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Sustainable Wealth: Attracting Foregin Direct Investment through Environmental Regulations in OIC Countries

Muhammad Adnan Azzaki[1], Mawardi[2],
muhammad.adnan.azzaki@uin-suska.ac.id
UIN Sultan Syarif Kasim Riau

ABSTRACT

This study examines the ongoing discourse on whether environmental regulations serve as a barrier or an incentive for foreign direct investment (FDI). The literature presents a divided perspective, with previous studies producing inconsistent findings that have led to ambiguity in empirical evidence. Such disparities often arise from variations in datasets and methodologies employed in earlier research. To resolve these inconsistencies, this research provides a comprehensive empirical assessment of the presumed negative impact of strict environmental policies on FDI in Organization of Islamic Cooperation (OIC) member states. Using a panel dataset comprising 32 OIC countries over the period 2010–2020, the study investigates this intricate relationship. The results, which counter the "pollution haven" hypothesis, indicate that stringent environmental regulations can, in fact, promote FDI inflows. The robustness of these findings is reinforced by their consistency across multiple methodological approaches.

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1. Introduction

Scholars and policymakers have long shown great interest in exploring the factors that influence foreign direct investment (FDI). FDI plays a crucial role in driving economic growth by generating employment, encouraging entrepreneurial activities, and enhancing infrastructure development (Lall, 1995). These combined investment efforts are directed toward improving the standard of living and meeting the nation's ongoing development needs. However, on many occasions, the escalating needs of a country remain unfulfilled due to the inadequate availability of essential resources. A prevalent challenge in numerous developing nations is the dearth of investment capital attributed to low domestic savings across public, private, and household sectors. This scarcity is especially prominent in the member nations of the Organisation of Islamic Cooperation (OIC), a substantial proportion of which belong to the lower middle-income stratum (Sajilan et al. 2019).

Hence, this study presents a novel investigation into the determinants of Foreign Direct Investment (FDI) within the Organization of Islamic Cooperation (OIC) countries, an area tightly linked to the current inclinations of investors who increasingly prioritize socially and environmentally driven economies. This shift in preference is underpinned by the contemporary global economic crisis and the pressing issue of climate change, both of which have exposed vulnerabilities and

* Muhammad Adnan Azzaki

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instabilities in the global economic framework, alongside a discernible rise in global temperature (global warming). These challenges have underscored the imperative of embracing a sustainable economic paradigm that not only underscores economic growth but also factors in environmental and societal ramifications. The concept of a green economy has gained traction, being perceived by experts as a pathway to environmental preservation and facilitation of a global economic rebound. As highlighted by Wanner (2015), the green economy embodies sustainable development founded on three fundamental pillars: economic, social, and environmental dimensions.

A majority of prior literature does not distinctly elucidate the interconnection between the green economy and Foreign Direct Investment (FDI). Research delving into the intersection of the green economy and FDI often grapples with limitations pertaining to the utilization of a diverse array of indicators. These limitations encompass discrepancies in defining, measuring, and interpreting indicators that encapsulate various facets of the green economy concerning FDI.

Consequently, a potential avenue for future research could involve the incorporation of environmental regulatory variables as a pivotal component in enhancing the efficiency of the green economy (Shuai and Fan 2020; Tao, Tao, and Wang 2022; Han 2023). For instance, Huang et al. (2021) conducted a study analyzing the impact of environmental regulatory variables on factors influencing investment flows, revealing that stringent environmental regulatory policies can indeed impact investment augmentation. Similarly, findings from the research by Luo et al. (2021) corroborate this effect, indicating that stringent environmental regulatory policies lead to increased corporate investments in research and the adoption of environmentally sustainable practices.

Additionally, Gao et al. (2021) investigated environmental concerns and investment decisions in China. Their results demonstrated a negative correlation with carbon tax, while the utilization of renewable energy sources and the enhancement of green productivity positively influenced investment decisions. Notably, this body of literature contradicts the pollution haven effect theory, which posits that multinational corporations are inclined to invest in countries with lenient environmental regulations to minimize pollution abatement expenses (Copeland and Taylor 2004). The pollution haven effect stands as a significant argument, often hindering developing countries from embracing environmental regulations, particularly as these nations typically face challenges in garnering sufficient domestic investment.

Our empirical analysis is based on panel data encompassing 32 OIC countries, spanning from 2005 to 2020, to estimate the impact of environmental regulations on FDI within these nations. Intriguingly, our findings contradict the pollution haven effect, revealing that stringent environmental regulations significantly attract FDI. Moreover, we assess the robustness of these results by accounting for various institutional quality indicators, confirming their stability across different specifications. Additionally, we do not observe evidence supporting the notion that stringent environmental regulations escalate outbound FDI in OIC countries.

Therefore, our consistent findings suggest that stringent environmental regulations in OIC countries lead to a net increase in FDI flows. Traditionally, the predominant focus of existing literature has been on advanced economies, particularly

the United States, due to the ready availability of environmental regulation data (Keller and Levinson, 2002; List and Co, 2000; List, McHone, and Millimet, 2004). However, research on developing countries has been constrained to specific regions, given that a majority of OIC countries are in the developing phase. To address this gap, we utilize the green economy (GE) as a comprehensive indicator representing a country's level of environmental regulation stringency. This approach enables us to present a broader and more encompassing examination of the available data. Furthermore, our study differs from existing literature by analyzing country-level aggregate data instead of firm-level data, thus contributing to filling the voids within the current research landscape.

2. Literature Review

2.2. Organization Location and Internalization (OLI) Framework

The OLI Framework approach proposed by Dunning (1988) develops an eclectic approach by combining 3 (three) main theories of FDI namely: Industrial Organization Theory, Internalization Theory, and Location Theory. There are 3 (three) conditions that must be met if a company conducts Foreign Direct In-vestment, namely: (1) the company must have some ownership advantages over other companies (2) it must be more profitable by utilizing these advantages themselves rather than selling or leasing to other companies and (3) it must be more profitable by using these advantages in combination with at least some inputs (factors) located abroad. The OLI Framework proposed by Dunning (1988) above has several weaknesses, among others, it cannot further explain the existence of foreign companies (MNCs), espe-cially regarding their development towards FDI (Moosa, 2002). Global economic developments indirectly affect our understanding of what and how FDI is and what variables affect it. This is based on the fact that the dynamization of the economy will keep going along with the development. FDI theory, based on empirical studies that have been conducted in several countries, has led to several new approaches in understanding FDI (Koojaroenpasit, 2012).

2.3. Institutional Quality

North (1990) describes institutions as human-made constraints encompassing structural, economic, political, and social dimensions. Essentially, institutions define the formal and informal rules within which various economic actors interact to optimize their profits and returns (Wang et al., 2018). International investors tend to avoid risky and unfavorable environments, whereas stable and supportive settings serve as attractive destinations for investment, with strong institutions enhancing the effective use of FDI (Adam, 2020). According to Lucas (1993), in developing nations, institutional factors often outweigh purely economic considerations in drawing foreign investment. Ultimately, the quality of a host country’s institutions influences profitability, as countries with strong institutional frameworks are better positioned to attract foreign investors by offering favorable returns (Sabir et al., 2019).

Dunning (1998) extended the concept of location advantage by adding institutional factors along with economic factors. He argues that foreign investors prefer locations that offer the best economic and institutional facilities. Therefore, foreign investors' decisions depend on the rate of return based on sound institutions and other macroeconomic indicators. Dunning (1998) expanded the concept of

location advantage by adding institu-tional factors along with economic factors. He argues that foreign investors prefer locations that offer the best economic and institutional facilities. Hence, foreign investors' decisions depend on the rate of return based on sound institutions and stable macro indicators (Uddin et al., 2019). Several studies have focused on the impact of institutional quality on FDI (Ali et al., 2010; Buchanan et al., 2012).

The dominant view is that countries with good governance can attract more FDI (Gani, 2007; Globerman & Shapiro, 2002; Globerman et al., 2004; Ihsan, 2021), whereas a weak governance environment cannot protect investment (Globerman & Shapiro, 2003). Institutional variables, particularly corruption, political restrictions, and property rights protection, are some of the important determinants of multinational investment and FDI inflows (Rich-ards & Nwankwo, 2005). Staats and Biglaiser (2012) argue that panel data analysis shows that the rule of law and judicial power are important determinants of FDI inflows in 17 Latin American countries. Some scholars argue that in countries where property rights are poorly protected, multinationals' investments face expropriation risks (Henisz, 2000; Henisz & Williamson, 1999). For example, the host country gov-ernment may receive a portion of the multinational's return or even nationalize the company.

Jiménez (2010) argues that Spanish multinationals, especially younger ones, implement their internationalization policy by investing in countries where the level of political risk is very low. Thus, the proportional ad-vantage can be achieved by investing in countries where stable political conditions create transparency and ease of doing business, which is an important determinant to attract more foreign investment (Kapu-ria-Foreman, 2007). Furthermore, Dunning (2002) argues that institutional factors, such as good govern-ance and economic freedom, are becoming very popular determinants of FDI as multinational corpora-tions' (MNCs) priorities shift away from markets and resources in search of efficiency.

Traditional FDI determinants, such as natural resources and low-cost labor, have become relatively less important, while recent factors, such as governance and economic freedom, have become more popular (Sabir et al., 2019; Ali et al., 2020) concluding that institutional factors affect FDI directly. Holistic development can only be possible with the right policies advocated by institutions. North's (1990) proposed that the association of institutions and economic activities, especially investment, can help in lowering the cost of doing busi-ness and boost profits. Today the emphasis of FDI is more oriented towards the search for efficiency of resources and the integral role of institutions in good governance (Ajide & Raheem, 2016). A pioneering study was conducted by Dunning (2003), who argued that good governance and economic freedom are significant determinants of FDI. Unmitigated institutional quality factors such as good governance, polit-ical stability, low corruption, and safe laws and regulations can increase FDI inflows (Canh et al., 2020; Seim, 2010; Bissoon, 2011).

2.3. Regulation Environment

The concept of the green economy was first introduced in the late 1980s by Pearce et al. (1989) through their influential report, Blueprint for a Green Economy, which outlined practical policy measures to transition the modern economy toward sustainability (Gibbs et al., 2016). This report marked the initial effort to propose regulatory and policy frameworks aimed at reducing environmental risks while

fostering economic development. Subsequent works, such as Jacobs (1991), provided a theoretical foundation by connecting the green economy to political ideologies of "green parties" and the field of environmental economics. However, during the 1990s and early 2000s, the concept lost prominence as sustainable development gained greater political traction, particularly following the Rio Summit in 1992 (Gibbs et al., 2017).

The global financial crisis of 2008 revitalized the green economy discourse, with international organizations framing it as a comprehensive policy response to both economic recovery and ongoing environmental challenges (Bina & La Camera, 2011). This resurgence highlighted the importance of regulatory environments in shaping green economic policies, as governments began to implement regulations that not only aimed at environmental protection but also at stimulating investment in sustainable sectors (Barbier, 2012; Bowen et al., 2009). According to UNEP (2010), a green economy enhances human well-being and social equity while reducing ecological risks, with regulatory frameworks serving as the backbone to achieve these goals. Recent global initiatives, such as the UNEP Green Economy Initiative (2008), the Global Green New Deal (2009), the Rio+20 Summit (2012), COP26 in Glasgow (2021), and the G20 Summit in Bali (2022), emphasize the alignment of environmental regulations with green growth strategies. These regulatory measures are increasingly viewed as instruments not only to mitigate climate change but also to attract foreign direct investment (FDI) by creating stable, sustainable, and innovation-driven markets (Asongu & Odhiambo, 2019; Zhou & Zhao, 2022). Thus, the evolution of the green economy is closely tied to the development of regulatory environments that foster both ecological sustainability and economic competitiveness.

Grounded in the established theoretical framework and substantiated by the extant body of literature, the following hypothesis is advanced:
H_1: The impact of institutional quality on foreign direct investment
H_2: The impact of Green Economy on foreign direct investment

3. Research Method

3.1. Estimation Model

This study takes into account an empirical model to explain the country-level determinants of FDI in order to assess the effects of environmental regulations on FDI. We use Saini and Singhania's (2018) explanatory factors. As a result, in addition to environmental laws, we also take into account the gross fixed capital formation (GFCF), freedom index, and trade openness as predictors of FDI. The analysis addresses issues of endogeneity and latent heteroscedasticity through the implementation of both one-step and two-step GMM estimation procedures. Then, we used a fixed-effect model to evaluate the panel data, which allows us to account for variables that might be missed using fixed effects that are country- and year-specific.

The next is use of log transformation in this study is grounded in methodological considerations and the nature of macroeconomic data. First, it helps stabilize variance and reduce skewness in variables such as FDI, GDP, and GFCF, thereby mitigating heteroscedasticity. Second, the log–log specification enables coefficient interpretation as elasticities, which is more meaningful in international

economic analysis. Third, the log transformation linearizes inherently multiplicative economic relationships, improving model estimability and interpretation.
Equation (1) represents the baseline model for the empirical study as follows :

$$Log\ (FDI_{it}) = \beta 1 log(GDP_{i,t-1}) + \beta 2\ log\ (GFCF_{i,t}) + \beta 3\ log\ (FI_{i,t}) + \beta 4\ log\ (TO_{i,t}) + \beta 5\ log\ (GE_{i,t}) + \epsilon it, \ldots..(1)$$

In the specified equation, various key variables are employed to capture the determinants of FDI. The variable "GDP" denotes the per capita real gross domestic product of the host country, portraying its income level. A higher income level signifies greater purchasing power and potentially improved business environment and infrastructure, aligning with the prediction in empirical literature that high-income levels are correlated with increased FDI inflows (Kim and Rhee, 2019). "Gross fixed capital formation (GFCF)" represents the acquisition of produced assets, including purchases of second-hand assets, and production of such assets by producers for their own use, minus disposals, as per the OECD definition. The "Freedom Index (FI)" serves as a comprehensive indicator encompassing various freedom indexes, such as fiscal freedom, government spending, business freedom, labor freedom, trade freedom, investment freedom, and financial freedom.

The FI reflects both business facilitation and policy framework determinants, and past studies have often identified a positive relationship between FI and FDI (Sambharya and Rasheed, 2015; Saini and Singhania, 2018). "Trade openness (TO)" serves as a proxy for the policy framework and is inversely related to the degree of restrictions in international transactions. It is linked to FDI as it reflects a host country's legal and political systems, critical components of the business investment environment (Globerman and Shapiro, 2002).

Thus, trade openness is anticipated to have a positive association with inbound FDI. Lastly, the "green economy (GE)" variable is of primary interest in this study, representing the degree of environmental regulation. It gauges a host country's performance concerning high-priority environmental issues. Given the lack of consensus on specific indicators and measures for the green economy, this study adopts a green economy model adapted from existing literature, utilizing composites of environmental, economic, and social dimensions (Loiseau et al., 2016; Khoshnava et al., 2019). The "pollution haven hypothesis" posits that stringent environmental regulations negatively impact FDI inflows. Therefore, if this hypothesis holds true, the estimated coefficient, β5, should exhibit a significant negative value. Furthermore, we enhance the robustness of the findings by augmenting the baseline model with a comprehensive set of institutional quality indicators.

We incorporate control variables for institutional quality utilizing the Worldwide Governance Indicators (WGI), encompassing six dimensions of governance. Extensive studies by Sabir, S., Rafique, A., & Abbas, K. (2019), Aziz (2018), and Ullah and Khan (2017) have highlighted the significant impact of a host country's institutional quality on the business environment for firms. For instance, Bouchoucha and Benammou (2020) empirically establish the positive and substantial effects of

government effectiveness, regulatory quality, control of corruption, and voice and accountability on FDI attraction in Africa.

Similarly, Asiedu (2003) underscores that institutional efficiency, political and economic stability, and control of corruption play crucial roles in attracting FDI. Consequently, we introduce additional independent variables representing institutional quality in Equation (2): control of corruption, political stability, voice and accountability, government effectiveness, regulatory quality, and the rule of law. Control of corruption assesses the extent to which public authority exercises power for private gain. Political stability measures the susceptibility of the government to political unrest, violence, and terrorism. Voice and Accountability gauge citizens' ability to participate in selecting their government, along with the freedom of expression, association, and media freedom. Government effectiveness evaluates the quality of public service provision and civil service, as well as its independence from political pressures. Regulatory quality is associated with the robustness of government policy concerning private sector development. Lastly, the rule of law acts as a proxy for the host country's quality of rules in terms of intellectual property, contract enforcement, property rights, and crime. The comprehensive model, encompassing the governance indicators, is represented in Equation (2) as follows:

$$Log\ (FDI_{it}) = \beta 1 log(GDP_{i,t-1}) + \beta 2\ log\ (GFCF_{i,t}) + \beta 3\ log\ (FI_{i,t}) + \beta 4\ log\ (TO_{i,t}) + \beta 5\ log\ (GE_{i,t}) + CC_{i,t} + PS_{i,t} + VA_{i,t} + GOVE_{i,t} + RQ_{i,t} + RL_{i,t} + ai + \lambda t + \epsilon_{it}, \quad (2)$$

Where CC, PS, VA, GOVE, RQ, and RL represent the control of corruption, political stability, Voice and Accountability, government effectiveness, regulatory quality, and the rule of law, respectively. In the baseline model, we consider inbound FDI as the dependent variable.

4. Result and Discussion

Table 1 reports descriptive statistics for a panel dataset of 32 OIC countries from 2010 to 2020. FDI (net inflows as % of GDP) and data on GDP, GFCF, the Freedom Index, and trade openness are obtained from the World Bank's WDI. Trade openness is measured as the ratio of total exports and imports to GDP, while GDP growth refers to the annual growth rate. All variables, except GDP growth, are used in logarithmic form. Institutional quality indicators are taken from the World Bank's Worldwide Governance Indicators, an updated dataset originally developed by Kaufmann and Kraay (2008), based on surveys of firms, citizens, and experts. Data on the green economy (GE) are obtained from the World Development Indicators. As highlighted by Loiseau et al. (2016), the concept of the green economy spans environmental, social, and economic domains.

The GE indicator reflects a country's efforts in addressing key environmental challenges, including environmental health and climate change. It evaluates national performance across dimensions such as resource management, ecosystems, emissions, climate change, economic conditions, growth, human capital, and employment, using more than 25 indicators. Its primary objective is to measure how closely countries align with international environmental targets. In this study, the GE serves as a metric for assessing the stringency of environmental regulations. This choice is motivated by

several factors. Firstly, the GE is considered a prerequisite for achieving economic growth while also addressing environmental concerns, minimizing environmental risks, and ensuring social equity (UNEP, 2011). Secondly, modern investors increasingly prioritize ethical, social, and environmental considerations (Qoyum et al., 2021; Sultana et al., 2018). The green economy, as a relatively new concept, also features diverse characteristics and measurement approaches. Thirdly, extensive prior research shows a strong link between environmental regulations and the green economy (Xiao et al., 2023), where regulations shape incentives for environmentally responsible practices, while green economy initiatives enhance the effectiveness of such regulations by emphasizing the economic value of natural resources. In this study, the GE is used as a proxy for environmental regulation stringency, although it may correlate with broader governance indicators, as stringent environmental policies often coexist with stronger governance systems (Kim and Rhee, 2019).

Table 1. Descriptive statistic

Variable	Obs.	Mean	Std. dev	Min	Max
Fdi inflows ($FDI_{i,t}$)	352	4.120768	4.216517	-5.160327	33.79505
Gdp ($GDP_{i,t}$)	352	4.370202	5.057775	-33.4928	34.5
Gross fixed capital formulation ($GFCF_{I,t}$)	352	7.352630	17.48659	-53.03693	257.6802
Freedom index ($FI_{I,t}$)	352	58.39693	7.596239	40.3	77.7
Trade openness ($TO_{i,t}$)	352	4.260400	0.466412	2.794362	5.317407
Green economy ($GE_{i,t}$)	352	6.024531	0.742598	3.55	7.35
Control of Corruption ($CC_{i,t}$)	352	-0.463887	0.623844	-1.58	1.56
Political Stability ($PS_{i,t}$)	352	-0.517266	0.830944	-2.81	1.22
Voice and Accountability ($VA_{i,t}$)	352	-0.676699	0.535648	-1.91	0.37
Government effectiveness ($GOVE_{i,t}$)	352	-0.3175	0.638442	-1.79	1.51
Regulatory quality ($RQ_{i,t}$)	352	-0.314355	0.64005	-2.13	1.11
Rule of law ($RL_{i,t}$)	352	-0.392871	0.601695	-1.64	1

Source: data processed

Table 2 illustrates the primary regression outcomes concerning the determinants of FDI inflows. Columns (1) to (4) present the results obtained through pooled ordinary least squares (OLS) without considering fixed effects, regression with year fixed effects, regression with country fixed effects, and regression considering both year and country fixed effects, respectively. When omitting country fixed effects in columns (1) and (2), nearly all coefficients are estimated to be insignificant. However, upon controlling for country fixed effects in columns (3) and (4), the coefficients of most explanatory variables attain significance. This aligns with prior research and established theories, underscoring the importance of considering country-specific characteristics in explaining FDI inflows. Equation (1) in this study, illustrated in column (4) of Table 2, represents our main estimation model. As anticipated, GDP, gross fixed capital formation, and trade openness exhibit significant

positive coefficients, implying that income levels, investment spending, and trade openness are substantial factors attracting FDI.

Table 2. Estimation result: Determinants of FDI inflow

Variable	(1) Pooled OLS	(2) Year Fixed Effect	(3) Country Fixed Effect	(4) Year and Country Fixed Effect
Log (GDP $_{i,t}$)	0.211***	0.311***	0.803***	0.909***
Log (GFCF $_{I,t}$)	0.012	1.011	0.090	0.010*
Log (FI $_{I,t}$)	-0.399	-0.004	0.001	0.004
Log(TO $_{i,t}$)	12.88***	2.950	3.039	2.960***
Log (GE $_{i,t}$)	1.017	1.113	1.047***	1.716***
Constant	-13.828	-8.718	-9.378	-8.992
Year Dummy	No	Yes	No	Yes
Country dummy	No	No	Yes	No
Observations	352	352	352	352
Countries	32	32	32	32
R-Squared	0.198	0.202	0.224	0.127

However, the coefficients for the Freedom Index are found to be nonsignificant. Notably, the coefficient for the green economy (GE) is unexpectedly positive and statistically significant at the 1% level. This contradicts the pollution haven effect, which predicts a significantly negative coefficient for the GE, suggesting that stringent environmental regulations in host countries increase costs for foreign firms, consequently deterring FDI inflows. The obtained positive coefficient for the GE, however, indicates that stringent environmental regulations in OIC countries actually attract FDI. Specifically, the estimated coefficient suggests that a 1% enhancement in environmental regulation leads to a 1.7% increase in FDI inflows.

Table 3 showcases supplementary regression findings by integrating institutional quality indicators to validate the robustness of the outcomes observed in column (4) of Table 2. This approach is adopted due to the potential correlation between governments' approaches to environmental concerns and their overall institutional capabilities. The outcomes across columns (1) to (6) indicate significantly positive coefficients for all six governance indicators, signifying that enhanced institutional quality positively influences FDI inflows. This observation aligns with the findings of Buchanan, Le, and Rishi (2012) and Chen and Jiang (2021). Importantly, even after accounting for the governance indicators, the coefficients for the green economy (GE) remain positive and statistically significant. In column (7), where all six governance indicators are simultaneously considered, the GE's coefficient remains positive and significant. Across columns (1) to (7), it is evident that the explanatory power of the GE stands distinct from the broader realm of institutional quality. The outcomes presented in Tables 2–3 align partly with the research of Bu and Wagner (2016) and Kim and Rhee (2019), who both identify specific conditions under which stringent environmental regulations attract FDI inflows. However, distinct from this prior research, the current study provides evidence utilizing aggregate-level data for OIC countries. In the presence of both the pollution haven effect and green haven effect, our sample results indicate that the green haven effect holds more sway over the pollution haven effect in OIC countries post the 2010s.

Table 3 Estimation Result: Determinants of FDI Inflows Considering Institutional Quality Indicator

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Log (GDP $_{i,t}$)	0.170***	0.174***	0.066**	0.080***	0.110***	0.070**	0.183***
Log (GFCF $_{I,t}$)	0.016**	0.013*	0.011***	0.008*	0.011*	0.013**	0.620**
Log (FI $_{I,t}$)	-0.016	-0.081	-0.023	-0.191	-0.209	-0.108	-0.011
Log(TO $_{i,t}$)	2.943***	3.182***	1.035***	3.703***	3.415***	3.128***	3.163***
Log (GE $_{i,t}$)	1.107**	1.205***	1.536***	1.190***	1.663*	1.924***	1.709***
CC $_{I,t}$	0.602***						-1.113
PS $_{I,t}$		0.348***					0.106
VA $_{I,t}$			0.655***				0.850
GOVE $_{I,t}$				0.605*			-1.203
RQ $_{I,t}$					0.455*		0.600
RL $_{I,t}$						0.613***	1.100
Constant	-9.827	-9.742	0.823	-13.934	-11.565	-10.765	-15.662
Observations	352	352	352	352	352	352	352
Countries	32	32	32	32	32	32	32
R-Squared	0.310	0.353	0.336	0.445	0.324	0.364	0.352

The combined results from Tables 2–3 suggest that stringent environmental regulations not only fail to deter FDI inflows in OIC countries but actually serve to attract such inflows. Moreover, these regulations do not create an adverse business environment for domestic firms. The implications of these findings are noteworthy, presenting evidence that stringent environmental regulations are conducive to increasing net FDI flows. These results challenge the traditional notion of the pollution haven effect and can be elucidated by several factors. Firstly, as highlighted by Hanna (2010), the cost of environmental regulations for firms is just one of many determinants of a country's business environment. In fact, this cost may be of lesser significance in a firm's location decision compared to factors such as the host country's overall technological level, labor quality, and effective governance. Stringent environmental regulations might be correlated with a host country's level of environment-related technology, thereby providing a superior business environment for multinational firms from advanced economies.

5. Conclusion

The inclusion of institutional quality indicators confirms that stronger governance consistently promotes higher FDI inflows. Notably, the green economy variable remains positive and significant even after accounting for institutional quality, indicating that its influence is independent of broader governance conditions. The evidence also suggests that, in OIC countries after 2010, the green haven effect outweighs the pollution haven effect. Overall, the findings show that stringent environmental regulations do not discourage FDI; instead, they help attract it. This challenges the pollution haven hypothesis and can be explained by factors such as the relatively small role of environmental compliance costs in location decisions, the association between stricter regulations and better technological and governance environments, and multinational firms' increasing concern for environmental reputation. Simultaneously, environmental monitoring by non-governmental organizations (NGOs) has become more active. Increased emphasis on corporate social responsibility (CSR), as discussed in Boulouta and Pitelis (2014), deters firms from locating in countries with weak environmental regulations. If a multinational corporation from an advanced economy is inclined to cause environmental pollution

issues in developing countries, this would tarnish the company's reputation, leading to product boycotts and affecting its stock prices. Consequently, it has become more costly for multinational firms to exploit lenient environmental standards in foreign countries compared to stringent environmental standards in their home countries. Hence, lax environmental regulations in developing countries may not attract multinational firms. In this context, Hashmi, Damanhouri, and Rana (2015) find that foreign firms are not only more energy-efficient but also employ more environmentally friendly technologies.

However, it's essential to interpret the results with caution. Firstly, this study employs country-level aggregate data instead of firm-level or industry-level data. Therefore, while the results suggest that environmental regulations do not reduce FDI inflows at the country level, they do not eliminate the possibility that a specific pollution-intensive industry may tend to avoid countries with stringent environmental regulations. If pollution haven effects exist in specific industries, these effects might be negligible at the country level or outweighed by the opposite effects from other industries. This aligns with Dean, Lovely, and Wang (2009), who find that pollution-intensive industries from certain developing countries are attracted by lax environmental standards, while firms from advanced economies are not significantly impacted by environmental regulations.

Secondly, it's important to note that, unlike prior influential studies such as those by Keller and Levinson (2002) and List and Co (2000), this study utilizes data from after 2005. Thus, it's plausible that pollution haven behavior was more prevalent in the 1980s and 1990s and diminished in the 2000s due to substantial advancements in environmental technology in advanced economies and the increasingly active role of NGOs in monitoring environmental matters. The rise in the significance of firms' social reputation and CSR may have also weakened the pollution haven effect in recent times, as discussed in Qoyum et al (2022). Levinson and Taylor (2008) also pointed out the possibility that firms engaged in highly polluting activities may have already relocated by the time the data were collected. Hence, if such firms from advanced economies had already relocated to pollution havens before the 2000s, the data from the 2000s onwards may not reflect the pollution haven effect. Finally, it's worth noting that the measurement of green economy indicators encompasses various approaches due to its complex dimensions, including economic, environmental, and social aspects (Loiseau et al., 2016).

This research adopts a green economy approach within the context of OIC countries, considering the availability of relevant data. In this study, we contribute novel empirical evidence showcasing that stringent environmental regulations do not act as a deterrent to FDI inflows in OIC countries, contradicting the traditional notion of the pollution haven effect. Moreover, our results demonstrate that these stringent regulations, in fact, entice FDI, leading to what we term a "green haven." It's plausible that a host country's environmental regulations could bolster domestic productivity, consequently attracting multinational firms from foreign shores. Additionally, multinational corporations now face heightened difficulty in capitalizing on lenient environmental standards in OIC countries, as this approach could harm their international reputation, negatively affecting marketing environments and, ultimately, shareholders' interests.

Furthermore, the empirical results exhibit robustness when controlling for various indicators of institutional quality. This article specifically focuses on the effects of the Green Economy (GE) on FDI flows using country-level aggregate data. However, the study does not delve into the specific mechanism that inclines multinational firms to prefer countries with stringent environmental regulations over those with weaker regulations. In future research, exploring this mechanism using firm-level data would be intriguing, as well as investigating whether the study's results hold true for other measures of environmental regulations. The study's findings suggest that OIC countries should not hesitate to implement stringent environmental regulations, fearing a reduction in FDI inflows. Moreover, the results underscore that environmental regulations are significant factors that foreign firms should consider when making investment decisions at an aggregate level. Additionally, if environmental regulations bolster domestic productivity, they can serve as attractive factors for foreign investors.

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