6.083	.441	-13.8	0
soc_scr	7592	7080	41.957	39.691	2.267	.351	6.45	0
gov_scr	7596	7087	48.327	48.273	.053	.365	.15	.884

Note: This table present a four two-sample t-test with equal variance to analyse the difference of ESG performance between the firms' area with the most corruption level (group1) and those with the lowest corruption level (group2).

Table 5: OLS regressions: baseline results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	esg_scr	esg_scr	env_scr	env_scr	soc_scr	soc_scr	gov_scr	gov_scr
corrupt	14.13**	4.877	25.55***	1.207	5.389	-11.32	9.144	11.65
	(7.084)	(6.102)	(9.903)	(8.340)	(8.185)	(6.976)	(10.83)	(7.982)
lnmv	6.198***		8.396***		6.845***		3.309***	
	(0.0982)		(0.133)		(0.114)		(0.128)	
mb	-0.000317**		-4.62e-06		-0.000446***		-0.000407**	
	(0.000157)		(0.000120)		(0.000154)		(0.000201)	
debt	0.0416***		0.0805***		0.0384***		0.0260***	
	(0.00607)		(0.00835)		(0.00789)		(0.00776)	
ebitda_ta	-0.861		-1.231		-6.212***		6.306***	
	(0.655)		(0.882)		(0.993)		(1.031)	
cash_lagta	-1.15e-07***		-8.76e-08*		3.67e-08		-2.69e-07***	
	(2.12e-08)		(5.03e-08)		(2.32e-08)		(3.84e-08)	
capex_sales	0.000297		0.000557**		0.00112***		-0.000437*	
	(0.000229)		(0.000217)		(0.000211)		(0.000265)	
newdiv_lagta	0.0844		1.947		0.515		-1.888***	
	(0.493)		(1.407)		(0.740)		(0.689)	
Constant	-34.05***	33.01***	-71.76***	20.10***	-41.24***	33.08***	11.47***	47.22***
	(3.117)	(2.944)	(4.080)	(3.925)	(3.522)	(3.335)	(3.682)	(3.161)
country FE	YES	YES	YES	YES	YES	YES	YES	YES
year FE	YES	YES	YES	YES	YES	YES	YES	YES
sector FE	YES	YES	YES	YES	YES	YES	YES	YES
vce(robust)	YES	YES	YES	YES	YES	YES	YES	YES
Observations	11,732	14,667	11,732	14,667	11,722	14,656	11,732	14,667
R-squared	0.332	0.073	0.367	0.158	0.330	0.077	0.104	0.045

*Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1*

Notes: This table report the principal results from our model equation. The first (1) column represent our main model and the second (2) we exclude of firm controls. Col (3) – Col (4), Col (5) -Col (6) and Col (7) and Col (8) take the same principle respectively for env_scr, soc_scr and gov_scr as dependent variables. For all regressions we apply three fixed effect (firm, year, and sector) and heteroscedasticity robust standard errors.

Table 6: Two-sample t-test with equal variances: ESG score regarding GDP per capita

	obs1	obs2	Mean1	Mean2	diff	St Err	t value	p value
esg_scr	4009	10674	41.858	38.791	3.067	.347	8.85	0
env_scr	4009	10674	35.595	21.404	14.191	.484	29.3	0
soc_scr	4006	10666	39.453	41.394	-1.942	.394	-4.95	0
gov_scr	4009	10674	49.608	47.809	1.799	.41	4.4	0
corrupt	4740	12012	.152	.181	-.03	.001	-77.95	0

Note: This table present a four two-sample t-test with equal variance to analyse the difference of ESG performance and corruption according to countries with a GDP per capita under the mean (group1) and those with a GDP per capita equal or over the mean (group2).

Table 7: OLS regression with the most/less developed countries (pib_hab1)

	pib_hab1=0				pib_hab1=1			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	**esg_scr**	**env_scr**	**soc_scr**	**gov_scr**	**esg_scr**	**env_scr**	**soc_scr**	**gov_scr**
corrupt	399.6***	616.8***	492.4***	81.84*	-15.11**	-20.57**	-27.42***	0.0749
	(33.30)	(45.75)	(40.88)	(43.24)	(6.812)	(9.554)	(7.616)	(11.08)
lnmv	3.480***	5.189***	4.180***	1.123***	6.669***	8.951***	7.342***	3.687***
	(0.260)	(0.334)	(0.322)	(0.339)	(0.103)	(0.143)	(0.115)	(0.138)
mb	-0.00159***	-0.00102***	-0.00140***	-0.00257***	-0.000153***	0.000145***	-0.000299***	-0.000210***
	(0.000278)	(0.000278)	(0.000264)	(0.000538)	(2.97e-05)	(3.53e-05)	(3.62e-05)	(3.78e-05)
debt	0.0428***	0.0725***	0.0325**	0.0401***	0.0291***	0.0668***	0.0287***	0.0136
	(0.0108)	(0.0158)	(0.0152)	(0.0142)	(0.00665)	(0.00991)	(0.00747)	(0.00931)
ebitda_ta	-5.816**	-7.664**	-7.864***	-1.253	-0.740	-1.781**	-6.068***	6.153***
	(2.577)	(3.882)	(3.042)	(2.751)	(0.629)	(0.853)	(1.017)	(1.095)
cash_lagta	-7.17e-08***	4.11e-09	5.86e-08**	-2.42e-07***	-0.00627***	-0.00893***	-0.00776***	-0.00204**
	(2.52e-08)	(4.13e-08)	(2.80e-08)	(4.57e-08)	(0.000793)	(0.000619)	(0.000699)	(0.000985)
capex_sales	-0.00137	0.0256	-0.00471	-0.00518	0.000413**	0.000721***	0.00120***	-0.000322
	(0.0133)	(0.0190)	(0.0178)	(0.0175)	(0.000193)	(0.000177)	(0.000201)	(0.000246)
newdiv_lagta	14.81***	14.07**	21.63***	6.069	-0.103	1.981	-0.00674	-2.012***
	(5.040)	(6.350)	(5.582)	(6.897)	(0.351)	(1.456)	(0.432)	(0.563)
Constant	-75.25***	-134.0***	-101.4***	12.09	-15.60***	-53.42***	-19.38***	23.34***
	(6.672)	(9.654)	(8.097)	(7.998)	(3.471)	(4.538)	(3.763)	(3.903)
country FE	YES	YES	YES	YES	YES	YES	YES	YES
year FE	YES	YES	YES	YES	YES	YES	YES	YES
sector FE	YES	YES	YES	YES	YES	YES	YES	YES
vce(robust)	YES	YES	YES	YES	YES	YES	YES	YES
Observations	3,487	3,487	3,484	3,487	8,245	8,245	8,238	8,245
R-squared	0.229	0.216	0.303	0.046	0.422	0.439	0.392	0.147

*Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1*

Notes: This table report the principal results from alternate regressions using the mean of GDP per capita. The column (1) to (4) represent the result of our model for a subsample composed by the firm from the less economic developed countries. To Col (5) to (8), the results for the firms from the most economic developed countries. For all regressions we apply three fixed effect (firm, year, and sector) and heteroscedasticity robust standard errors.

Table 8: Two-sample t-test with equal variances: ESG score regarding Social Progress Index (SPI)

	obs1	obs2	Mean1	Mean2	diff	St Err	t value	p value
esg_scr	3299	11384	40.805	39.288	1.518	.37	4.1	0
env_scr	3299	11384	34.962	22.473	12.49	.521	23.95	0
soc_scr	3298	11374	37.398	41.868	-4.471	.419	-10.65	0
gov_scr	3299	11384	49.627	47.916	1.711	.437	3.9	0
corrupt	3960	12792	.151	.18	-.029	.001	-70.55	0

Note: This table present a four two-sample t-test with equal variance to analyse the difference of ESG performance and corruption according to the six most socially developed countries (group1) and the other six less socially developed (group2).

Table 9: OLS regression with the most/less developed countries (IPS_rang)

	IPS_rang=0				IPS_rang= 1			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Variables	**esg_scr**	**env_scr**	**soc_scr**	**gov_scr**	**esg_scr**	**env_scr**	**soc_scr**	**gov_scr**
corrupt	444.6***	678.3***	546.6***	115.8**	-12.17*	-16.44*	-24.75***	1.546
	(36.59)	(50.44)	(44.83)	(45.96)	(6.790)	(9.476)	(7.647)	(11.05)
lnmv	3.341***	5.454***	4.166***	0.316	6.603***	8.831***	7.265***	3.692***
	(0.293)	(0.394)	(0.366)	(0.379)	(0.101)	(0.140)	(0.115)	(0.136)
mb	-0.0925	-0.199	-0.0844	-0.0527	-0.000300*	3.23e-05	-0.000438***	-0.000385*
	(0.0663)	(0.138)	(0.0738)	(0.0421)	(0.000168)	(0.000125)	(0.000167)	(0.000207)
debt	0.0301***	0.0632***	0.0226	0.0215	0.0278***	0.0662***	0.0245***	0.0162*
	(0.0102)	(0.0159)	(0.0161)	(0.0142)	(0.00660)	(0.00970)	(0.00745)	(0.00910)
ebitda_ta	-6.044**	-8.113*	-8.035**	-1.635	-0.731	-1.958**	-5.873***	6.037***
	(2.721)	(4.562)	(3.349)	(2.838)	(0.636)	(0.852)	(1.002)	(1.082)
cash_lagta	-5.93e-08**	2.70e-08	6.08e-08**	-2.16e-07***	-0.00656***	-0.00800***	-0.00796***	-0.00378***
	(2.67e-08)	(4.29e-08)	(2.93e-08)	(4.87e-08)	(0.00105)	(0.00185)	(0.00114)	(0.00127)
capex_sales	0.0212	0.0606**	0.0297	0.0102	0.000397**	0.000702***	0.00118***	-0.000331
	(0.0166)	(0.0258)	(0.0195)	(0.0257)	(0.000199)	(0.000182)	(0.000200)	(0.000249)
newdiv_lagta	6.480	18.68	6.825	11.75	0.497	2.345	0.963	-1.881***
	(10.60)	(15.14)	(12.29)	(12.07)	(0.655)	(1.473)	(0.906)	(0.673)
Constant	-78.26***	-141.5***	-111.4***	18.40**	-32.63***	-71.16***	-38.72***	11.86***
	(7.219)	(10.41)	(8.747)	(8.513)	(3.722)	(4.780)	(4.107)	(4.206)
country FE	YES	YES	YES	YES	YES	YES	YES	YES
year FE	YES	YES	YES	YES	YES	YES	YES	YES
sector FE	YES	YES	YES	YES	YES	YES	YES	YES
vce(robust)	YES	YES	YES	YES	YES	YES	YES	YES
Observations	2,924	2,924	2,923	2,924	8,808	8,808	8,799	8,808
R-squared	0.205	0.215	0.268	0.039	0.412	0.435	0.382	0.142

*Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1*

Notes: This table report the principal results from alternate regressions using the SPI. The column (1) to (4) represent the result of our model for a subsample composed by the firm from the less socially developed countries. To Col (5) to (8), the results for the firms from the most socially developed countries. For all regressions we apply three fixed effect (firm, year, and sector) and heteroscedasticity robust standard errors.

Table 10: Two-sample t-test with equal variances: ESG score regarding Democratic index

	obs1	obs2	Mean1	Mean2	diff	St Err	t value	p value
esg_scr	3524	11159	41.246	39.117	2.129	.361	5.9	0
env_scr	3524	11159	35.549	22.035	13.513	.508	26.65	0
soc_scr	3522	11150	37.993	41.77	-3.777	.41	-9.2	0
gov_scr	3524	11159	49.718	47.853	1.865	.427	4.35	0
corrupt	4264	12488	.153	.18	-.027	.001	-66.7	0

Note: This table present a four two-sample t-test with equal variance to analyse the difference of ESG performance and corruption according to the six most democratic countries (group1) and the six less democratic countries (group2).

Table 11: OLS regressions with the most/less democratic countries (democ)

	democ=0				democ=1			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	esg_scr	env_scr	soc_scr	gov_scr	esg_scr	env_scr	soc_scr	gov_scr
corrupt	416.1***	625.1***	503.6***	135.6***	-12.50*	-17.05*	-24.54***	-0.105
	(35.37)	(48.18)	(43.29)	(45.19)	(6.807)	(9.542)	(7.673)	(11.13)
lnmv	3.486***	5.363***	4.315***	0.573	6.601***	8.841***	7.268***	3.695***
	(0.291)	(0.386)	(0.358)	(0.372)	(0.102)	(0.140)	(0.115)	(0.136)
mb	-0.0845	-0.190	-0.0760	-0.0484	-0.000299*	3.24e-05	-0.000437***	-0.000384*
	(0.0629)	(0.133)	(0.0709)	(0.0406)	(0.000168)	(0.000126)	(0.000167)	(0.000206)
debt	0.0376***	0.0662***	0.0323**	0.0282**	0.0277***	0.0676***	0.0247***	0.0144
	(0.0106)	(0.0156)	(0.0159)	(0.0141)	(0.00664)	(0.00984)	(0.00747)	(0.00920)
ebitda_ta	-6.492**	-8.871**	-8.125**	-2.300	-0.646	-1.855**	-5.809***	6.044***
	(2.761)	(4.516)	(3.335)	(2.797)	(0.636)	(0.852)	(1.003)	(1.084)
cash_lagta	4.03e-07	-7.89e-07*	1.81e-07	1.09e-06***	-1.26e-07***	-8.72e-08**	3.30e-08	-2.88e-07***
	(2.98e-07)	(4.31e-07)	(3.85e-07)	(2.93e-07)	(2.10e-08)	(3.51e-08)	(2.25e-08)	(3.82e-08)
capex_sales	-0.00628	0.00786	-0.00247	-0.00372	0.000408**	0.000727***	0.00119***	-0.000329
	(0.0145)	(0.0262)	(0.0161)	(0.0192)	(0.000195)	(0.000174)	(0.000201)	(0.000248)
newdiv_lagta	13.15	25.68*	13.81	15.27	0.430	2.283	0.882	-1.929***
	(9.732)	(13.85)	(11.33)	(11.25)	(0.632)	(1.476)	(0.868)	(0.651)
Constant	-73.19***	-131.1***	-104.0***	15.78*	-32.91***	-71.60***	-39.11***	11.52***
	(6.976)	(9.783)	(8.439)	(8.467)	(3.866)	(4.965)	(4.245)	(4.342)
country FE	YES	YES	YES	YES	YES	YES	YES	YES
year FE	YES	YES	YES	YES	YES	YES	YES	YES
sector FE	YES	YES	YES	YES	YES	YES	YES	YES
vce(robust)	YES	YES	YES	YES	YES	YES	YES	YES
Observations	3,085	3,085	3,083	3,085	8,647	8,647	8,639	8,647
R-squared	0.203	0.213	0.260	0.037	0.415	0.435	0.388	0.143

*Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1*

Notes: This table report the principal results from alternate regressions using the Democratic index. The column (1) to (4) represent the result of our model for a subsample composed by the firm from the less democratic countries. To Col (5) to (8), the results for the firms from the most democratic countries. For all regressions we apply three fixed effect (firm, year, and sector) and heteroscedasticity robust standard errors.

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