Sustainable Development and Enterprise: Do Foreign Investor Care

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Abstract

Do Foreign investors care about promoting sustainable entrepreneurship and development? We find little evidence indicating that they do care. Our findings suggest foreign investors prefer nations with less punitive carbon emission regimes. Another worrying trend is a negative relationship between educational parity and foreign investment inflows. This counterintuitive relationship shows that foreign investors care more about cost-benefit considerations than their moral duty of investing in greener industries and sectors. Using panel data from five countries for a sample period of 19 years, we find that the higher costs of meeting sustainability goals act as a detriment to foreign investors. This shows that governments must take the initiative and pay the upfront costs to develop the infrastructure for sustainable entrepreneurial activities.

Keywords: Sustainable Entrepreneurship, Foreign direct investment, FDI, sustainable development goals, SDG, gender parity.

1. Introduction

Sustainable Development Goals (SDG) can be considered the ideal global policy for Sustainable Development and Enterprise (SDE) (Brundtland, 1985). Given the political importance of SDG, international investors are supposed to align their Foreign Direct Investment (FDI) with the SDG to gain reputational benefits (Zeng and Eastin (2012) and Suehrer (2019)) It is argued that FDI can create better impact and more sustainable productivity benefits for the recipient country (Narula (2012), Ridzuan, Ismail, and Che Hamat (2017), Sauvant and Gabor (2019), and Aust, Morais, and Pinto (2020)). Policymakers worldwide expect foreign investors to care for sustainable development and enterprise and meet SDG indicators such as improving environment quality and promoting gender parity. This means foreign investors should be seen making capital provisions for making their business ventures sustainable. It's argued that FDI should act as a catalyst that enables economies to balance their focus between economic growth and social development through minimising gender inequality, increasing environmental quality, and encouraging eco-friendly industries (Keeble, 1988). This study challenges this basic notion and argues that these studies suffer from having a moralist view of the pure economic process.

Attempts have been made to find whether foreign investors care about their sustainable development and enterprise responsibilities. Several studies are carried out to find the relationship between FDI and SDGs, but none identifies any conclusive evidence (Zhang and Zhang (2003), Tvaronavičienė and Lankauskienė (2011) Chintrakarn, Herzer, and Nunnenkamp (2012), Shahbaz, Solarin, Mahmood, and Arouri (2013), Davidson and Sahli (2015), Ridzuan et al. (2017), Behera and Dash (2017), and Shahbaz, Nasir, and Roubaud (2018)).

The reason for not being able to find conclusive evidence is the moralist approach prevalent in the regulatory and academic arena. Hitherto, the research considers foreign

investment as a self-governing mechanism which would minimise its negative externalities and adopt practices which may increase sustainable development. Ground for this view is findings that note private enterprise leads reforms and development agenda in nations (Harvie, 2004). Furthermore, existing studies also consider foreign investors as a leverage tool that incentivises recipient countries and industries to tailor their policies to engage in activities promoting sustainable practices and economic development. Therefore, they provide an *ex-ante* analysis of foreign investments' implications and note that foreign investors, as moral beings share the costs for promoting sustainable growth in their target country. Furthermore, these studies assume that foreign investors are rule-takers and would voluntarily adhere to SDG goals and objectives.

In this paper, we assert that foreign investments are a mediated process, and foreign investors are highly likely to choose the country with the lowest costs of sustainable development. Because investing in an economy that requires significant investment in developing infrastructure for sustainable development is a special investment decision case. The rationale for this is grounded in the economic theory of investment and is as follows.

Firstly, the FDI, like other investment decisions, is also sensitive to the hysteresis (Dixit, 1992) created by investment in sustainable development infrastructure. Gains on such investments are less immediate than in normal projects and not highly liquid. Therefore, in the eventuality of negative returns, foreign investors should be concerned with the inability to withdraw their money and prevent exacerbating losses. Secondly, FDI is ultimately targeted at maximising the shareholders' wealth which dictates the importance of an early pay-back period and a higher positive net present value. However, investing in an economy deficient in infrastructure for sustainable development means additional sunk costs and non-productive investments. This not only lengthens the pay-back period but also lessens the investment's net present value. Thirdly, entry into a country is a call option on the prospective gains of that

country due to its competitive advantages (Dixit, 1989). Given the reputational importance of sustainable investments, a government with either existing infrastructure supporting sustainable development or a country relaxed about SDG goals provides an additional incentive for foreign investors.

The second contribution of this study is to the policy-making aspect of the FDI process. This paper argues that there is an incentive for countries to invest in sustainable development infrastructure themselves. These investments should precede the legislation mandating adherence to SDG indicators because FDI would be more attracted to the countries which have made significant progress towards a sustainable economy as countries that are already doing well in terms of SDG indicators enable investors to become part of an ongoing movement towards sustainable development and gain reputational benefits. It may also be a cost-saving tool for foreign investors as they must refrain from investing in such projects. It can also minimise their sunk costs and non-productive expenditures and allows them to direct their capital at core business activities.

2. Literature review

The growth of private enterprises is a function of their ability to attract foreign capital. This brings new money, fresh ideas, and knowledge to a country's enterprise (Izadi & Madirimov, 2023). However, foreign investors, like any other rational agent, pay close attention to the marginal benefits of investing and make a cost-benefit analysis (Le & Tran-Nam, 2018). Le and Tran-Nam (2018) argue that given the geospatial proximity of the two countries, the country with the lowest relative cost is more likely to attract the FDI. Similarly, Kottaridi, Giakoulas, and Manolopoulos (2019) also note that higher regulatory costs in developed economies significantly encourage the flow of FDI from developed to developing economies. Hence, the factors influencing the flow of foreign investment are not only country-specific but also dependent upon regional and global economic context (Saini & Singhania,

2018). Saini and Singhania (2018) further argue that FDI in a developed economy is sensitive to policy-making paradigms, and in developing economies, FDI inflows are exposed to traditional economic indicators.

Therefore, when it comes to sustainable development and enterprise, foreign investors are bound to be sensitive to the cost of implementing SDG (Eden & Wagstaff, 2020). Suehrer (2019) notes that leading countries in the world can attract higher-impact *investment* due to their efficient regulatory mechanism and fewer costs ascribable to sustainable development goals. Evidence also suggests that foreign investors factorise the benefits (and costs) directly related to incorporating principles and policies of sustainable development of their target country (Suehrer, 2019). Therefore, one can argue that sustainable development goals play a significant role in attracting new foreign investment (Ghosh, Saha, and Bhowmick (2019) and Kapuria and Singh (2019)).

This study enhances this perspective and argues that viewing foreign investors' choices as rational choices, domestic business sectors and policymakers should try to minimise the sustainability costs for foreign investments. If the prices of meeting SDGs targets of a country are higher, then foreign investors would be discouraged due to higher prices. Sun, Liu, and Chen (2020) note that FDI prefers those countries which are so-called pollution havens. Firms try to mitigate the costs of environmental supervision and meet emission targets. Pazienza (2015b) also finds evidence that foreign investment has an inverse relation with sector-wise C02 emission levels. Therefore, countries with carbon-intensive industries are more likely to attract foreign investors. We argue that this behaviour is because foreign investors view such sector or economy as an easy investment compared to the sectors where they must meet the emission targets.

Although Zeng and Eastin (2012) note that FDI may prefer to *invest* to meet sustainability targets for reputational benefits, they could not find conclusive evidence. Kivyiro

and Arminen (2014) also find evidence in favour of the pollution haven hypothesis: where FDI inflows are more attracted towards countries and sectors which underperform the environmental targets.

Another indicator of sustainable development is gender educational parity and its impact on labour costs. In economies where female-to-male education attainment is similar, firms are expected to pay both genders equally and incur higher labour costs. Therefore, foreign investment is observed to be negatively associated with gender educational parity (Lai and Sarkar (2017) and Blanton and Blanton (2015)). Busse and Nunnenkamp (2009) note that foreign investment inflows into middle-income countries do discern between the increment in labour costs due to increased educational parity between males and females. Although, they note that the flow of FDI from developed to developing countries is positively related to gender parity in education. However, this could be because of the minimum education level these firms require for their operation. The interesting question is whether FDI in developed countries is also positively related to gender parity, and there is no definite answer.

This allows us to conclude that foreign investors pay more attention to traditional economic indicators when making investment decisions than sustainability issues. Factors such as location, ownership, Gross Domestic Product (GDP), market size, growth, price stability, international governance, institutional stability, and financial development of an economy play significant roles in attracting FDI (Sarker and Serieux (2023), Ranjan and Agrawal (2011), Mina (2007), Bevan and Estrin (2000), and Teece (1985)). Vijayakumar, Sridharan, and Rao (2010)and Dunning (1973) note that factors such as price stability and a growing economy are also significant determinants of FDI.

In contrast, the trade openness of an economy has little role to play. Boateng, Hua, Nisar, and Wu (2015) note that in addition to GDP, trade openness of the country's exchange rate and sector-wise GDP plays a significant role in attracting FDI. Mijiyawa (2015) adds

further to the traditional determinants of FDI and argues that the size of a country, political stability and investment returns play a significant role in attracting the FDI. In a more recent study, Uddin, Chowdhury, Zafar, Shafique, and Liu (2019) argue that regulatory systems, legal systems, regulation processes, property rights, and governing structure are also imperative factors influencing the flow of FDI.

Therefore, it's important to understand for policymakers why sustainability objectives do not play a significant role in determining the choices of foreign investors. This study contributes to the literature in two ways; firstly, it moves the debate towards noting that FDI (particularly) of private firms is a strategic decision. Therefore, they would prefer to move to a country where the cost of meeting SDG targets is low. Secondly, it provides a conceptual extension that FDI would choose a country that has made significant progress towards key SDG goals. Thirdly, the study aims to establish whether the FDI inflows are as positively associated with SDG goals as is often exerted.

3. Research Methodology

3.1 Research Model

Following our discussion in the literature review section, we may argue that foreign investors are influenced by Traditional Economic Indicators (TEI) and Sustainable Development Goals (SDG) costs when making an investment decision. We can specify this relationship as follows: $FDI_{it} = f(TEI, SDG)$.

The question that needs further evidence is whether this relationship is mutually exclusive or mutually inclusive. Furthermore, it's also important to understand the nature of the implications of each category of independent variable. A priori logic makes us believe that foreign investors should be willing to incur extra costs to enable their host country to achieve sustainable development and enterprise. Nevertheless, the evidence suggests that foreign

investors prefer countries with the necessary infrastructure or incentives to offset the sustainability costs. Foreign investors also prefer economies with carbon-intensive industries and would not penalise carbon-intensive investment heavily. Therefore, we adopt a stepwise linear regression approach to estimate the coefficients. We can express our general estimation model as follows:

$$Y_{it} = \beta_0 + \sum \beta_j \left(TEI_j\right)_{it} + \sum \gamma_k \left(SDG_j\right)_{it} + \varepsilon_{it}$$

Variables in the full information model are categorised into two broad categories: Traditional Economic Indicators (TEI) and Sustainable Development (SDG). The model assumes a log-linear relationship between the variables following the previous studies such as those of Shahbaz, Lean, and Shabbir (2012), Shahbaz et al. (2013), Ridzuan et al. (2017) & Ang (2008).

3.2 Variables

3.2.1 Traditional Economic Indicators (TEI)

i. ***Market Size (MS):*** Market size refers to the total consumers in each market indicated by the total annual population in thousands. Research shows that countries with larger consumer bases are more likely to attract foreign investment in the long as well as short-run (Olorogun (2021) and Mijiyawa (2015)). A large population ensures that firms are not dependent on large exports and can remain profitable by focusing on the domestic market. We have log-transformed the variable to minimise the measurement error. We expect that a country becomes more attractive for foreign investors as the population grows.

ii. ***Economic Growth (EG):*** EG is estimated as annualised change in GDP for the selected country, which indicates a vibrant and growing economy in which foreign firms can seek abnormal returns (Masron & Abdullah, 2010). A growing economy manifests

productivity growth and growth in Human Capital and local consumption due to increased employment(Noorbakhsh, Paloni, & Youssef, 2001). Following the general trend in FDI studies such as Gastanaga, Nugent, and Pashamova (1998), Noorbakhsh et al. (2001), Sabir, Rafique, and Abbas (2019), Dellis, Sondermann, and Vansteenkiste (2017) and Dorożyński, Dobrowolska, and Kuna-Marszałek (2019) we have used GDP growth as an indicator of economic growth. We use GDP growth rate (%) to estimate the effects of change in GDP on FDI inflows. A growing economy is theoretically more likely to get the attention of foreign investors than a stagnant or declining economy. Hence, we expect the sign of the EG as positive.

iii. ***Trade Openness (TO):*** TO indicates a country's international trade relations and free trade agreements with other nations and trading blocks. TO means that firms in a particular country can import and export goods and services to other countries without tariff and non-tariff barriers. Elfakhani and Matar (2007) note a country's openness's positive role in attracting foreign investments. However, any such part is reported to depend on the type of industry that receives the foreign investment. For example, if foreign investment is focused on export-oriented sectors, then foreign investors may pay close attention to TO (Mijiyawa (2015) and Sabir et al. (2019)). Two important aspects limit the role of TO in attracting foreign investment. Firstly, new investments into a country are often oriented towards national consumption rather than export potential. Secondly, our sampled countries, such as France, Italy, Spain, Greece, and Turkey, are the world's major trading nations. Especially the first fours are part of a common market and enjoy absolute freedom of movement of goods, services, and capital across the European Union. Similarly, Turkey, given its close economic ties to European Union (EU), also enjoys privileged access to this market. Therefore, investment flows in these countries are not expected to be highly sensitive to the TO.

For example, a company investing in Greece can enjoy the same TO if it supports Cyprus or Hungary. Despite the limited explanatory power of TO, it is noteworthy that it is used repeatedly in studies to parametrise the effects of an open market on the FDI (Mijiyawa, 2015). Therefore, we will also use it in our full information model.

iv. ***Research and Development (RD):*** Following Kumari and Sharma (2017), ÇEviŞ and Camurdan (2007) and Hübler and Keller (2010), we are going to include RD as an explanatory variable. We hypothesise that RD acts as a cost-saving factor for foreign investors. Countries with higher RD expenditures would offer foreign investor access to cutting-edge technologies and development at lower costs. Moreover, these countries have advanced technology infrastructure that may incentivise foreign investors by providing them with a knowledge transfer opportunity.

v. ***Infrastructure Development (ID):*** ID means different things in different studies, as research focused on the direct link between FDI and infrastructure tends to use a broad set of indicators for ID (Kaur, Khatua, & Yadav, 2016). Factors such as logistics, facilities, communication network and internet access are noted as a significant determinants of the FDI (Shah and Khan (2019), Kaur et al. (2016), Mina (2007), and Riedl (2010)). However, we have used electricity consumption as an indicator for infrastructure development. It allows us to simultaneously capture the energy availability in the country for industry and businesses and indicates the country's infrastructure development. Electricity consumption is found to be significant in attracting foreign direct investment in several studies such as (Bekhet and bt Othman (2011), Bekhet and Othman (2014), and Salahuddin, Alam, Ozturk, and Sohag (2018)). The ID is proxied through annual Kilowatt (KW) electricity consumption and has been log transformed to minimise the measurement error.

vi. ***Real Exchange Rate (RER):*** We use RER to estimate the effect of currency movement on the FDI preferences of an economy. A stable RER indicates the underpinning strengths of any economy to outsiders and is expected to positively influence foreign investment (Kosteletou & Liargovas, 2000). An economy with an appreciating RER will likely receive less FDI as local goods and services might be more expensive to export. However, for an investor looking to gain a share in the domestic market, appreciating REE incentivises foreign investors and is less likely to be protectionist. We assume that if the coefficient sign is positive, that means FDI is targeted at market share rather than export purposes. If the coefficient is negative, then it indicates that the FDI is targeted at export purposes.

vii. ***Price Stability (PS):*** Price instability negatively affects operational and investment planning. Foreign investors ought to prefer those countries where inflation levels are stable and maintained at lower levels. PS enables foreign investors to forecast their investment needs and be able to estimate the value of their cash flows after converting cash flows into their home currency (Şıklar and Kocaman (2018), Okafor (2015), Asiedu (2006), Basu and Srinivasan (2002)). Price stability is estimated as the growth rate in the Consumer Price Index (CPI). A negative coefficient will indicate that a country with higher price instability would lead towards lower FDI inflows.

viii. ***Labour Cost (LC):*** Cost of labour is used to estimate the effect of labour prices in attracting foreign investment. Lower labour cost is found significantly influence the FDI inflow as economies with lower labour costs attract more FDI (Mina (2020) and Bayraktar-Sağlam and Sayek Böke (2017)). Although, in our selected countries, Turkey enjoys a comparable advantage over other countries given its relatively low wages and pay rates; however, we have log-transformed this variable to remove any bias due to the measurement of the labour cost. The labour cost data is obtained from

the Economic Intelligence Unit (EIU) and is given as hourly total dollar cost of pay and non-pay costs associated with workers.

ix. ***Financial Development (FD):*** FD indicates the supply of money within an economy that can be either estimated through the supply of credit (Sirag, SidAhmed, & Ali, 2018) or the supply of M2 money in the economy Ridzuan et al. (2017). We will use the latter and expect the countries with M2 levels would attract higher FDI and vice versa.

3.2.2 Costs of Sustainable Development Goals (CSDG)

This study argues that we can infer the CSDG by looking at a country's current level of compliance with the Sustainable Development Goals (SDG). Suppose a country has lower levels of carbon emissions or strict rules to lower carbon emissions. In that case, a foreign investor may need to spend additional money on green technology and energy sources. Similarly, if a country has industrial carbon emissions, such an industry is discouraged or not incentivised to grow. Therefore, foreign investors may have no recourse to subsidies or grants to start their businesses. Traditionally, three main indicators of SDGs are used to analyse the behaviour of foreign investment inflows that are economic indicators, environmental indicators such as CO2 emission and income distribution due to gender or education disparity (Lin, Kim, and Wu (2013) and Ridzuan et al. (2017)). The first type of indicator is extensively discussed in the previous section. Now, we'll focus on the latter two types of indicators.

i. **Transport Carbon (TC):** Pazienza (2015a) noted the transport sector of an economy as one of the major determinants of CO2 levels. He notes that greener transport reduces carbon emissions and increases foreign investment. However, their study was not able to identify conclusive effects. We estimate TC as the percentage of CO2 emissions from the transport of total fuel combustion; a higher ratio indicates a higher tolerance for CO2 emission levels and a lesser eco-friendly transport sector. We expect that if foreign investors are willing to

pay the cost of SDG goals, they prefer those countries where greener transport is widely used and TC is lower. However, if foreign investors are less inclined to pay for greener cars and invest in charging facilities, they would prefer countries with a high tolerance for emissions levels from the transport sector.

ii. **Industrial Emission (IE):** Hoffmann, Lee, Ramasamy, and Yeung (2005) note Granger causality between industrial pollution levels and foreign investment. They argue that the flow of foreign investment in high-income countries is affected by industrial CO2 emission levels. This indicates the existence of two issues; firstly, foreign investors do not choose developed nations based solely on traditional economic indicators. Secondly, higher-income countries that permit higher carbon emissions may attract more increased foreign investment.

IE is estimated as a percentage of CO2 emissions from manufacturing industries and construction of total fuel combustion. The higher the rate, the lesser the eco-friendly sector; therefore, we expect a positive relationship between EFI and FDI, ideally the FDI.

iii. **Carbon Emission (CE)** We use per capita CO2 emission levels to determine foreign investment FDI inflows. CE is estimated as per capita metric ton CO2 emission. In line with the pollution haven hypothesis, it is expected that countries with high CO2 emissions are likely to receive increased foreign investment (Pao & Tsai, 2011). Although Hoffmann et al. (2005) find no causal relationship between FDI inflows and CO2 emission level, we aim to include them to delineate the effects of other environmental indicators.

iv. **Gross enrolment ratio (GER):** Cleeve, Debrah, and Yiheyis (2015) note educational development as an indicator of human development that influence the locational decision made by foreign investors. Hasan, Parameswar, and Ongsakul (2022) note that the quality of human resources is crucial for higher productivity and innovation at industry levels. As rational agents, foreign investors would like to invest in those countries whose industries

and workforce is well equipped to deal with modern business challenges. This study uses a simple estimate of the gross enrolment ratio indicating percentage enrolment in higher education. Kinda (2013) note that the educational development of the local population positively influences FDI. Therefore, we expect a positive relationship between GER and FDI, indicating that a country has sufficiently educated and trained labour to perform the tasks.

v. **Educational Parity (EDUP):** Lin et al. (2013) note that human capital development proxied by education level influences the inflows of FDI. This study uses educational parity as an indicator of human capital development and argues that higher education parity may inhibit the FDI inflows. Although Busse and Nunnenkamp (2009) do not have negative implications of gender disparity on FDI inflows; however, such substances are mostly limited to developing economies and investors from developed economies. However, our study subjects are rather more developed economies which rank high on gender parity in terms of education and access to the labour market. Hence, we anticipate that gender parity may have significant cost implications for foreign investors in these countries.

3.3 Hypotheses & Variables

This section defines our hypothesis and lays out the econometric model using the abovementioned variables. Our first hypothesis estimates the joint effects of Traditional Economic Indicators (TEI) and Sustainable Development Goals (SDG) on the flows of Foreign Direct Investment (FDI). The second focuses only on TEI, and the third establishes the link between SDG costs and foreign investments.

Hypothesis 1: The relationship between FDI, TEI and SDG is jointly significant for the sample countries. Foreign investors seeking to generate higher returns are concerned with economic indicators and their reputation *vis-à-vis* sustainability. Therefore, foreign investors

prefer economies that perform better on TEIs and have achieved considerable progress in SDGs.

$$\ln(FDI_{it}) = \alpha + \beta_1 \ln(MS) + \beta_2 EG + \beta_3 TO + \beta_4 RD + \beta_6 \ln(ID) + \beta_6 \ln(RER) + \beta_7 PS + \beta_8 \ln(LC) + \beta_9 \ln(FD) + \lambda_1 TC + \lambda_2 IE + \lambda_3 CE + \lambda_4 GER + \lambda_5 EDUP + \epsilon_{it}$$

Hypothesis 2: The relationship between FDI and TEI is statistically significant without SDG indicators. This contradicts our previous belief that SDG brings substantial explanatory power to the econometric model. If the test excluding the SDG indicators performs equally well compared to the previous model, we conclude that SDGs are insignificant in attracting FDI.

$$\ln(FDI_{it}) = \alpha\alpha + \beta_1 \ln(MS) + \beta_2 EG + \beta_3 TO + \beta_4 RD + \beta_6 \ln(ID) + \beta_6 \ln(RER) + \beta_7 PS + \beta_8 \ln(LC) + \beta_9 \ln(FD) + \epsilon_{it}$$

Hypothesis 3: The relationship between FDI and SDGs stands valid irrespective of TEI. This hypothesis counter tests the results of both previous hypotheses that given the reputational benefits of SDGs and prospective costs of going green, FDI in the 21st century is attracted to countries that have already made progress towards a sustainable economy. This reduces the cost burden on foreign investors and ensures they benefit from state initiatives to make the economy greener.

$$\ln(FDI_{it}) = \alpha + \lambda_1 TC + \lambda_2 IE + \lambda_3 CE + \lambda_4 GER + \lambda_5 EDUP + \epsilon_{it}$$

3.4 DATA Analysis

Data has been collected from three sources United Nations Conference on Trade and Development (UNCTAD), United Nations Statistics Division (UNSD), IMF data, and Economist Intelligence Unit (EIU). A balanced panel was created from 2000 to 2018. Our data is free of missing data issues or survival bias. We used yearly observation for our sample countries.

Table 1 comprises summary statistics of all variables for each included country. Figures indicate that although these countries vary in their ability to attract the amount of FDI ($), they are comparable in terms of other economic indicators such as economic growth, labour costs, trade openness and financial development. Therefore, we do not expect that a country's innate economic difference may impact the foreign investor's decisions. Furthermore, as these economies are comparable on multiple indicators, the SDG costs should be identical for each investment destination.

Table 1: Country-wise Summary Statistics					
France					
Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
FDI ($000)	19	46411.23	21044.61	5804.878	85137.06
Economic Growth (%)	19	.0141418	.013957	-.0288578	.0392358
Trade Openness (%)	19	.5771092	.0500575	.5014339	.6611623
Labour Cost	19	3.538452	.2272765	3.059176	3.751854
Financial Development	19	7.172463	.336622	6.591399	7.678743
Greece					
Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
FDI ($000)	19	2132.149	1690.639	0	5733.447
Economic Growth	19	.0032193	.044139	-.0913249	.0579453
Trade Openness	19	.5578373	.0867068	.4445235	.7701041
Labour Cost	19	2.795892	.2707444	2.199444	3.141563
Financial Development	19	5.016912	.274096	4.522929	5.48193
Italy					
Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
FDI ($000)	19	22737.43	17274.74	0	65975.54
Economic Growth	19	.0039735	.0202291	-.0528094	.0378696
Trade Openness	19	.5484706	.0394847	.4789632	.6055312
Labour Cost	19	3.366936	.2561179	2.81181	3.605498
Financial Development	19	6.951752	.2885988	6.40589	7.340057
Spain					
Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
FDI ($000)	19	35923.44	15785.43	9549.813	74088.63
Economic Growth	19	.0183921	.0251818	-.0376323	.0524599
Trade Openness	19	.604605	.0470516	.4988607	.6758532
Labour Cost	19	3.072319	.2664894	2.517696	3.347797
Financial Development	19	6.697292	.3541252	5.980606	7.082968
Turkey					
Variable	**Obs**	**Mean**	**Std. Dev.**	**Min**	**Max**
FDI ($000)	19	11254.79	6800.416	982	22047
Economic Growth	19	.0511935	.0444503	-.0596231	.111135
Trade Openness	19	.5131896	.0495786	.426417	.6294659
Labour Cost	19	1.144026	.4698213	.1823216	1.648659
Financial Development	19	5.914149	1.258616	3.462982	7.569928

4. Empirical results

Table 2 summarises the four models and their estimated coefficients, standard error estimates, and model summary statistics. Models 1, 2, and 3 test the hypothesis 1, 2, and 3, respectively, with FDI as an outcome variable. Results of the Model 1 test suggest that; the economic factors and indicators of SDG are jointly significant in explaining the flows of foreign investment. However, individual coefficient and their p-values indicate that these variables have limited power in explaining the behaviour of foreign investors. We observe that market size and price stability are statistically significant at a 10% p-value. This indicates that a country's population size and price levels are the key aspects foreign investors focus on, not the other economic factors.

However, we observe that our hypothesised indicators of SDG costs are better linked to flows of foreign investments. Countries with higher Transport Carbon (TC) emissions attract more foreign investors. This indicates that foreign investors view national net-zero targets as the responsibility of the government rather than businesses. We also observe that countries with carbon-emitting industries are more likely to attract foreign investors. Model 2 assesses the impact of traditional economic indicators. In line with the findings of Model 1, we observe no significant implications of economic factors.

Therefore, foreign investors differentiate economically comparable countries based on the costs of SDGs. These countries must either lower the targets or share the costs associated with the green transition. Model 3 assesses SDG indicators' role in determining foreign investment flow. We observe that transport carbon emission levels and higher industrial emission levels attract more foreign investors. This confirms the pollution heaven hypothesis and shows investors view those countries and sectors favourably where higher carbon emission is permitted.

Table 2: Coefficients Results and their estimated p-value. Appendix II summarises the details of the variables used in the four models and how they are calculated.

	(1) FDI	(2) FDI	(3) FDI	(4) FDI
Market Size	2.848*	0.616		2.351***
	(1.380)	(1.104)		(0.356)
Economic Growth	3.583	3.913		
	(5.319)	(4.586)		
Trade Openness	5.407	3.701		4.711
	(3.163)	(3.031)		(2.470)
RD	-87.96	8.027		
	(73.48)	(44.64)		
Infrastructure	-0.0756	1.034		
Development	(1.146)	(0.908)		
Real Exchange	2.515	3.912		
Rate	(3.845)	(3.422)		
Price Stability	-6.566*	-1.800		-5.572*
	(3.175)	(2.769)		(2.380)
Labour Cost	-0.0421	0.0636		
	(0.692)	(0.516)		
Financial	-0.138	-0.0371		
Development	(0.440)	(0.422)		
Transport Carbon	19.72*		9.697*	10.53**
	(7.513)		(4.658)	(3.873)
Industrial Emission	-8.220		14.75*	-0.904
	(9.443)		(5.703)	(5.273)
Environment	0.633**		-0.224	0.660***
Quality	(0.222)		(0.171)	(0.190)
Gross Enrolment	5.775		1.355	7.282*
Ratio	(3.940)		(3.125)	(2.929)
Educ-Parity	-24.80**		5.593	-21.27**
	(7.501)		(6.172)	(6.446)
_cons	-20.93	-28.60	-1.091	-10.18
	(17.98)	(17.86)	(5.680)	(5.661)
N	92	92	92	92
R-square	0.632	0.545	0.387	0.619
adj. R-square	0.565	0.496	0.351	0.582
Root MSE	1.1645	1.2599	1.4225	1.1411
Prob>F	0.0000	0.0000	0.0000	0.0000

Standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

Model 4 comprises the statistically significant variables in models 1, 2, and 3. Results indicate that Transport Carbon emission level, carbon emission levels, gross enrolment ratio, and educational parity between males and females have statistically significant relationships with investment flows. As expected, we observe that countries that are more tolerant towards is the only variable statistically substantial to the flows of foreign investments. The results

presented in Model 4 allow us to conclude that *foreign investors care about the SDG indicators; however, their concern is more oriented towards the associated costs*. A country which has a higher CO2 emission level concerning their transport and industry and higher tolerance level for overall CO2 emission is preferred by investors. Moreover, the results indicate that FDI inflows prefer to be in countries with higher growth enrolment ratios. At the same time, the FDI inflows are negatively influenced by the educational parity between genders (i.e. male and female).

Model 4 results suggest that out of the three TEI used in the model, only market size and price stability indicated by CPI are significant, and the coefficient signs are as expected. FDI inflows increase as an economy's domestic market size increases; FDI inflows decrease as the price stability in the given economy declines. These findings are confirmatory and align with previous studies where the market size and price stability are important determinants of FDI inflows. Furthermore, we find no significant relationship between FDI inflows and industrial emission levels. That shows sectoral carbon emission differences make no difference.

Estimated coefficients on Transport Carbon and Carbon Emission are statistically significant. Both coefficients are positively and significantly associated with foreign investment inflows. Foreign investors view countries with higher levels of permitted carbon emission as favourable. There could be two reasons for this perspective. Firstly, investors may believe this will save from sunk costs associated with complying with green regulations. Secondly, they also view such countries as more helpful should there be a requirement to meet green conditions. This also indicates that foreign investors view greener transport as a source of additional costs and are deterred by countries with stricter control over transport carbon emissions. The relationship between FDI inflows and Gross Enrolment Ratio (GER) is also significant and positive. This confirms the earlier findings, which note that foreign investors prefer to invest in countries where the

workforce is educated and able to perform the business processes without investing in their basic literacy.

However, this relationship does not translate into a positive relationship between educational parity and foreign investment inflows. The relationship is negative and statistically significant. This indicates that although FDI inflows are more attractive to the economies, the skills gaps between the workforce are lower due to a higher GER ratio. However, they do not prefer higher gender parity in education as it may require foreign investors to pay higher costs to the female workforce. This confirms the finding of FDI implication on gender income inequality that FDI increase or, in other words, prefers to be in societies where female workforce at lower salaries(Lin et al., 2013).

4.1 Robustness checks

The first concern with the model is the violation of the normality assumption. We expect that a few variables, such as population size and trade openness, may need to adhere to the normality assumption. Figures 1 and 2 below show the dispersion of residuals for the fitted values and the added variable plots for individual regressors. This graph indicates that residual values are closely dispersed around the mean, and their direction aligns with our findings.

Figure 3 shows the graph matrix of the bivariate relationship between the variables and shows no significant linear relationship between our variables. Hence, collinearity bias is also minimal. We have conducted Robust regression estimates of the final model to analyse the effects further if there are outliers. The results are presented in Table 2, which shows that our original model doesn't suffer from outliers' effects. Estimates of coefficients and explanatory power values are similar; hence, we conclude that the normality assumption is not violated.

A real limitation of our study is the risk of misspecification due to our approach towards selecting significant variables. Our policy may be deemed as hit and trial approach, where

considerable variables are identified through multiple tests. Therefore, we have conducted the Ramsey RESET test that shows that our model does have omitted variables. Moreover, the Ramsey RESET test is also done on the general model (model 1); again, the results indicate the omission bias.

This finding aligns with the argument that studies on FDI lack appropriate and robust regressors (Eicher, Helfman, & Lenkoski, 2012). Therefore, we conclude that, like other studies on FDI, our study also needs help to develop enough robust indicators to explain the true behaviour of FDI inflows. An encouraging fact about our final model is that the loss in R^2 and adj-R^2 due to moving from Model 1 to Model 4 is quite small compared to the other two models.

Table 2:

	Model Final	Model Final Robust
Market Size	2.351428***	2.351428***
Trade Openness	4.7108915	4.7108915**
Price Stability	-5.5724949*	-5.5724949*
Eco-Friendly Transport	10.533123**	10.533123*
Eco-Friendly Industry	-0.90397716	-0.90397716
Environment Quality	0.65969418***	0 .65969418*
Gross Enrolment Ratio	7.2817939*	7.2817939
Educational Parity	-21.272677**	-21.272677
_cons	-10.17578	-10.17578
N	92	92
R-square	0.619	0.619
adj. R-square	0.582	0.582

Standard errors in parentheses
* p<0.05, ** p<0.01, *** p<0.001

5. Conclusion

This study attempts to identify the combined and individual effects of Traditional Economic Indicators (TEI) and Sustainable Development Goals (SDG). Conventional wisdom suggests bi-directional causality between these variables where they either encourage the flow of FDI into a country or the FDI inflows result in the improvement of these indicators. In this study, an attempt is made to move away from this posterior assumption, particularly regarding

SDG. We treat SDG indicators as cost centres for foreign investors, and they act as detriments to them. The results indicate that foreign investors prefer to invest in countries more tolerant of carbon emissions. Furthermore, foreign investors also view higher labour costs due to increased educational parity as a deterrent. Therefore, countries that consider using foreign investment as the source of sustainable development and enterprise need to consider making capital investments to transition towards a greener economy. Policymakers need to offer a cost-sharing model to foreign investors to self-comply with net-zero policies and lower carbon emissions.

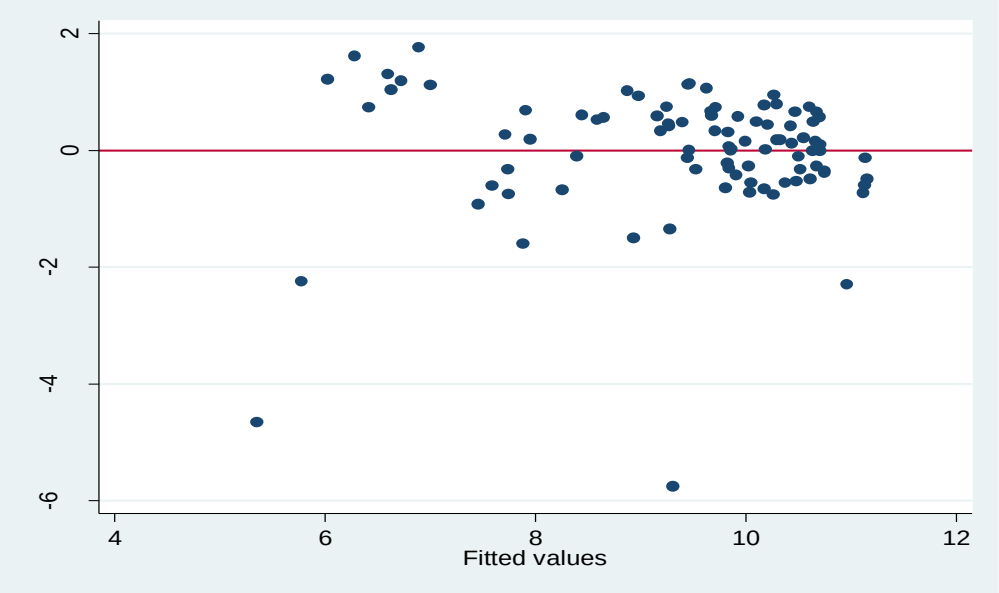

Figure 1: Residual Values Plot

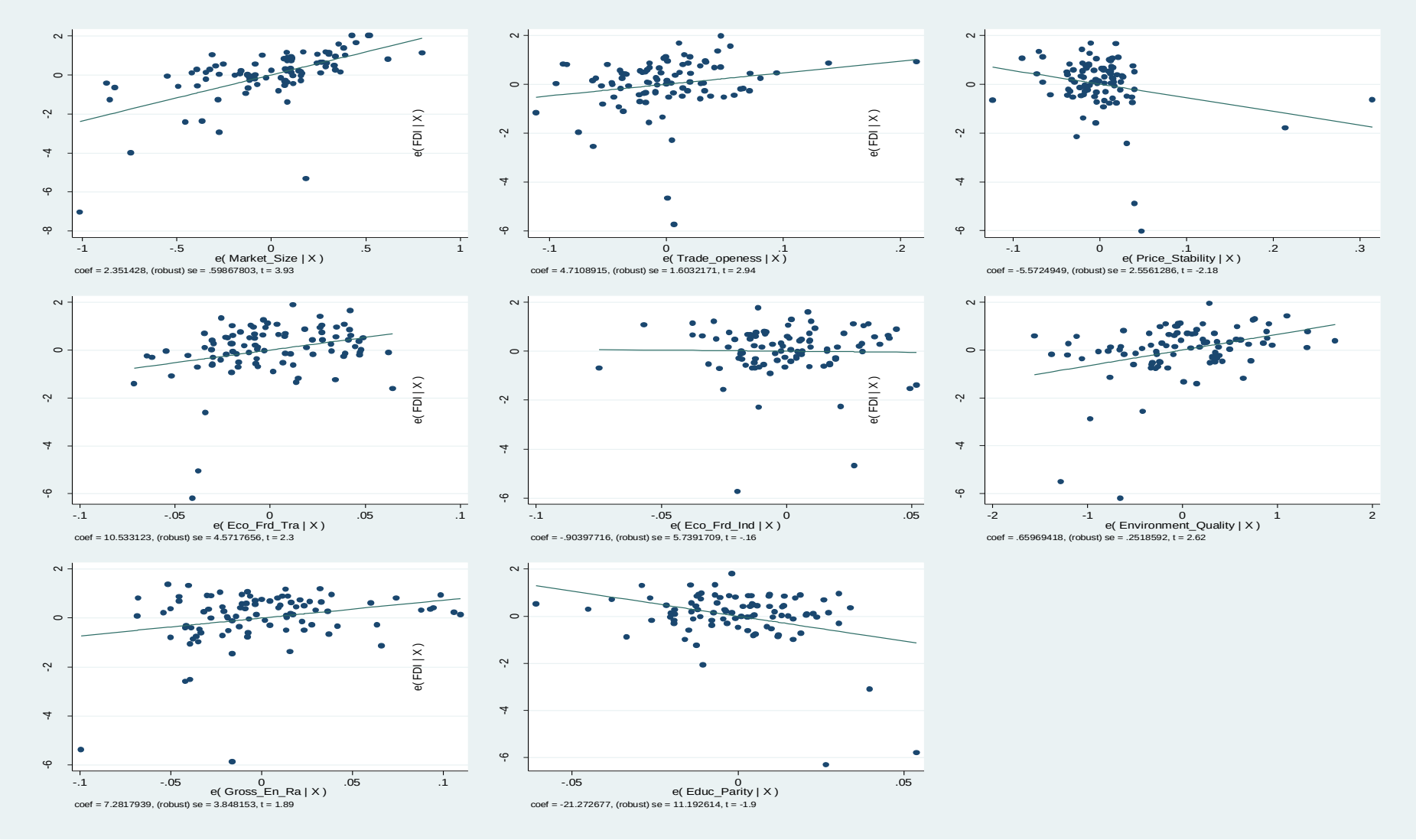

Figure 2: Added variables Plot

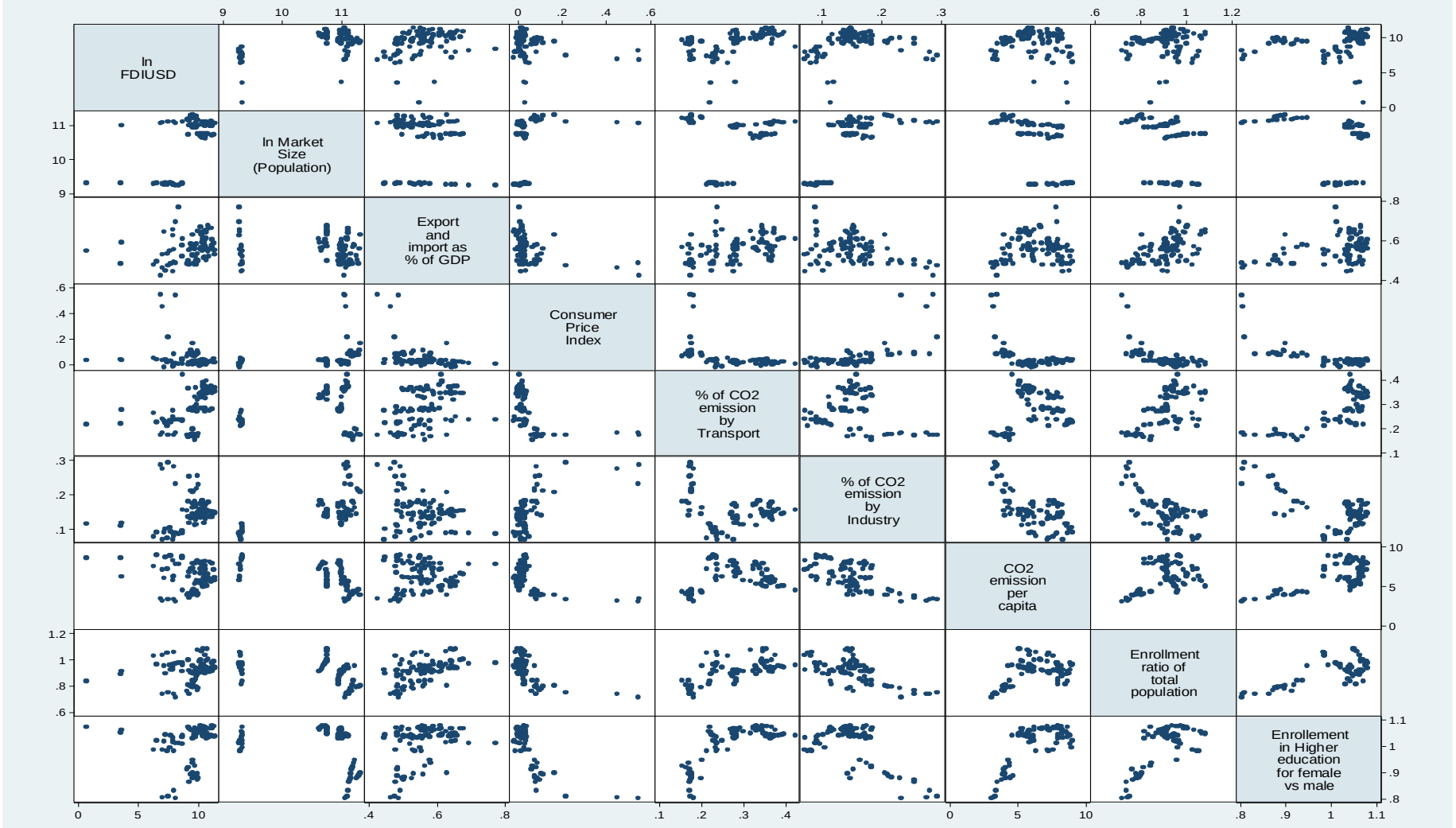

Figure 3: Graph Matrix

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APPENDIX I: Variables definition:		
Name	Indicating	Unit of Measurement
Market size	Market Size	log Population (ths)
Economic Growth	GDP growth rate	% growth rate
Trade Openness	Trade openness indicators, annual	% of GDP (GOODs & Services)
RD	Research & Development	% of GDP
Infrastructure Development (ID)	Electricity Consumption	KW Consumption Total
Real Exchange Rate	Financial Stability	Real Exchange rate
Price Stability (PS)	Economic Stability	Consumer Price Index % growth rate
Labour Cost (LC)	Average cost of labour per hour (pay and non-pay costs).	Hourly Rate ($)
Financial Development(M2)	M1 plus quasi-money at period-end.	Bn (respective Currency)
Transport Carbon (TC)	Eco Friendly Transport	CO2 emissions from transport (% of total fuel combustion)
Industrial Emission (IE)	Eco Friendly Industries	CO2 emissions from manufacturing industries and construction (% of total fuel combustion)
Carbon Emission (CE)	Environment Quality	CO2 emissions (metric tons per capita)
Gross enrolment ratio (GER)	Gross enrolment ratio	Percentage enrolment in higher education.
Educational Parity (EDUP)	Educational Parity	ratio