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THE ROLE OF ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) REGULATIONS IN ATTRACTING FOREIGN DIRECT INVESTMENT (FDI)

Abstract:

This paper examines how the presence of environmental, social and governance (ESG) regulations in a country can enhance its attractiveness for foreign direct investment (FDI). I use country-level data on ESG regulations from the United Nations (UN)-supported network of investors called Principles for Responsible Investment (PRI). I find that the presence of ESG regulations in a country is significant correlated with higher FDI in high-income countries, and it is also correlated with higher FDI in emerging markets and developing economies (EMDE) when government's policies are perceived as effective. The presence of ESG regulations is instead negatively correlated with FDI attraction in an EMDE when the quality of the regulatory environment for private business development is perceived negatively. Existing literature does not draw a firm conclusion on whether ESG regulations incentivize or deter private investments; for example, the pollution-heaven hypothesis posits that private investments are drawn where there are fewer or less stringent environmental regulations. This paper contributes to the literature on the role of ESG regulations and to that on the role of policies in FDI attraction, by providing a different perspective on a country's FDI attraction potential related to the presence of country-level ESG regulations, offering a new range of opportunities for policy makers when considering the impact of ESG regulations in conjunction with the general quality and effectiveness of their regulatory system.

Keywords:

Government Policy; Climate; Sustainability; International Investment; Economic Development.

JEL Classification: Q56, Q58, F21

1. Introduction

Attracting foreign direct investments (FDI) has been found to be able to bring economic benefits to a host country, as it can lead to the creation of local jobs and value addition, and other potential spill-over effects into the economy, including technological knowledge and know-how (Munteanu, 2015), productivity, exporting performance, wages, research and development investment, firm survival (Lu et al., 2017), and human capital (Blomström and Kokko, 2002).

Recognizing the role of FDI in a host economy, academic research has explored the determinants of FDI, or in other words what factors can make a country more attractive to FDI. The contribution of the academic research on FDI determinants is the provision insights for host countries' governments into what characteristics make their countries more competitive to receive FDI, and therefore take advantage of the related economic benefits.

The research around FDI determinants has evolved over time. Among the first authors, MacDougall (1958), Simpson (1962) and Kemp (1964) focus on two-country models. Although they do not speak specifically of FDI determinants, they introduce variables in their investment and trade analyses that later in the literature are exploited as FDI determinants. For example, MacDougall (1958) introduces variables like the cost of labor and the relationship between foreign investments and trade. Later theories leverage this work, and introduce a direct links between FDI and trade. For example, Helpman (1984) states that FDI can be a means to access a market by circumventing trade tariffs through local production.

Later, Buckley and Casson (1981) shift the focus from country-specific to industry- and firm-specific determinants of FDI. For example, they write about the firm's decision to internalize certain stages of production, which translates into FDI when such internalization involves operations abroad. Buckley and Casson (1976) state that "the incentive to internalize depends on the interplay of industry-specific factors, region-specific factors, nation-specific factors, and firm-specific factors".

Dunning and Lundan (2008) continue the analysis of firm-specific FDI determinants by developing a theory on the functional role of FDI. They categorize FDI on the basis of the motives that lead a foreign enterprise to invest abroad: horizontal FDI are defined are those that seek market access in the face of trade frictions (i.e., moving the whole production to a new country to access its market), while vertical FDI are those that seek to access low wages for part of the production process (i.e., breaking up the production process vertically across countries to find efficiencies). Within this body of literature, Teixera et al. (2017) further refine Dunning and Lundan (2008)'s model and identify four main motives for companies conducting FDI: market-seeking, resource-seeking, efficiency-seeking and/or asset-seeking. Market-seeking FDI seeks markets to serve, and therefore they are determined by the size and availability of the markets that the multinationals are looking to exploit. Resource-seeking FDI seeks resources to use in the multinationals' production process, and therefore are determined by the availability of resources in the host country, for example natural resources. Efficiency-seeking FDI seeks efficiency of the production processes, and therefore generally seek cheaper factors of production abroad, for example a minimum level of skills provided at lower cost. Finally, asset-seeking FDI seeks existing assets abroad, and generally they refer to mergers with or acquisitions of existing companies.

More recently, gravity models have introduced proximity (e.g., geographical or cultural) between host and home country as an FDI determinant. Among these authors, in Bénassy-Quéré et al. (2005) look at factors like cultural relationships such as colonial links or cultural proximity, or sharing a common language as a way to facilitate business exchanges.

The literature on FDI determinants has also expanded on the role of explicit rules and regulations that a host country government can establish to make its country more or less attractive for foreign investors. Dunning (1994) introduced the relationship between host country's policies and FDI, arguing that governments can establish specific policies to maximize the gains from FDI. Dunning in the 2000's further developed his location theory, which introduces host country's policies as a determinant that can influence the behavior of multinationals and their FDI location decisions. Later, Bailey (2018) explores several variables as FDI determinants related to a host country's regulatory environment, including political stability, the rule of law, corruption, and democratic institutions. Other FDI determinants related to a host country's policies are macroeconomic stability and tax environment. Macroeconomic stability is included as an FDI determinant by Teixeira et al. (2017), Wadhwa (2011) and Vijayakumar et al. (2010), among others. For these authors, macroeconomic stability represents a measure of the macroeconomic risk that multinationals face in a country hosting their FDI. Bailey (2018) and Teixeira et al. (2017) include the tax environment in their research, as a measure of the tax incentives that multinationals can find in a host country.

When discussing regulations, it is worth noting that recently ESG regulations have been increasing in countries that are both home and host to FDI. For example, Singhania and Saini (2022) argue that the practice of reporting non-financial ESG disclosures has been rising due to several reasons, such as increasing visibility, informing customers, avoiding the risk associated with firm performance and achieving sustainability. However, notwithstanding the increase in number of ESG regulations, the literature on how ESG regulations can influence FDI has remained small. Literature in this field generates from and still heavily revolves around the pollution heaven hypothesis (PHH), which argues that polluting FDI will flow where there are fewer or less stringent environmental regulations. The PHH has been tested in the literature in different ways. For example, Aliyu (2005) connects a company's motives for investing abroad with the presence of environmental regulations in the home country, or the absence thereof in the host country, suggesting that companies are prompted to invest in polluting activities where there are less stringent environmental regulations.

Empirical papers have failed to find definitive evidence of the PHH (Rezza, 2015) or of a definitive effect on industrial location of weaker or stricter environmental regulations. For example, Xing and Kolstad (2022) find that the laxity of environmental regulations in a host country is a significant determinant of FDI originating from the US for heavily polluting industries, but it is insignificant for less polluting industries. Xing and Kolstad (2022) use proxies for environmental regulations, as most of the PHH literature does. Some of these proxies are consumption energy, degree of ratification/participation in international environmental protection treaties, governance variables like the level of corruption, actual reduction in carbon emissions, and the presence of environmental taxes.

Spatareanu (2007) focuses on the difference in the stringency of environmental regulations between the home and host countries and is among the few authors who use direct measures for the laxity of local environmental regulations. In particular, she uses an indicator that measures, through a survey, the perception of the stringency of environmental regulations in a country.[1]

She concludes that more stringent environmental regulations in the investor's country relative to those in the host country are positively correlated with the probability of investment, and that companies in industries with higher abatement costs tend to invest more abroad where environmental regulations are less stringent than in the investor's country.

Dam and Scholtens (2008) confirm the PHH, but also establish that multinational corporations with strong social responsibility avoid locating their operations in countries with weak environmental regulations. This is a particularly interesting conclusion, considering that the demand for ESG responsibilities on corporations and governments has been growing, as discussed in the Deloitte's 2022 Gen Z and Millennial Survey or in Carrots & Sticks (2020). Dam and Scholtens (2008) bring in a new element, that is multinationals' voluntary social responsibility measures. As Spatareanu (2007), Dam and Scholtens (2008) also use a survey[2] to measure firms' managers' assessment of external factors that impact upon the way in which they operate their businesses.

Chipalkatti et al. (2021) expand the PHH literature and attempt to observe ESG regulations as a direct FDI determinant, and they find that the presence of a mandatory environmental disclosure regulation for listed companies is correlated to higher FDI in commodity-exporting countries. This finding is inconsistent with the PHH literature, because Chipalkatti et al. (2021) find that the presence of regulations attracts higher FDI.

In conclusion, little is known about the direct effects of ESG regulations on FDI, also because there are no harmonized common measures of the level of ESG regulations, and different authors use different proxies (Aliyu, 2015) or surveys. With the growing numbers of ESG regulations around the world and the growing interest in the topic, more data has become available over time. The United Nations (UN)-supported network of investors, called Principles for Responsible Investment (PRI), created a database that lists all ESG regulations around the world. Even if not in relation to FDI, more authors have started to explore this information. For example, Krueger et al. (2021) assess the change in companies' financial performance after the introduction of ESG regulations mandating ESG disclosure, and conclude that mandatory ESG disclosure regulations have beneficial informational and real effects. Their results are in line with Bassen et al. (2013)'s, who conduct a comprehensive review of the academic research linking ESG criteria and financial performance since the 1970s, and find that there is a founded business case to highlight a positive relation between ESG criteria and corporate financial performance.

My paper aims to contribute to the literature on FDI determinants by adding the new determinant of the presence of ESG regulations in the host country. Results would be relevant to policy makers and investing companies. Policy makers may think that attracting FDI is easier in the absence of ESG regulations, in line with what the PHH. However, my paper argues that developing ESG

[1] World Economic Forum's Global Competitiveness Report.
[2] World Bank's Business Environment Survey.

regulations can enhance a country's FDI attractiveness, more in line with the literature that advocates for the business case for ESG rules and regulations. The findings will also provide additional background for multinational companies investing abroad regarding the elements to assess for their cross-border investment location decisions.

2. Research question and hypothesis

While the PHH suggests a negative relationship between FDI and the stringency of environmental regulations, Rezza (2015) argues that there is no definitive evidence that the PHH holds true in all contexts. Therefore, my paper proposes an alternative hypothesis, in line with Chipalkatti et al. (2021) and with the literature that argues for the financial case for a company to implement ESG measures, like in Bassen et al. (2013) and Krueger et al. (2021). My paper contributes to the literature on FDI determinants, by adding the new determinant of the presence of ESG regulations in the host country.

Hypothesis:
The presence of mandatory ESG regulations in a country makes that country more attractive to FDI.

As discussed above, Chipalkatti et al. (2021) is to my knowledge the only paper that attempts to observe ESG regulations as an FDI determinant. They limit their assessment to the presence of environmental disclosure regulations, using the database developed by the Initiative for Responsible Investment, which focuses on the financial markets.

3. Empirical Analysis

The main regression to test the hypothesis is:

$$FDI_{it} = a + b*\text{presence of ESG\_regulations}_{it} + c_j*Controls_{itj} + e_{it}$$

Where "i" refers to host country that receives FDI, "t" refers to the year, and "j" (only applied to controls) refers to the different controls used in the model.

I observe the characteristics (variables) of each host country in different years. This is a longitudinal dataset, assessed through a panel data analysis with year and host-country fixed effects. Panel data allows to control for factors that vary across countries and time, and for potentially omitted variables that would not vary over time.

3.1 ESG regulations

The independent variable is the presence of ESG regulations in the host country, sourced from the UN PRI database, which collects ESG regulations issued in a country from 1930 up to 2022. I used the UN PRI May 2022 release. In particular, I used data on ESG regulations that are:

- Already issued, and not still in progress,
- Mandatory, and not voluntary,
- Issued by governments and industry (i.e., stock exchanges and industry associations), and not by international organizations, because those would be generic and not mandatory at the national level.

Among the selected ESG regulations, it is possible to distinguish among:

- Disclosure regulations (both for corporates and investors),
- ESG integration regulations for investors,
- Stewardship codes,
- Taxonomies,
- Sector-specific policies,
- Regulations around financial products (green bonds, green labels, etc.),
- National sustainable finance strategies,
- Others.

Disclosure regulations constitute the bulk of total regulations: out of 763 regulations included in the database, 523 are disclosure policies (of which 370 applicable to corporates and 153 to investors).

The selected regulations are applicable to different entities:

- 42% are applicable to asset owners (13% to corporate pension or equivalent plans, 10% to non-corporate pension funds or equivalent, 10% to insurance companies and 9% to other asset owners),
- 30% to corporations,
- 16% to investment managers,
- 6% to financial service providers,
- 2% to credit rating agencies,
- 4% to other entities (e.g., exchanges).

3.2 Inward FDI flows

As per the United Nations Conference on Trade and Development (UNCTAD), FDI is defined as an investment reflecting a lasting interest (i.e., at least 10% of ownership) and control by a foreign direct investor, resident in one economy (the home country), in an enterprise resident in another economy (the host country). Inward FDI flows to a host country comprise capital provided by a foreign direct investor to its foreign affiliate resident in the host country, or capital received by a foreign direct investor resident from its foreign affiliate abroad. FDI flows are presented on a net basis, i.e., as credits less debits. Thus, in cases of reverse investment or disinvestment, FDI may be negative. As in Kok and Acikgoz Ersoy (2009), Vijayakumar et al. (2010) and Wahid et al. (2009), this study uses the USD amounts of inward FDI flows in each recipient host country. The data is sourced from the UNCTAD database.

3.3 Controls

Table 1 includes a summary of the controls used in this study. More information about the controls, including how the literature describes them and treats them, is included in the Annex. Controls are grouped by topic into four panels for ease of reference.

Table 1: Summary of variables in the model

		Variable	Additional specifications	Literature	Expectation on correlation	Source
Dependent variable		Inward FDI flows in USD amount (log)		Kok and Acikgoz Ersoy (2009) Vijayakumar et al. (2010) Wahid et al. (2009)		UNCTAD
Independent variable		Presence of ESG regulations	Binary variable (0 for no ESG regulations in the country and year; 1 if there are ESG regulations)		Positive	UN Principles for Responsible Investment (PRI)
Panels	**Controls**					
A. Market dynamics	**Market size**	GDP per capita (US$)	GDP per capita PPP (constant 2017 US$)	Teixeira et al. (2017)	Positive	World Development Indicators
		Population (log)		Mohamed and Sidiropoulos (2010)	Positive	World Development Indicators
	Market growth	GDP growth (%)	Annual GDP growth rate	Mhlanga et al. (2010) Teixeira et al. (2017)	Positive	International Monetary Fund
	Market openness	Trade as percentage of GDP (%)	Sum of exports and imports as a % of GDP	Cleeve (2008) Vijayakumar et al. (2010)	Positive	World Development Indicators
B. Resource availability	**Resource abundance**	Fuel exports as percentage of merchandise export	Fuels comprise commodities in the Section 3 of the Standard International Trade Classification (mineral fuels, lubricants and related materials)	Teixeira et al. (2017) Wahid et al. (2009) Cheung and Qian (2009)	Positive	World Development Indicators
	Infrastructure availability	Individuals using the Internet (% of population)	Internet users are individuals who have used the Internet (from any location) in the last 3 months. The Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV, etc.	Wadhwa (2011)	Positive	World Development Indicators
		Mobile cellular subscriptions (number per 100 people)	Mobile cellular telephone subscriptions are subscriptions to a public mobile telephone service that provide access to the PSTN using cellular technology. The indicator includes (and is split into) the number of postpaid subscriptions, and the number of active prepaid accounts (i.e., that have been used during the last three months). The indicator applies to all mobile cellular subscriptions that offer voice communications. It excludes subscriptions via data cards or USB modems, subscriptions to public mobile data services, private trunked	Wadhwa (2011)	Positive	World Development Indicators

			mobile radio, telepoint, radio paging and telemetry services.			
	Labor cost	Unemployment rate (%)	Annual number of persons who are unemployed as a percent of the labor force, comprising all persons of working age who are without work, currently available for work, and seeking work.	Teixeira et al. (2017)	Negative	Euromonitor
C. Policies for business development	**Policies**	Voice and accountability (-5 to 5 score)	Perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media	Bailey (2018)	Positive	World Governance Indicators
		Political stability (-5 to 5 score)	Perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism	Bailey (2018)	Positive	World Governance Indicators
		Government effectiveness (-5 to 5 score)	Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies	Bailey (2018)	Positive	World Governance Indicators
		Regulatory quality (-5 to 5 score)	Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development	Bailey (2018)	Positive	World Governance Indicators
		Rule of law (-5 to 5 score)	Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence	Bailey (2018)	Positive	World Governance Indicators
		Control of corruption (-5 to 5 score)	Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests	Bailey (2018) Berrill et al. (2018)	Positive	World Governance Indicators
D. Other policies	**Taxes**	Corporate tax rate (%)		Bailey (2018)	Negative	Tax Foundation
	Macroeconomic stability	Inflation (%)	Annual GDP deflator	Teixeira et al. (2017) Vijayakumar et al. (2010) Wadhwa (2011) Cleeve (2008)	Negative	World Development Indicators

3.4 Income level

Several authors, like Bailey (2018), break down results by income level, as countries with different income levels have shown different FDI determinants. As other authors, Bailey (2018) in fact suggests that significant variation exists in the empirical data sources, measurement and analyses. This is also evidenced by Teixeira et al. (2017), who often underline the need to include a large number of countries in the panel as potentially problematic to source consistent data. As a solution, several authors like Bailey (2018) run the analyses at different levels of income of the countries in the panel. Countries at different development stages (and therefore also with different statistical capacity and thus data availability) may show different FDI determinants or different behaviors to the same FDI determinants.

The paper uses the World Bank definition of high-income countries, and breaks down results by two income levels: high-income countries on the one hand, and emerging markets and developing economies on the other (including low- and middle-income countries). The threshold for a country to be considered high-income is based on the per capita Gross National Income (GNI) and varies over time. The per capita GNI fluctuates between $9,625 to $13,205 between 2000 and 2021 (the time period used in this paper), as shown in the table below.

Table 2: High-income GNI per capita threshold over time

	2000	2005	2010	2015	2020	2021
High-income GNI per capita threshold (US$)	9,265	10,725	12,275	12,475	12,695	13,205

3.5 Descriptive statistics and basic relations among variables

Table 3 shows the summary statistics of the different variables used in the paper.

Table 3: Summary statistics of variables

Variable	Observations	Median	Mean	Std Deviation	Nr. countries with available data
FDI	4,324	587.7684	7,077.71800	24,766.61000	204
ESG Regulations	1,738	1.0000	3.95570	5.74489	79
GDP per capita	4,194	11,850.3500	19,750.23000	21,539.73000	194
Population (millions)	4,251	7.1320	35.58330	135.47950	196
GDP growth (%)	4,258	3.6000	3.44500	6.88530	196
Trade (% of GDP)	3,925	79.5333	91.07637	59.29985	195
Natural resource (% of GDP)	3,468	3.7254	15.99214	26.36196	191
Cellular subscriptions (per 100 people)	4,441	80.8412	76.94348	70.97836	214
Individuals with internet (% of population)	4,151	27.0000	34.93023	30.58137	210
Unemployment (%)	4,518	7.2735	9.35785	7.18987	206

Corporate tax rate (%)	4,241	25.5000	24.54584	10.21658	224
Inflation (%)	4,474	3.5650	7.29448	43.04556	212
Voice and accountability	4,157	0.0531	-	0.99771	214
Political stability	4,162	0.1115	-	0.99771	214
Government effectiveness	4,138	(0.1306)	-	0.99770	212
Regulatory quality	4,137	(0.1162)	-	0.99770	212
Rule of law	4,187	(0.1382)	-	0.99773	214
Control of corruption	4,148	(0.2315)	-	0.99771	212

Looking at t-tests run for all variables by the presence of ESG regulations and by income levels (as shown in Table 4), it is possible to observe that the null hypothesis that the difference in group means is zero cannot be refused in almost any case. This means that countries with ESG regulations are mostly high-income countries, with a higher GDP per capita, higher GDP growth, higher natural resource abundance, higher cellular subscriptions, more internet users as percentage of the population, lower unemployment, lower tax rate and better governance. Annex 1 shows the matrix of correlation among the variables.

Table 4: T-tests of variables by presence of ESG regulations and host country's income level

Variable	Mean w/o ESG regs	Mean with ESG regs	t-value (absolute)		Mean for middle- and low-income countries	Mean for high-income countries	t-value (absolute)
Number of ESG regulations	n.a.	n.a.	n.a.		1.5	6.9	22.2
FDI	6,049.8	19,664.9	6.8		3,045.3	17,293.7	17.4
GDP per capita	15,611.5	30,999.7	14.3		8,717.5	47,114.5	87.5
Population (millions)	71.2	73.5	0.2		41.7	21.4	4.3
GDP growth (%)	4.6	2.9	8.0		3.9	2.2	7.1
Trade (% of GDP)	90.8	94.0	0.9		78.4	118.8	20.7
Natural resource (% of GDP)	12.5	10.4	2.2		15.8	16.6	0.9
Cellular subscriptions (per 100 people)	52.7	106.6	26.4		62.0	111.2	32.9
Individuals with internet (% of population)	20.0	58.5	27.2		21.2	65.9	58.5
Unemployment (%)	7.8	8.0	0.7		9.9	6.9	13.8
Corporate tax rate (%)	29.1	25.3	9.2		26.5	22.9	11.7
Inflation (%)	6.8	5.3	1.6		9.4	2.5	5.0
Voice and accountability	(0.1)	0.6	15.4		(0.4)	0.8	41.0
Political stability	(0.2)	0.3	9.8		(0.4)	0.8	40.9
Government effectiveness	0.0	0.8	14.7		(0.5)	1.2	72.7
Regulatory quality	(0.0)	0.8	16.7		(0.5)	1.1	67.4
Rule of law	(0.2)	0.7	16.0		(0.5)	1.1	69.9
Control of corruption	(0.0)	0.6	11.3		(0.5)	1.1	68.4

3.6 Models

The model is run twice, once for high-income countries and once from low- and middle-income countries, or EMDEs. In particular, the model is run as

$$\text{Log FDI}_{it} = a + b * \text{Presence of ESG\_regulations}_{it} + c_j * \text{Controls}_{itj} + e_{it}$$

Controls are introduced gradually in panels, where:

- Panel A includes the controls on market dynamics,
- Panel B includes the controls on resource availability,
- Panel C includes the controls on policies for business development,
- Panel D includes the controls on other policies.

Each panel is included in the model separately, and the controls in each panel are sequentially included. Finally, all panels are sequentially included.

High-income countries

The first model is run for high-income countries as

$$\text{Log FDI}_{it} = a + b * \text{Presence of ESG\_regulations}_{it} + c_j * \text{Controls}_{itj} + e_{it}$$

In the tables below, controls are introduced gradually, one panel at the time, where:

- Panel A (Table 5),
- Panel B (Table 6),
- Panel C (Table 7),
- Panel D (Table 8).

Panels are included one at a time and the controls in each panel are sequentially included (Table 5 through Table 8). In the last model (Table 9) all panels are sequentially included.

Table 5: OLS, Country Fixed Effects, Country and Year Fixed Effects - Presence of ESG Regulations and Panel A Controls – high-income countries

*Description: Independent variable: presence of ESG regulations; dependent variable log of FDI; Panel A controls are summarized in Table 1; robust standard errors in parentheses; p-values: *<0.1, **<0.05, ***<0.01.*

VARIABLES	OLS (1)	FE (2)	FE (3)	FE (4)	FE (5)	FE (6)	FE (7)
Presence of ESG regulations	**0.0233**	**0.0982***	**0.149***	**0.118***	**0.128****	**0.122****	**0.123****
	[-0.0273]	**[-0.0543]**	**[-0.0784]**	**[-0.0618]**	**[-0.0631]**	**[-0.0551]**	**[-0.0547]**
GDP per capita				0.0107***	0.00896***	0.00948***	0.00945***
				[-0.0023]	[-0.00203]	[-0.00269]	[-0.00269]
Log of Population					0.497*	0.469*	0.485*
					[-0.279]	[-0.26]	[-0.258]
GDP growth						-0.00352	-0.00336
						[-0.00864	[-0.00825]
Trade to GDP							4.03E-05
							[-0.000546]
Number of observations	767	767	767	767	767	767	764
R-squared	0	0.002	0.039	0.047	0.049	0.049	0.049
Number of Countries	n.a.	43	43	43	43	43	43
Country FE	NO	YES	YES	YES	YES	YES	YES
Year FE	NO	NO	YES	YES	YES	YES	YES

Table 6: Country and Year Fixed Effects - Presence of ESG Regulations and Panel B Controls – high income countries

*Description: Independent variable: presence of ESG regulations; dependent variable log of FDI; Panel B controls are summarized in Table 1; robust standard errors in parentheses; p-values: *<0.1, **<0.05, ***<0.01.*

VARIABLES	FE (8)	FE (9)	FE (10)	FE (11)
Presence of ESG regulations	**0.155***	**0.117**	**0.084**	**0.0833**
	[-0.0812]	**[-0.0731]**	**[-0.0524]**	**[-0.052]**
Natural resource abundance	-0.000575	-0.0011	-0.00331	-0.00337
	[-0.00169]	[-0.00172]	[-0.00254]	[-0.00262]
Infrastructural availability (Cellular Subscriptions)		0.00208**	0.00233***	0.00236***
		[-0.000826]	[-0.000818]	[-0.000823]
Infrastructural availability (Individuals with internet connections)			0.00587	0.00585
			[-0.00673]	[-0.00671]
Labor cost (unemployment)				0.000742
				[-0.00316]
Observations	764	761	749	749
R-squared	0.041	0.044	0.049	0.049
Number of Countries	43	43	43	43
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 7: Country and Year Fixed Effects - Presence of ESG Regulations and Panel C Controls – high income countries

*Description: Independent variable: presence of ESG regulations; dependent variable log of FDI; Panel C controls are summarized in Table 1; robust standard errors in parentheses; p-values: *<0.1, **<0.05, ***<0.01.*

VARIABLES	FE (12)	FE (13)	FE (14)	FE (15)	FE (16)	FE (17)
Presence of ESG regulations	**0.172****	**0.170****	**0.168***	**0.172***	**0.171***	**0.175***
	[-0.0826]	**[-0.0816]**	**[-0.0894]**	**[-0.0891]**	**[-0.089]**	**[-0.0897]**
Voice and Accountability	-0.123	-0.193	-0.196	-0.311**	-0.378**	-0.337**
	[-0.113]	[-0.136]	[-0.119]	[-0.15]	[-0.171]	[-0.152]
Political Stability and Violence		0.153*	0.151	0.147	0.136	0.117
		[-0.0804]	[-0.0946]	[-0.0916]	[-0.0867]	[-0.0786]
Government Effectiveness			0.0127	-0.0561	-0.103	-0.08
			[-0.107]	[-0.133]	[-0.145]	[-0.133]
Regulatory Quality				0.198**	0.142	0.154*
				[-0.0949]	[-0.0858]	[-0.0917]
Rule Of Law					0.214*	0.264*
					[-0.115]	[-0.135]
Control of Corruption						-0.128
						[-0.0916]
Observations	700	700	700	700	700	700
R-squared	0.04	0.043	0.043	0.046	0.048	0.049
Number of Countries	43	43	43	43	43	43
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Table 8: Country and Year Fixed Effects - Presence of ESG Regulations and Panel D Controls – high income countries

*Description: Independent variable: presence of ESG regulations; dependent variable log of FDI; Panel D controls are summarized in Table 1; robust standard errors in parentheses; p-values: *<0.1, **<0.05, ***<0.01.*

VARIABLES	FE (18)	FE (19)
Presence of ESG regulations	0.145*	0.142*
	[-0.0763]	[-0.0765]
Corporate tax	0.00585	0.00585
	[-0.0038]	[-0.00376]
Inflation		0.00392
		[-0.0046]
Observations	767	767
R-squared	0.04	0.041
Number of Countries	43	43
Country FE	YES	YES
Year FE	YES	YES

Table 9: Country and Year Fixed Effects - Presence of ESG Regulations and all controls introduced sequentially by panel – high-income countries

*Description: Independent variable: presence of ESG regulations; dependent variable log of FDI; Controls are summarized in Table 1; robust standard errors in parentheses; p-values: *<0.1, **<0.05, ***<0.01.*

VARIABLES	FE (20)	FE (21)	FE (22)	FE (23)
Presence of ESG regulations	0.123**	0.0612*	0.0945**	0.0883**
	-0.0547	-0.0316	-0.0397	-0.0402
Observations	764	749	696	696
R-squared	0.049	0.058	0.064	0.065
Number of Countries	43	43	43	43
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Panels of controls	A	A+B	A+B+C	A+B+C+D

Table 5 through Table 9 show that the presence of ESG regulations in a high-income country is significantly and positively correlated with the amount of FDI received by that country across all models. Only Table 6 shows that when introducing Panel B controls alone (i.e., those related to resource and infrastructure availability), the presence of ESG regulations becomes non-

significant; however, the presence of ESG regulations is significant again when Panel B controls are introduced together with the other controls (i.e., as in regressions 21, 22 and 23 in Table 9).

Conclusions for high-income countries

The main hypothesis is supported by the results for countries with a high-income level (developed countries). In the case of developed countries, the presence of ESG regulations is significantly positively related with FDI flows. Multiple reasons can explain this:

1. As discussed by Krueger et al. (2021) and Bassen et al. (2015) there is a positive relation between ESG criteria and corporate financial performance. Therefore, the first incentive that a multinational company has in investing in countries with well-developed ESG frameworks could be that companies operating in such countries would have a better corporate financial performance (this may be particularly important in the case of cross-border mergers and acquisitions, which are an FDI component).
2. Another incentive could be linked to the findings of Deloitte (2022) and Carrots & Sticks (2020), who show that customers and governments alike are requesting companies to pay increased attention to ESG matters. The fact that the number of ESG regulations in high-income countries is significantly higher than in middle- and low-income countries may suggest that the attention of local stakeholders to ESG matters in high-income countries is higher, assuming that policy-makers makes policies and regulations in line with the interests of voters in their country. Therefore, a second incentive for a multinational company to invest in a country with an ESG framework could be that such a country offers an environment better aligned with the expectations of the home country's stakeholders.
3. Finally, if a company has reasons to decide to actively comply with voluntary or mandatory ESG regulations (whether because required by its stakeholders or to improve its corporate financial performance), it would be easier for that company to invest in a country with an existing ESG framework, because otherwise the investing company would need to build an ESG framework of its own, and this would increase its transaction cost of doing business in a host country without an ESG framework.

Emerging Markets and Developing Economies (EMDEs)

The same model is run for EMDEs. Tables for this run of the models are included in the Annex. The presence of ESG regulations does not appear significant in any table. However, Table 10 shows that while the presence of ESG regulations per se is not significant, it becomes significant when interacted with some of the Panel C controls on business regulations in the recipient countries.

Table 10: Country and Year Fixed Effects - Presence of ESG Regulations and Panel C controls interacted with the independent variables – EMDEs

*Description: Independent variable: presence of ESG regulations; dependent variable log of FDI; Controls are summarized in Table 1; robust standard errors in parentheses; p-values: *<0.1, **<0.05, ***<0.01.*

VARIABLES	FE (1)	FE (2)	FE (3)	FE (4)	FE (5)	FE (6)	FE (7)
Presence of ESG regulations	0.0137	0.013	0.013	0.0131	0.00916	0.01	0.0168
	[-0.0161]	[-0.0154]	[-0.0157]	[-0.0163]	[-0.0157]	[-0.0169]	[-0.0189]
Interaction term between Presence of ESG regulations and Voice and Accountability	0.00967	0.00872	0.00419	0.0124	0.0152	0.0149	0.0205
	[-0.0178]	[-0.0203]	[-0.0218]	[-0.0209]	[-0.0224]	[-0.0216]	[-0.0253]
Interaction term between Presence of ESG regulations and Political Stability and Violence		0.000712	-0.00876	-0.00935	-0.00439	-0.00499	-0.016
		[-0.00962]	[-0.0112]	[-0.0108]	[-0.0126]	[-0.0125]	[-0.0111]
Interaction term between Presence of ESG regulations and Government Effectiveness			0.0272	0.0511	0.0701**	0.0693*	0.0756*
			[-0.0243]	[-0.0319]	[-0.0338]	[-0.0347]	[-0.0409]
Interaction term between Presence of ESG regulations and Regulatory Quality				-0.0359*	-0.0327	-0.0351	-0.0582**
				[-0.0188]	[-0.0203]	[-0.0211]	[-0.0278]
Interaction term between Presence of ESG regulations and Rule Of Law					-0.0327	-0.0329	-0.0516
					[-0.0283]	[-0.0367]	[-0.0398]
Interaction term between Presence of ESG regulations and Control Of Corruption						0.00405	0.0503
						[-0.0294]	[-0.042]
Observations	851	851	851	851	851	851	739
R-squared	0.196	0.204	0.218	0.227	0.23	0.232	0.309
Number of Country1	50	50	50	50	50	50	48
Country FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Panels of controls	Panel C + interactions with Panel C controls	Panel C + interactions with Panel C controls	Panel C + interactions with Panel C controls	Panel C + interactions with Panel C controls	Panel C + interactions with Panel C controls	Panel C + interactions with Panel C controls	Panels A, B, C and D + interactions with Panel C controls

Conclusions for EMDEs

Two interaction terms are significant and show a correlation with the amount of FDI that countries attract:

- The interaction term between the presence of ESG regulations and government effectiveness is significant with a positive sign, suggesting that the presence of ESG regulations is complementary to the positive perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. A combination of a positive perception of the government effectiveness and the presence of ESG regulations is correlated with higher FDI in the country.
- The interaction term between the presence of ESG regulations and regulatory quality is significant with a negative sign, suggesting that in the presence of a negative perception of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development, the presence of ESG regulations becomes negatively correlated with the country's investment attraction.

4. Conclusions

This paper aims to identify the role of ESG regulations as FDI determinants, and argues that the presence of a country's ESG regulation framework can provide incentives to multinational companies that are exploring to invest abroad. Results support this hypothesis for both high-income countries and EMDEs. However, results also caution toward implementing ESG regulations if the regulatory system of the host country is not perceived as having a good quality.

The incentive for a company to invest in countries with ESG frameworks could derive from multiple reasons. For example, companies operating in countries that regulate well ESG activities may have a better corporate financial performance, and therefore be more attractive to foreign investors. Moreover, a country with ESG regulations offers an environment better aligned with the ESG-related expectations of the investing companies' stakeholders. Finally, if a company decides to actively comply with voluntary or mandatory ESG regulations, it would be easier to do so in a country with an existing ESG framework rather than creating an ESG framework of its own.

The paper provides new insights for policy makers that debate whether ESG regulations create a cost or an incentive for the private sector, by looking at the perspective of a multinational company exploring investments in their country.

4.1 Ideas for future research

Future research could further explore the heterogeneity of ESG regulations, to identify what type of regulations has a stronger effect on FDI attraction. It would be also interesting to further explore the reasons for the presence of ESG regulations to enhance a country's FDI attractiveness:

- is it because sound ESG regulations reduce operational or transactional costs or risks?
- is it because the investing multinational company needs to comply with stakeholders' expectations in its home or host country?

Exploiting the heterogeneity of bilateral FDI relationships can help shed light on the reasons why ESG regulations can impact FDI attractiveness: for example, the relationship between ESG regulations and FDI attraction may be different when FDI flows from a high-income country to another high-income country, or between two countries with well-developed ESG regulations. As

Spatareanu (2007) suggests, focusing on the difference between ESG regulations between the home and host countries can provide additional insights.

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Annex 1: Controls included in the model

Controls	Description in literature	Corresponding variable in literature
Market size, growth and openness	The size and growth of a market show the capacity of people to pay for goods and services that are produced locally (Teixera et al., 2017). A host country's trade openness relates to the ability of a multinational to produce in the host country (the final product or an intermediate product) and then export to other countries. The literature generally shows a positive relationship between FDI and market size, growth and openness, for example as in Dunning and Lundan (2008).	Market size: Gross Domestic Product (GDP) or Gross National Income (GNI) per capita is often used in the literature as a proxy for market size (Teixera et al., 2017, and Vijayakumar et al., 2010). Teixeira et al. (2017) use the GDP per capita calculated as Purchasing Power Parity (PPP) at constant 2011 prices, sourced from the World Bank's World Development Indicators (WDI). The 2011-calculation of this variable does not have data for the most recent years, and therefore this study uses the GDP per capita, calculated as PPP at constant 2017 prices, from the same source. The population size is another proxy used by Mohamed and Sidiropoulos (2010). While such proxy does not differentiate between populations that can pay for a service or goods and those that cannot, my study incorporates this variable as an additional proxy for market size. This is also sourced the WDI, and a positive relationship is expected. Market growth: Year-on-year GDP growth is a proxy for market growth, used by Mhlanga et al. (2010) and Teixeira et al. (2017). The idea is that a growing economy shows better prospects for returns on the FDIThe literature generally shows a positive relationship between FDI and market size and growth. The information is sourced from the International Monetary Fund (IMF). Market openness: Several authors, like Cleeve (2008) and Vijayakumar et al. (2010) introduce the determinant of market openness to capture the motive of market-seeking FDI (i.e., easily reaching a larger market through local production) or to assess the efficiency of importing intermediate goods in a production location. The proxy used by these authors is the percentage of international trade (the sum of exports and imports) over GDP. Trade over GDP data is sourced from the World Bank's Word Development Indicators (WDI) and the relationship with FDI is expected to be positive (Lankes and Venables, 1996).
Resource abundance	Resource abundance is directly related to the motive of resource-seeking FDI. The expectation is that countries with high resource abundance will attract more resource seeking FDI, as in Ajide and Raheem (2016) or Teixeira et al. (2017).	Resource abundance, intensity or endowment is often used in the literature as described above. The literature usually proxies it with the share of natural resources in a country's exports (Teixera et al. 2017, and Wahid et al., 2009). Teixeira et al. (2017) also look at resource abundance, but introduce a different proxy, namely the proven reserves of oil, gas and coal. However, they find this indicator not significant, while they find significant the more common indicator of the share of natural resources in total exports. In this latter indicator, they include fuel minerals (i.e., coal, oil and natural gas), as Wahid et al. (2009), who include minerals and oil. Cheung and Qian (2009) add ores and metals to proxy for a broader set of natural resources. Cheung and Qian (2009), however, assess the determinants of Chinese outward FDI, while the other authors cited assess the determinants of inward FDI, as it is the intention of this papers. Therefore, this paper uses the share of fuel

		minerals in a host country's exports, sourced from the WDI. The expectation is that countries with high resource abundance attract more resource-seeking FDI.
Infrastructure availability and quality	The availability and quality of infrastructure is used by several authors as an FDI determinants, as it is linked to resource-seeking FDI, as in Wadhwa (2011) who argues that good infrastructure enhances the productivity of FDI. Vijayakumar et al. (2010) and Teixera et al. (2017) also hypothesize a positive relationship between quality and availability of infrastructure and FDI.	Availability and quality of infrastructure is used by several authors as a variable, as discussed above. As a proxy for this determinant, most authors, like Teixeira et al. (2017), Wadhwa (2011) and Cleeve (2008), use the availability of paved roads, electric power transmission and distribution losses, internet and mobile connections, fixed telephone subscriptions. These variables are used in relation to the number of people in the host country. However, the literature does not produce consistent results on these variables. Wadhwa (2011) finds internet users and mobile subscribers significant, while other variables are not found constantly significant by their authors. Therefore, I use in my model the number of individuals using the internet as a percentage of population and the mobile cellular subscriptions per 100 people as in Wadhwa (2011), sourced from the World Bank's World Development Indicators.
Labor cost	Labor cost is a variable that some authors use mostly in relation to efficiency-seeking FDI. Vijayakumar et al. (2010) and Teixera et al. (2017) use this indicator in relation to the cost of production in the host country. While they use different indicators to proxy the production cost, they both finds labor cost significant as a determinant of FDI, with the expected relation being the lower the cost of labor, the higher the FDI.	Several authors, like Teixera et al. (2017), Vijayakumar et al. (2010) and Wahid et al. (2009), hypothesize that labor costs would be a good measure for efficiency-seeking FDI. However, Teixera et al. (2017) find that the lack of statistics for a number of countries is a problem, especially when the country sample includes countries with less developed statistical capacities. Therefore, they proxy the labor-related production costs with the unemployment rate in the host country, arguing that the higher the unemployment rate the more rigid the labor market and the less attractive it should be for investors (Teixera et al., 2017). Teixera et al. (2017) find unemployment rate significant. Therefore, as a proxy for labor cost, this study follows the example from Teixera et al. (2017). The indicators is sourced from the ILOSTAT Labor Force Statistics database of the International Labor Organization (ILO).
Macroeconomic stability	Macroeconomic stability is included as an FDI determinants by several authors, like Teixeira et al. (2017), Wadhwa (2011) and Vijayakumar et al. (2010). They refer to macroeconomic stability as a measure of the macroeconomic risk that multinationals face in a country hosting their FDI.	As a proxy for macroeconomic stability, Teixeira et al. (2017), Vijayakumar et al. (2010) and Wadhwa (2011) refer to inflation, while others like Cleeve (2008) refer to the real effective exchange rate (REER). Most authors use the annual GDP deflator as proxy for the inflation or REER. As such, in line with the literature, I also include the GDP deflator from the WDI database.
Tax environment	Bailey (2018) and Teixeira et al. (2017) include the tax environment in their analyses, as a measure of the tax incentives that multinationals can find in a host country. As Bailey (2018) shows, different authors use different indicators, with the most common being the corporate tax rate (others include the presence of tax incentives or the length of tax holidays).	As stated by both Bailey (2018) and Teixeira et al. (2017) the statistics for tax indicators are not available for all countries, especially in studies that include both developed and emerging markets. Therefore, Teixeira et al. (2017) use the total tax rate as a percentage of commercial profit as a proxy, as it includes all taxes paid by a firm, and they find this indicator always significant. In alignment with Teixeira et al. (2017), I use the World Bank's World Development Indicators (WDI) database, and more specifically the Doing Business (DB) project, which includes the total tax and contribution rate as a percentage of profit. Finally, Bailey (2018) suggests the need to disaggregate the results based on the development level of the host country. For example, the relationship between political stability and FDI is in Bailey's results much stronger in developed host

		countries than in the overall sample; and similarly, tax rates have a much stronger influence in developing host countries than in developed ones.
Government's policies and political environment	As discussed above, Dunning in the 2000's developed his location theory that introduces host country's policies as a determinant that can influence the behavior of multinationals and their FDI location decisions. Bailey (2018) explores several variables to assess this area of interest, including political stability, rule of law, corruption, democratic institutions.	Bailey (2018) explores several variables in this area of analysis, and suggests using indicators relating to specific areas like political stability, rule of law, control of corruption, democratic institutions. Bailey (2018) uses several indicators as independent variables, while Berrill et al. (2018) only use the variable related to the control of corruption. Both authors use the World Bank's World Governance Indicators (WGI) as a source. While the general expectation is that the better its government's policies and political environment, the more attractive the country would be for FDI, results are actually mixed in the literature (Bailey, 2018). For example, Cuervo-Cazurra (2006) found that investors from highly corrupt home-countries are not deterred and may even prefer to invest in host countries that are highly corrupt. I use several indicators from the WGI as controls, including those used by both Bailey (2018) and Berrill et al. (2018). The WGI gives to each indicator a value between -2.5 (indicating weak performance) and 2.5 (indicating strong performance). The WGI indicators are: • Voice and accountability, • Political stability and absence of violence / terrorism, • Government effectiveness, • Regulatory quality, • Rule of law, • Control of corruption.

Annex 2: Correlation matrix among variables (star shows a correlation at 5% confidence level)

	LogFDI	ESGregsBin	GDPcapi~2017	LogPop	GDPgrowth	TradeGDP	NatResFuel~P	CellSubs	Internetln~s	Unemployment	CorpTax	Inflation	VoiceAccou~y	PoliticalS~l	GovEffective	RegulQuality	RuleOfLaw	ControlCor~n
LogFDI	1																	
ESGregsBin	0.0936*	1																
	0.0001																	
GDPcapi~2017	0.1817*	0.3244*	1															
	0.000	0.000																
LogPop	0.2010*	0.0491*	-0.0782*	1														
	0.000	0.0408	0.000															
GDPgrowth	0.0128	-0.1881*	-0.0631*	0.0730*	1													
	0.4149	0.000	0.0001	0.000														
TradeGDP	0.0391*	0.0212	0.4179*	-0.4351*	0.0304	1												
	0.0184	0.3825	0.000	0.000	0.0644													
NatResFuel~P	-0.0282	-0.0530*	0.1539*	0.1180*	0.0586*	-0.0724*	1											
	0.1016	0.0308	0.000	0.000	0.0007	0.000												
CellSubs	0.1269*	0.5364*	0.5173*	-0.0223	-0.1623*	0.2807*	-0.0015	1										
	0.000	0.000	0.000	0.1536	0.000	0.000	0.9295											
Internetln~s	0.1647*	0.5531*	0.6761*	-0.0087	-0.2155*	0.2527*	-0.021	0.7603*	1									
	0.000	0.000	0.000	0.5898	0.000	0.000	0.2292	0.000										
UnempEM	-0.0739*	0.0164	-0.2052*	-0.1574*	-0.0583*	-0.0278	-0.0597*	-0.0991*	-0.1225*	1								
	0.000	0.4944	0.000	0.000	0.000	0.0888	0.0005	0.000	0.000									
Corptax	0.0211	-0.2187*	-0.2537*	-0.2182*	0.007	-0.1652*	-0.0260	-0.3828*	-0.3400*	0.0451*	1							
	0.1959	0.000	0.000	0.000	0.6692	0.000	0.142	0.000	0.000	0.005								
Inflation	-0.0164	-0.0374	-0.0622*	0.0531*	0.0057	-0.0445*	0.0467*	-0.0763*	-0.0762*	0.0117	0.0696*	1						
	0.295	0.1192	0.0001	0.0006	0.7153	0.0055	0.0062	0.000	0.000	0.4492	0.000							
VoiceAccou~y	0.1022*	0.3608*	0.4238*	-0.2883*	-0.1368*	0.2142*	-0.3925*	0.3364*	0.5138*	0.0329*	-0.0394*	-0.0994*	1					
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.039	0.019	0.000						
PoliticalS~l	0.0687*	0.2395*	0.5301*	-0.5008*	-0.0792*	0.3756*	-0.2007*	0.3388*	0.4801*	-0.0688*	-0.1653*	-0.1069*	0.6819*	1				
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000					
GovEffective	0.1997*	0.3477*	0.7518*	-0.0501*	-0.0862*	0.3340*	-0.1774*	0.5045*	0.7183*	-0.1027*	-0.1763*	-0.1032*	0.7456*	0.6981*	1			
	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
RegulQuality	0.1900*	0.3875*	0.7288*	-0.0411*	-0.0869*	0.3321*	-0.2076*	0.5148*	0.6908*	-0.0731*	-0.1993*	-0.1139*	0.7694*	0.6504*	0.9357*	1		
	0.000	0.000	0.000	0.0112	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
RuleOfLaw	0.1749*	0.3735*	0.7004*	-0.2113*	-0.1054*	0.3329*	-0.2160*	0.4385*	0.6762*	-0.0749*	-0.1353*	-0.1091*	0.8173*	0.7764*	0.9322*	0.9043*	1	
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
ControlCor~n	0.1677*	0.2738*	0.7086*	-0.1963*	-0.1026*	0.3211*	-0.2061*	0.4207*	0.6635*	-0.0738*	-0.1249*	-0.0973*	0.7740*	0.7447*	0.9240*	0.8685*	0.9408*	1
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Annex 3: Tables with results from the analysis for EMDEs

Table 11: OLS, Country Fixed Effects, Country and Year Fixed Effects - Presence of ESG Regulations and Panel A Controls – EMDEs

*Description: Independent variable: presence of ESG regulations; dependent variable log of FDI; Panel A controls are summarized in Table 1; robust standard errors in parentheses; p-values: *<0.1, **<0.05, ***<0.01.*

VARIABLES	OLS (1)	FE (2)	FE (3)	FE (4)	FE (5)	FE (6)	FE (7)
Presence of ESG regulations	0.0497***	0.0380***	0.00748	0.00773	0.00781	0.00798	0.00673
	[-0.00761]	[-0.0113]	[-0.0121]	[-0.0116]	[-0.0116]	[-0.0117]	[-0.012]
GDP per capita				0.00681	0.00808*	0.00806*	0.00788*
				[-0.00407]	[-0.00463]	[-0.00465]	[-0.00458]
Log of Population					0.0524	0.05	0.0485
					[-0.0503]	[-0.0508]	[-0.0491]
GDP growth						0.000451	0.00038
						[-0.000406]	[-0.000398]
Trade to GDP							-0.000232
							[-0.000275]
Number of observations	937	937	937	937	937	937	909
R-squared	0.035	0.079	0.196	0.235	0.238	0.238	0.236
Number of Countries	n.a.	51	51	51	51	51	50
Country FE	NO	YES	YES	YES	YES	YES	YES
Year FE	NO	NO	YES	YES	YES	YES	YES

Table 12: Country and Year Fixed Effects - Presence of ESG Regulations and Panel B Controls – EMDEs

*Description: Independent variable: presence of ESG regulations; dependent variable log of FDI; Panel B controls are summarized in Table 1; robust standard errors in parentheses; p-values: *<0.1, **<0.05, ***<0.01.*

VARIABLES	FE (8)	FE (9)	FE (10)	FE (11)
Presence of ESG regulations	0.00959	0.00466	0.00634	0.00634
	[-0.0131]	[-0.0129]	[-0.0133]	[-0.0133]
Natural resource abundance	0.00103	0.00117*	0.00123*	0.00123*
	[-0.00066]	[-0.00064]	[-0.00065]	[-0.00065]
Infrastructural availability (Cellular Subscriptions)		0.000514**	0.000493*	0.000491*
		[-0.00023]	[-0.00026]	[-0.00026]
Infrastructural availability (Individuals with internet connections)			3.97E-05	3.38E-05
			[-0.00054]	[-0.00058]
Labor cost (unemployment)				-0.00011
				[-0.0016]
Observations	868	866	841	841
R-squared	0.219	0.237	0.241	0.241
Number of Countries	50	50	50	50
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Table 13: Country and Year Fixed Effects - Presence of ESG Regulations and Panel C Controls – EMDEs

*Description: Independent variable: presence of ESG regulations; dependent variable log of FDI; Panel C controls are summarized in Table 1; robust standard errors in parentheses; p-values: *<0.1, **<0.05, ***<0.01.*

VARIABLES	FE (12)	FE (13)	FE (14)	FE (15)	FE (16)	FE (17)
Presence of ESG regulations	**0.0117**	**0.0108**	**0.00979**	**0.011**	**0.0115**	**0.0117**
	[-0.0136]	**[-0.0136]**	**[-0.0142]**	**[-0.0145]**	**[-0.014]**	**[-0.0141]**
Voice and Accountability	-0.0171	-0.0256*	-0.0288*	-0.0273*	-0.0256	-0.0236
	[-0.0137]	[-0.0143]	[-0.0148]	[-0.0144]	[-0.0156]	[-0.015]
Political Stability and Violence		0.0148*	0.0114	0.0121	0.0128	0.0125
		[-0.00843]	[-0.00856]	[-0.00837]	[-0.0098]	[-0.00997]
Government Effectiveness			0.03	0.0377	0.04	0.0428
			[-0.03]	[-0.0331]	[-0.0367]	[-0.0349]
Regulatory Quality				-0.0144	-0.0129	-0.0108
				[-0.0187]	[-0.0214]	[-0.0207]
Rule Of Law					-0.00786	-0.0054
					[-0.0412]	[-0.0431]
Control of Corruption						-0.0113
						[-0.0186]
Observations	851	851	851	851	851	851
R-squared	0.194	0.202	0.209	0.211	0.211	0.212
Number of Countries	50	50	50	50	50	50
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Table 14: Country and Year Fixed Effects - Presence of ESG Regulations and Panel D Controls – EMDEs

*Description: Independent variable: presence of ESG regulations; dependent variable log of FDI; Panel D controls are summarized in Table 1; robust standard errors in parentheses; p-values: *<0.1, **<0.05, ***<0.01.*

VARIABLES	FE (18)	FE (19)
Presence of ESG regulations	0.00734	0.00771
	[-0.0134]	[-0.0134]
Corporate tax	0.000209	0.000224
	[-0.00113]	[-0.00113]
Inflation		-6.19e-05*
		[-3.60E-05]
Observations	897	897
R-squared	0.213	0.214
Number of Countries	51	51
Country FE	YES	YES
Year FE	YES	YES

Table 15: Country and Year Fixed Effects - Presence of ESG Regulations and all controls introduced sequentially by panel – EMDEs

*Description: Independent variable: presence of ESG regulations; dependent variable log of FDI; Controls are summarized in Table 1; robust standard errors in parentheses; p-values: *<0.1, **<0.05, ***<0.01.*

VARIABLES	*FE* (20)	*FE* (21)	*FE* (22)	*FE* (23)
Presence of ESG regulations	0.00673	0.0103	0.013	0.0136
	[-0.012]	[-0.012]	[-0.0145]	[-0.0154]
Observations	909	818	761	739
R-squared	0.236	0.271	0.265	0.278
Number of Countries	50	49	48	48
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Panels of controls	A	A+B	A+B+C	A+B+C+D

Table 16: Country and Year Fixed Effects - Presence of ESG Regulations and Panel C controls interacted with the independent variables – EMDEs

*Description: Independent variable: presence of ESG regulations; dependent variable log of FDI; Controls are summarized in Table 1; robust standard errors in parentheses; p-values: *<0.1, **<0.05, ***<0.01.*

VARIABLES	FE (1)	FE (2)	FE (3)	FE (4)	FE (5)	FE (6)	FE (7)
Presence of ESG regulations	0.0137	0.013	0.013	0.0131	0.00916	0.01	0.0168
	[-0.0161]	[-0.0154]	[-0.0157]	[-0.0163]	[-0.0157]	[-0.0169]	[-0.0189]
Voice and Accountability	-0.02	-0.0279*	-0.0256	-0.0290*	-0.029	-0.027	-0.013
	[-0.0151]	[-0.0163]	[-0.0153]	[-0.015]	[-0.0175]	[-0.0192]	[-0.026]
Interaction term between Presence of ESG regulations and Voice and Accountability	**0.00967**	**0.00872**	**0.00419**	**0.0124**	**0.0152**	**0.0149**	**0.0205**
	[-0.0178]	**[-0.0203]**	**[-0.0218]**	**[-0.0209]**	**[-0.0224]**	**[-0.0216]**	**[-0.0253]**
Political Stability and Violence		0.0141	0.0148	0.0149	0.0119	0.0118	0.0129
		[-0.0105]	[-0.0108]	[-0.00999]	[-0.0129]	[-0.0123]	[-0.0101]
Interaction term between Presence of ESG regulations and Political Stability and Violence		**0.000712**	**-0.00876**	**-0.00935**	**-0.00439**	**-0.00499**	**-0.016**
		[-0.00962]	**[-0.0112]**	**[-0.0108]**	**[-0.0126]**	**[-0.0125]**	**[-0.0111]**
Government Effectiveness			0.0161	0.0147	0.00531	0.0101	0.00141
			[-0.0199]	[-0.0208]	[-0.0283]	[-0.0252]	[-0.0315]
Interaction term between Presence of ESG regulations and Government Effectiveness			**0.0272**	**0.0511**	**0.0701****	**0.0693***	**0.0756***
			[-0.0243]	**[-0.0319]**	**[-0.0338]**	**[-0.0347]**	**[-0.0409]**
Regulatory Quality				0.00489	0.00335	0.00697	0.0118
				[-0.0144]	[-0.0194]	[-0.0207]	[-0.0239]
Interaction term between Presence of ESG regulations and Regulatory Quality				**-0.0359***	**-0.0327**	**-0.0351**	**-0.0582****
				[-0.0188]	**[-0.0203]**	**[-0.0211]**	**[-0.0278]**
Rule Of Law					0.014	0.0175	0.0152
					[-0.0486]	[-0.0556]	[-0.0592]
Interaction term between Presence of ESG regulations and Rule Of Law					**-0.0327**	**-0.0329**	**-0.0516**
					[-0.0283]	**[-0.0367]**	**[-0.0398]**
Control Of Corruption						-0.0177	-0.043

						[-0.0277]	[-0.0367]
Interaction term between Presence of ESG regulations and Control Of Corruption						**0.00405**	**0.0503**
						[-0.0294]	**[-0.042]**
Observations	851	851	851	851	851	851	739
R-squared	0.196	0.204	0.218	0.227	0.23	0.232	0.309
Number of Country1	50	50	50	50	50	50	48
Country FE	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES
Panels of controls	Panel C + interactions with Panel C controls	Panel C + interactions with Panel C controls	Panel C + interactions with Panel C controls	Panel C + interactions with Panel C controls	Panel C + interactions with Panel C controls	Panel C + interactions with Panel C controls	Panels A, B, C and D + interactions with Panel C controls