Impact Investing and Private Equity: Cross-Country Determinants and Economic, Social, and Environmental Outcomes

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Abstract

This paper examines where private equity (PE) and impact investors allocate capital across different income group countries and how these investments are linked to the economic, social, and environmental outcomes of portfolio countries. I construct a comprehensive dataset of 3,413 impact private equity funds and combine it with private equity transactions, macroeconomic indicators, and climate adaptation measures at the country-level. The analysis shows that while both PE and impact investing flows are associated with greater financial openness and geographic proximity, they differ systematically in country targeting. Impact investors direct more capital toward less financially developed and more vulnerable economies, consistent with their social and environmental mandates, whereas PE investors favor countries with stronger governance and higher growth prospects more similar to FDI host countries. Controlling for income and country size, both PE and impact investing are associated with subsequent declines in CO2 emissions intensity suggesting potential environmental benefits. These findings underscore both the promise and constraints of impact investing in fostering economic development and climate adaptation.

JEL Classification: Private Equity, Development Finance, Impact Investment, Climate Adaptation

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1. Introduction

Developing countries are disproportionately exposed to extreme weather events and climate related risks, a vulnerability that is projected to worsen under current climate trajectories, Birkmann et al. (2022)[1]. The Intergovernmental Panel on Climate Change (IPCC) stresses the importance of improving adaptation for these vulnerable and exposed economies, which often face constraints in infrastructure, economic resilience, and basic welfare and living conditions, and calls for increased public and private investment to meet these adaptation needs, IPCC (2022)[2]. While limited access to external financing remains a critical barrier, as public resources and development aid are insufficient to meet the scale of climate and development needs, Hurley and Voituriez (2016), mobilizing private capital, particularly through impact investing and private equity (PE), has become increasingly important. This paper explores the role of private capital for economic development and climate adaptation improvements and examines two central, yet underexplored, questions: *what are the determinants of impact investing and private equity investments across countries and income groups, and what are the outcomes of these investments for portfolio countries?* This study fills this important gap by answering these two questions and with a careful collection of a large sample of 3,413 impact funds and integrating it with private equity transactions, climate adaptation indicators, and macroeconomic variables.

Private equity investors fall into two categories based on their mandate: traditional private equity funds, which focus exclusively on financial returns, and impact private equity funds, which pursue a dual-mandate of financial performance and intentional social or environmental outcomes. Although the finance literature has examined the financial performance and operational effects of both traditional PE and, to a smaller extent, impact investing, Harris et al. (2014), Phalippou and Gottschalg (2009), Barber et al. (2021), Jeffers et al. (2024), the non-pecuniary consequences of these investments, namely the deliberate impacts targeted by impact investors and the unintended spillovers from traditional PE, remain largely unexplored. Given the fast growth of impact AUM in recent years, this aspect of impact investing outcomes has become even more important to understand and document[3]. This gap is particularly notable given the extensive body of work on the determinants and broader non-financial outcomes of FDI, including technology transfer, poverty and inequality reduction Blonigen and Piger (2014); Blonigen and

[1] IPCC Sixth Assessment Report: Impacts, Adaptation, and Vulnerability, Chapter 8: Poverty, Livelihoods and Sustainable Development (2022)

[2] Climate Change 2022: Impacts, Adaptation and Vulnerability. Working Group II Contribution to the IPCC Sixth Assessment Report.

[3] Impact investing has grown rapidly in recent years, with global assets under management exceeding USD 1.1 trillion in 2025. Source: https://www.weforum.org/stories/2025/10/measuring-impact-investing/

Wang (2004); Gohou and Soumaré (2012); Kaulihowa and Adjasi (2018); Nguyen (2021); Paglialunga et al. (2022); Blalock and Gertler (2008); Sinani and Meyer (2004).

This paper contributes to the literature through three main channels. **First**, it advances the impact investing data literature by constructing a comprehensive and carefully assembled dataset of impact funds. The final sample includes 3,413 funds, an order of magnitude larger than prior studies such as Barber et al. (2021), which analyze 159 funds, and Jeffers et al. (2024), which examine 94[4]. While these studies focus on different aspects of impact investing, rely on additional variables, and apply extra filters and exclusion criteria which naturally constrains their sample sizes, the magnitude of the difference nonetheless highlights the contribution of this paper. By identifying a larger universe of impact funds, the dataset enhances the reliability of empirical inference and provides a broader foundation for analyzing impact investing strategies.

Second, this study examines how different country characteristics relate to private equity and impact investing activity. Similar to research on foreign direct investment (FDI), I analyze which economic, institutional, social, and environmental factors are positively or negatively associated with investment flows. Understanding these relationships is important both for policymakers who can use this information to design environments that attract more private capital and for investors, who can better assess which country-level features are most relevant when allocating funds across markets.

Third, this paper fills an important gap in understanding the differential economic, social, and environmental impacts of private equity, impact investing, and FDI inflows across countries. By linking private capital flows to real economic, social, and environmental outcomes, the study bridges the gap between finance and development economics. This perspective highlights how different forms of private investment contribute not only to growth and productivity but also to broader goals such as social change and climate resilience. The analysis provides timely evidence on the role of private investment capital in advancing sustainable development, an area of growing interest for both policymakers and investors seeking to align financial returns with social and environmental objectives.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature, section 3 describes the data, variable construction, sample, and descriptive statistics. Section 4 covers analysis and results for the cross-country determinants of different investment flows. In section 5 I present the analysis and results for the economic,

[4]They apply several filters on their impact fund sample, for example, they focus only on market rate seeking funds, funds operating for at least three years with no data gap at annual level, and screen funds for clear impact goal, on fund's website or legal documents. These filters can potentially decrease their impact fund sample size.

social, and environmental outcomes of investment flows, and section 6 concludes.

2. Related Literature

This study bridges several strands of literature. In the following I review the related literature in development economics, private equity, and impact investing. In addition, I review the existing literature on the link between climate adaptation and economic development and the difference between FDI as multinational corporations (MNCs) and private equity.

2.1. Development Economics:

In the Development Economics area, the existing literature studies climate adaptation from different angles. Mertz et al. (2009) and Huq et al. (2004) study mainstreaming climate adaptation in national policies of developing countries; The latter study documents both the progress made and the substantial remaining challenges in mainstreaming adaptation into national policy making.

Paglialunga et al. (2022) perform a cross-country analysis and examine the impact of weather change, temperature and precipitation[5], on within country inequality. They find that climate change affects the distribution of income negatively. They further argue that countries with a larger share of population living in rural areas and employed in agriculture have a more vulnerable income distribution to weather change. They also study the role of FDI and its composition in this relation. They find that attracting FDI in upstream, knowledge intensive, and different value chain functions is related to a more equal distribution of income. Besides, the adverse effect of climate change is lower in countries with better functional diversification of FDI.

On a similar topic, Baarsch et al. (2020) measure the historical and future effects of climate change[6] on country GDP and find that the cross-country inequalities are projected to worsen in a high warming temperature future. They stress the high exposure and vulnerability of African countries, worse for the western and eastern African countries, to climate risk, the immediate need to improve adaptation in this region, and the importance of access to development support and climate related finance.

In a review paper, Castells-Quintana et al. (2018) look at climate adaptation through the lens of poor households. They discuss how poor infrastructure, climate/weather

[5]They obtain monthly country-level weather data on temperature and precipitation from the Climate Research Unit (CRU).

[6]They use climate data for precipitation , Standardized Precipitation Index (SPI), and temperature from the National Centers for Environmental Prediction (NCEP), part of National Oceanic and Atmospheric Administration (NOAA).

sensitive income, high risk aversion towards technological adaptation, lack of access to credit and financing, and lack of relevant information and knowledge prohibits in-situ or transformational adaptation implementations among poor or vulnerable households. They also review and assess different policy intervention channels to address these issues. Castells-Quintana and his co-authors refer to several relevant works in this context including: Winsemius et al. (2018), Bangalore et al. (2019), Fankhauser and McDermott (2014), Skoufias et al. (2011), Collier et al. (2008) on climate adaptation challenges among poor households/in developing economies; and Clarke and Grenham (2013), Grosh et al. (2008), Pelham et al. (2011), Deressa and Hassan (2009) on policy interventions to improve climate adaptation among economically disadvantaged households.

In another study, Biagini and Miller (2013) study the importance of the private sector engagement in climate adaptation in developing countries. They argue that the private sector has a great potential to accelerate the replication of relevant technologies and services in the main development sectors and improve resilience and adaptation. They address some of the obstacles that the private sector faces in this path and suggest some potential solutions to improve the engagement of private sector in climate adaptation strategies in developing countries. Their work is specifically relevant for my research in that it points out and clarifies how private sector can help climate adaptation improvements which implies the investments of private equities and venture capitals could be influential in the same way.

In the context of natural disaster Noy (2009) finds some background causes of natural disaster events adverse impact on developing countries. He uses the disaster data from EM-DAT[7] and finds that natural disasters affect the macro-economy negatively with a stronger effect in developing countries. He also finds that countries with higher literacy rate, higher per-capita income, better institutions, higher degree of openness to trade, more open capital accounts, more foreign exchange reserves, and higher levels of domestic credit are affected less by natural disasters' initial impact. David (2011) uses the same EM-DAT natural disaster data and financial flow data from the World Bank and finds that remittance flows increase significantly after a natural disaster event. Another interesting finding of his work is that private capital flows, such as bank lending, do not weaken natural disaster impact; however, bank lending outflows after the disaster can amplify a natural disaster negative economic impact.

[7] EM-DAT stands for the Emergency Events Database. EM-DAT contains data on the occurrence and impacts of over 27,000 mass disasters worldwide from 1900 to the present day. The database is compiled from various sources, including UN agencies, non-governmental organizations, reinsurance companies, research institutes, and press agencies. The Centre for Research on the Epidemiology of Disasters (CRED) distributes the data in open access for non-commercial use.

2.2. Climate Adaptation and Economic Development:

The link between Climate Adaptation and Economic Development has been widely discussed in different areas of economics. Climate adaptation is defined as all actions taken to adjust to the occurring climate change and its expected impacts. Development on the other hand addresses actions that improve the well-being of the population by improving different dimensions including, economic sufficiency, social equity, personal security, health, opportunity, and freedom, McGray et al. (2007). The two are interconnected and are a component of the other. Development is a form of adaptation in that it improves resilience and accelerates adaptive capacity and adaptation is a form of development as it improves resilience to climate impacts and supports improving economic and social developments, Ayers and Dodman (2010). Integrating adaptation into development plans makes sure that the development activities address concerns regarding climate vulnerability and climate change impacts, Klein et al. (2007).

Lemos et al. (2013) highlight this link by studying the relationship between generic capacities, such as income, health, and education, and climate specific factors in building climate resilience in developing countries. They argue that strengthening both generic and climate specific capacities is necessary for reducing long-term climate risks and for responding more effectively to short-term climate events and impacts. In their review paper, Castells-Quintana et al. (2018) underscore the importance of considering climate adaptation and economic development policies together.

Clarifying the definitions and the relationship between economic development and climate adaptation investments is central to my research question, as it underscores the importance of examining climate adaptation alongside economic development factors. Moreover, recognizing this interdependence strengthens the case for using impact investing data with greater confidence when assessing a wide range of social, economic, and climate adaptation outcomes.

2.3. Private Equity:

The Private Equity (PE) industry has been extensively studied in the finance literature. Different aspects of private equity investments have been investigated; including private equity fund performance (Phalippou and Gottschalg (2009), Harris et al. (2014)), private equity general partners (GP) managerial decisions (Gompers et al. (2016)), buyout impact on employment and job reallocation (Davis et al. (2011)), leveraged buyout (LBO) and short-termism (Lerner et al. (2011)), and recently private equity and ESG (Zaccone and Pedrini (2020)).

Private equity investments have also been studied in the developing world and

emerging markets. Divakaran et al. (2014) explain the importance of technological assistance from the private equity or venture capital investors to small and medium-sized enterprises (SME) in developing countries. They argue that bringing knowledge and expertise to these companies can potentially help to earn higher return on the PE/VC investments and increase investor commitment. In another study, Lerner and Schoar (2005) examine how national legal enforcement affects private equity transactions. They document that investments in countries with stronger legal enforcement are associated with higher profits and returns, as these environments facilitate more active and involved ownership by private equity investors.

In the context of natural disasters, Baltas et al. (2022) find that alternative investments, including private equity, increase in the aftermath of natural disasters. Their analysis is based on a sample of U.S. companies.

2.4. Impact Investing:

The Impact Investing literature has been growing given the recent growth of impact AUM. The Global Impact Investing Network (GIIN) defines impact investing as "investments made with the intention to generate positive, measurable social and/or environmental impact alongside a financial return."[8] The GIIN further elaborates on the characteristics of impact investing which are intentionality, financial return expectation, range of return expectations and asset classes, and impact measurement. Impact investing has grown by a compound annual growth rate (CAGR) of 14% over the last five years[9] and is expected to grow further in the future. In addition, impact investing plays an important role in providing financing to tackle some of the world's most pressing issues (economic, social and climate related). All these have motivated finance research to study impact investing further and from different angels in recent years. However, there are still many questions unanswered about this investment strategy.

In one of the influential studies in impact investing, Barber et al. (2021) compare the performance of dual-objective venture capital funds with traditional VC funds. They use funds, investor, and performance data from Preqin and use other sources to construct a sample of 159 impact investing funds. They find that impact VC funds earn, on average, 4.7 percentage points lower IRR than traditional VC funds. Using a random utility framework, they show that investors nonetheless willingly accept this under-performance: their estimated willingness-to-pay (WTP) corresponds to choosing funds that sit roughly 13–18 percentiles lower in performance rankings, equivalent to an ex-ante sacrifice of 2.5–3.7 percentage points in expected IRR.

[8] https://thegiin.org/publication/post/about-impact-investing/what-is-impact-investing

[9] https://s3.amazonaws.com/giin-web-assets/giin/assets/publication/giin-stateofthemarket2024-report-2024.pdf

In a more recent study, Jeffers et al. (2024) introduce a new data-set of impact funds cash flows and study the risk exposure and risk-adjusted return of these funds. They find that impact funds have lower market exposure than benchmark private funds. They further show that the risk-adjusted return for impact funds is close to the matched non-impact funds and VC funds suggesting that the lower market exposure explains much of the difference in IRR[10].

In another study, Boulongne et al. (2024) investigate the of role impact investing in improving social inclusion of disadvantaged urban areas of France. They find that impact investors debt financing to businesses in banlieues in France helps creating more quality jobs, having better financial performance, and more jobs for social minorities. They use a difference-in-difference methodology to examine this impact.

Burton et al. (2021) construct a new dataset of 445 impact investing firms and their 14,165 portfolio companies. They explain in detail the data sources and steps to build their sample. They further describe different characteristics of the impact investors and investees including location, investment type (equity, hybrid, non-equity, NA), legal form (profit, non-profit, NA), portfolio company location, and industry sector. In this paper I use an approach similar to theirs to construct my sample of impact investors and their portfolio companies.

Other works have been contributing to learn more about impact investing and its different aspects as well, for example, Chowdhry et al. (2019) and Block et al. (2024) study the motivations behind PE and VC investments on climate projects, while Geczy et al. (2021) work on impact funds contract and compensation adjustment to factor in the social aspect of their mandate.

Lerner et al. (2009), Jandrić and Geršl (2024), and Kaya and Orpiszewski (2025) examine the determinants of private equity and impact investing, each from a distinct empirical perspective. Lerner et al. (2009) focus on the period 1990–2008, highlighting fund level dynamics in European private equity markets. They show that fund level returns are shaped by industry capital inflows, general partner (GP) skill, and idiosyncratic fund risk, highlighting the importance of fund characteristics and market conditions.

Jandrić and Geršl (2024) analyze a sample of 26 European countries from 2007 to 2022, emphasizing country-level determinants of private equity and venture capital activity, including investments, divestments, and fundraising. Using a broad set of macroeconomic, institutional, and structural variables in a panel data framework, they identify trade openness, financial development, public investment in education, inflation, and la-

[10]Matched funds are those with the same vintage, asset type, and closest size to the impact funds. VC funds are US-based VC funds.

bor market size as significant determinants of PE/VC activity. These results provide relevant benchmarks for cross-country analyses, highlighting the importance of institutional quality and financial development in shaping investment activity, which can serve as controls or explanatory variables in empirical studies of both traditional and impact funds.

Finally, Kaya and Orpiszewski (2025) examine determinants of impact private equity at the micro level, focusing on portfolio companies that are small and medium-sized enterprises (SMEs). They find that younger, more transparent firms in developing countries, especially in agriculture, are more likely to receive impact investments, which are often large, concentrated equity injections. Together, these studies offer benchmarks at different levels including fund, country, and firm characteristics which are relevant to this study.

2.5. Multinational Corporations vs. Private Equity Investors:

Distinguishing between FDI and private equity investment is essential because they operate under different objectives, constraints, and value creation mechanisms, which could lead to different effects in host/portfolio countries. The predominant focus of the FDI literature is on multinational corporations (MNCs), since they account for the majority of global FDI flows. As Baziki et al. (2017) explain, MNCs are large, often publicly listed corporations with firm specific intangible assets such as proprietary technologies, patents, managerial know-how, and brand capital which they seek to deploy and protect internationally. Their investments are long-term focused and shaped by considerations related to intellectual property protection, global supply chain integration, and strategic market access. Accordingly, MNCs may limit technology diffusion or retain high value activities such as R&D within the parent firm to preserve competitive advantage.

Private equity (PE) investors, on the other hand, operate under a different model. Structured as partnerships, PE funds rely on leveraged acquisitions and create value through operational restructuring, governance improvements, and capital structure optimization rather than through the exploitation of proprietary technological assets, Kaplan and Strömberg (2009). Their investment horizon is short to medium term with performance evaluation at exit. These features give PE investors strong incentives to rapidly improve efficiency and growth at the portfolio firm level. Impact PE funds introduce additional heterogeneity by committing to a second mandate which is measurable social or environmental outcomes in investment selection and during the holding period, which has a considerable potential to affect their choice of portfolio countries.

Because MNCs, traditional PE, and impact PE funds pursue different goals and operate through distinct mechanisms, their investment decisions and economic effects

cannot be treated as equivalent. Consequently, empirical results derived from the traditional FDI literature, centered on MNCs, are not directly applicable to PE investors or impact funds, Baziki et al. (2017). Recognizing this heterogeneity is crucial for accurately understanding how foreign capital affects firm performance, employment dynamics, and broader economic development.

3. Data and Sample

3.1. Private Equity Data:

To construct a private equity (PE) sample, I use Preqin's data. Preqin provides information on deals, investors, and their portfolio companies in its Companies & Deals dataset. The dataset includes private equity deals, covering both venture capital and buyouts, and provides detailed information on deals, including deal ID, date, size in USD, and status, as well as information about investors (name, type, location, geographic focus, strategy) and portfolio companies (name, location, industry, contact), among others. In this paper, I use deal size in USD, deal date, investor location (city and country), and portfolio company location (city and country) from this dataset. The primary PE sample includes 174,148 buyout deals with dates from 1937 to 2025 and 795,064 venture capital deals with dates from 1956 to 2025. This sample covers both traditional and impact private equity deals.

3.2. Impact Deals Sample Construction:

To construct a sample of impact private equity deals, I follow the approach explained in Barber et al. (2021) and Burton et al. (2021). After careful consideration of different sources, I use impact firm and impact fund data from three sources: the ImpactAssets historical list of impact asset managers (impact firms), Preqin's list of funds labeled with an impact designation, and private equity deal data for Development Finance Institutions (DFIs), available through Preqin.

3.2.1. ImpactAssets

I obtain a historical sample of firms listed in ImpactAssets 50 (IA 50), emerging impact managers, and emeritus impact managers from 2011 to 2025; the sample is scraped from ImpactAssets' website[11]. This list includes 381 unique private equity firms with an explicit impact focus. ImpactAssets employs a careful and comprehensive selection process involving a review committee of experienced impact leaders. The committee has specific focus on firms' intent and commitment to social/environmental impact and evaluates different metrics of social and/or environmental performance (e.g., GIIRS ratings, IRIS

[11] https://impactassets.org/ia50/?filters=

metrics, or other indicators). Given this selection process and criteria, I conclude the ImpactAssets list of impact asset managers as explicitly impact-focused firms[12],[13].

To identify deals related to these firms, I merge the ImpactAssets firm data with Preqin's venture capital (VC) and buyout (BO) deal datasets, which includes investor firm, investor fund/funds, portfolio company, deal ID, deal date, and deal size, among other variables. I use a fuzzy matching method (85% threshold) to maximize the number of matched firms, followed by a manual review to correct potential mismatches. After merging the two datasets, there are 479 buyout deals and 4,318 venture capital deals linked to ImpactAssets firms. After adding the two deal samples together and cleaning for deal ID duplicates and deal size missing values the ImpactAssets firms are linked to 3,547 unique impact deals from Preqin. The deal dates range from 2000 to 2025 with 91% of deals happening after 2010.

3.2.2. Impact Funds from Preqin

Next, I use Preqin's list of impact-labeled funds, which includes 1,189 unique funds. These funds focus on a dual-mandate for both social/environmental impact alongside financial return. To gather deal data for these funds, I merge this sample with Preqin's private equity deals datasets (venture capital PEs and buyout PEs), using the fund as the matching key. After merging and cleaning for duplicated deal IDs and missing deal size values, the impact fund sample is linked to 3,766 unique deals with dates from 2003 to 2025.

3.2.3. Development Finance Institutions (DFI) Deals

Development Finance Institutions (DFIs) are publicly owned organizations that are willing to take on greater risk in order to provide capital to companies in countries that need it most, particularly those considered too risky for other private equity investors, such as businesses in developing and least developed economies. In their mandate, DFIs focus not only on generating financial returns but also on delivering sizable economic, social, and environmental outcomes, such as creating jobs, supporting renewable energy projects, improving green infrastructure, and fostering scalable enterprises that drive economic development and growth[14]. Including DFIs is therefore, particularly important as their regional focus contributes to a more geographically diverse deal sample across different income groups. I include 14 bilateral DFIs by screening Preqin's deal dataset[15]. To

[12] https://impactassets.org/wp-content/uploads/2021/12/Issue-Brief-4.pdf
[13] https://impactassets.org/ia-50/
[14] https://www.norfund.no/
[15] The international development finance institutions and agencies include the International Finance Corporation (United States), British International Investment (United Kingdom), Swiss Agency for Development and Cooperation (Switzerland), Development Bank of Austria (Austria), BIO Invest (Bel-

obtain deals linked to DFIs, I merge the DFI investor firm list with the venture capital and buyout deals data from preqin using investor firm as matching key. After cleaning the DFI deals sample for deal ID duplicates and deal size missing values, I have 658 unique deals for the period 2002 to 2025 linked to the 14 DFI firms.

After combining the three sources, I clean the final impact deals dataset to remove duplicate deals across the three samples. The resulting sample includes 3,413 impact funds and 7,179 unique impact deals covering the period from 2000 to 2025. This **impact sample is one of the main contributions of this study** as it covers a considerably larger number of impact funds than the previous studies in the literature, Barber et al. (2021) with 159 impact funds and Jeffers et al. (2024) with 94 impact funds.

3.3. Climate Vulnerability Data:

I use the Notre Dame Global Adaptation Initiative database to get country-level variables for different measures of climate adaptation. The database includes an aggregate measure of climate adaptation which is labeled as GAIN Index and is a combination of readiness and vulnerability indicators[16]. Vulnerability measures a country's exposure, sensitivity and adaptive capacity to deal with negative impacts of climate change. The measure is calculated for six life-supporting sectors including: food, water, ecosystem service, human habitat, and infrastructure where for each sector there is data on indicators related to exposure, sensitivity, and adaptive capacity. Readiness measures a country's ability to use investments to build climate adaptation and consists of three components: economic, governance, and social readiness[17]. The dataset covers 192 countries for the period 1995 to 2024.

For this study, I use vulnerability and readiness indicators scores and investigate their relationship with my private equity ratios and FDI. In addition, I examine climate change vulnerability and readiness as determinants of private equity and FDI investments. This test is specifically important since climate risk and vulnerability are among factors private equity and impact investors consider in their portfolio country decisions.

3.4. The World Bank Database:

I obtain a comprehensive set of variables from the World Bank. I use the World Development Indicators (WDI), Environmental, Social, and Governance (ESG) data, and

gium), Brazilian Development Bank (Brazil), Investment Fund for Developing Countries (Denmark), Finnfund (Finland), Norfund (Norway), Swedfund (Sweden), Agence Française De Développement (France), DEG (Germany), KfW Development Bank (Germany), DBJ Capital (Japan), FMO (Netherlands), FMO: Dutch Entrepreneurial Development Bank (Netherlands), and Cofides (Spain).

[16] https://gain.nd.edu/our-work/country-index/rankings/

[17] https://gain.nd.edu/assets/522870/nd_gain_countryindextechreport_2023_01.pdf

Worldwide Governance Indicators (WGI) datasets to get the relevant variables for this paper, a list of variables with their unit of measurement and definitions is presented in appendix table **??**.

For measures of economic development, size, and national income I use the Gross Domestic Product (GDP) per capita, total GDP, and the Gross National Income (GNI) per capita. I also use annual % growth in agriculture, forestry, and fishing, value added, annual % growth in industry, value added, and annual % growth in services as measures of different sectors development and contribution to economic growth. As measures of financial development and availability of external financing I obtain domestic credit to private sector (% of GDP) from the WDI dataset. I further use foreign direct investment net inflows (% of GDP), market capitalization of listed domestic companies (current US), exports of goods and services (current US), imports of goods and services (current US), and educational attainment (at least post-secondary) population +25, total, which serves as a measure of human capital. For countries' institutional quality, I use six variables including control of corruption, political stability and absence of violence/terrorism, regulatory quality, voice and accountability, government effectiveness, and rule of law from the WGI dataset.

In addition, I obtain data from the World Bank's Environmental, Social, and Governance (ESG) Dataset including unemployment rate, female to male labor force participation rate %, Gini index, children in employment, access to electricity, literacy rate, school enrollment, food production index, fossil fuel energy consumption, renewable electricity output, renewable energy consumption, and CO2 emission tons per capita.

After merging all World Bank variables, the original sample includes 17,209 country-year observations for the period 1960 to 2024.

3.5. The International Monetary Fund:

I construct an indicator of financial openness as the ratio of a country's domestic equity held by foreign investors. To construct this measure I obtain Portfolio Equity Liabilities from IMF. I further divide it by a country's nominal GDP to calculate financial openness. The IMF sample includes 11,556 country year observations covering the 1970 to 2023 period.

3.6. Sample

To construct my final country-level panel data sample, I merge the four mentioned panels on country and year: the private equity panel including annual traditional, impact, and aggregate private equity ratios, country climate adaptation indicators from the Notre

Dame Global Adaptation Initiative database, country characteristics data form the World Bank, and country portfolio equity liabilities form the IMF.

The final sample includes 17,196 unique country-year observations covering the period 1960 to 2025. The number of countries per year has low variation throughout the sample, however, the data coverage for the earlier years is weaker than the recent years.

3.7. Variable Construction

I use the variables form the above mentioned sources directly or to construct new measures. The first variable I construct is an annual country-level private equity ratio. First, I convert the private equity and impact investing deal data from deal-year structure to country-year structure by aggregating deals' USD size by country and year for impact and traditional private equity deals. I further sum the two categories' flows to have an aggregate private equity deal size for every country and each year. The private equity deals here are the deals initiated in a year. Following the FDI structure and formula, I define a **Private Equity Ratio** variable for every country in my sample with the following formulations for the three private equity flow categories:

$$PEratio_{i,t}^{Aggregate} = \frac{PE_{i,t}^{Aggregate}}{GDP_{i,t}} \tag{1}$$

$$PEratio_{i,t}^{Traditional} = \frac{PE_{i,t}^{Traditional}}{GDP_{i,t}} \tag{2}$$

$$PEratio_{i,t}^{Impact} = \frac{PE_{i,t}^{Impact}}{GDP_{i,t}} \tag{3}$$

Where $PEratio_{i,t}$ denotes private equity investment as a share of GDP for country i in year t. The numerator, $PE_{i,t}$ represents the dollar amount of new private equity investments in country i during year t, including both domestic and foreign inflows. The superscripts indicate the type of fund: $Aggregate$ refers to all PE funds, $Traditional$ to funds with a single financial return mandate, and $Impact$ to funds with a dual-mandate targeting both financial returns and social or environmental outcomes. The denominator, $GDP_{i,t}$ is the nominal GDP (in USD) of country i in year t.

These PE investment ratios are constructed in a similar fashion as the World Bank's measure of Foreign Direct Investment net inflows (as a percentage of nominal GDP), enabling cross-country comparisons and indicating the contribution of private equity to a country's economic activity. Scaling investment flows by economic size is essential to ensure comparability across countries. Henceforth, I refer to these measures as PE, TPE, and IPE for simplicity.

Next, I construct variables to measure countries differences in inflation and exchange rate as well as financial openness, governance and institutional quality, trade openness, and distance from investor to portfolio country. **Inflation Variation** measures how a country's inflation rate deviates from the sample benchmark, defined as the difference between the country's inflation rate and the cross-sectional median inflation rate.

$$Inflation\ Var_{i,t} = Inflation_{i,t} - Median\ Inflation_{i,t} \tag{4}$$

where $Inflation\ Var_{i,t}$ measures country i's inflation variation relative to the sample median in year t. $Inflation_{i,t}$ is calculated using GDP deflator data for country i in year t. Similar to the Inflation Variation measure, I construct an **Exchange Rate Variation** variable that captures a country's exchange rate depreciation or appreciation against the U.S. dollar relative to the sample median.

$$Exchange\ rate\ Var_{i,t} = Exchange\ rate\ Change_{i,t} - Median\ Exchange\ rate\ Change_{i,t} \tag{5}$$

where $Exchange\ rate\ Var_{i,t}$ measures country i's Exchange rate variation relative to the sample median in year t. $Exchange\ rate\ Change_{i,t}$ is calculated using exchange rate data for country i in year t[18]. **Financial Openness** is the fraction of a country's domestic equity market which is owned by foreign investors. It is a country's portfolio equity liabilities divided by GDP in USD.

$$FO_{i,t} = \frac{PortfolioEquityLiabilities_{i,t}}{GDP_{i,t}} \tag{6}$$

where $FO_{i,t}$ is the financial openness measure for country i in year t, $PortfolioEquity\ Liabilities_{i,t}$ is the total market value of country i equity owned by foreign investors in year t[19].

Next, I construct AGI which stands for **Average Governance Index** as a measure for overall governance and institutional quality in a country. AGI is the average of the six Worldwide Governance Indicators including control of corruption, political stability and absence of violence/terrorism, regulatory quality, voice and accountability, government effectiveness, and rule of law. Another variable is **Trade Openness** which is the sum of a country's import and export of goods and services divided by current GDP as a

[18]In this formula I calculate $Exchange\ rate\ Change_{i,t} = \frac{FX_{i,t}}{FX_{i,t-1}} - 1$, where $FX_{i,t}$ is the exchange rate (against the USD) for country i's currency and USD in year t.

[19]I construct the financial openness using the GDP since the domestic equity market variable has a large number of missing values.

measure of a country's integration with the global economy.

$$TO_{i,t} = \frac{Import_{i,t} + Export_{i,t}}{GDP_{i,t}} \tag{7}$$

where $TO_{i,t}$ is trade openness measure for country i in year t, $Import_{i,t}$ and $Export_{i,t}$ are import and export of goods and services for country i in year t and $GDP_{i,t}$ is the total current GDP for country i in year t.

It is well established in the FDI and international trade literature that distance affects trade through multiple dimensions, including cultural and institutional differences, knowledge and technology spillovers, and logistics costs. In the context of technology transfer via international investment, the further apart economies are in terms of technological advancement, the greater the potential of impact is for technology transfer and spillover. To capture the role of distance in this study, I construct a measure of geographic distance between investors and their portfolio companies. Specifically, I calculate an aggregate weighted distance, defined as the weighted average of the geographical distance between the cities of private equity investors and their portfolio companies. Preqin provides data on the city of investors and portfolio companies, in cases where the city is missing but the country is reported, I use the capital of the country to find the distance measure. The aggregate weighted distance is a country–year measure, calculated as the weighted average of all deal distances for a given country and year, using deal size (in USD) as weight. I use the following formulas to find the **Weighted Aggregate Distance (WAD)**:

$$Sw_{j,i,t} = \frac{DealSize_{j,i,t}}{\sum_{j=1}^{n} DealSize_{j,i,t}} \tag{8}$$

$$Dw_{j,i,t} = Distance_{j,i,t} \times Sw_{j,i,t} \tag{9}$$

$$WAD_{i,t} = \sum_{j=1}^{n} Dw_{j,i,t} \tag{10}$$

where $Sw_{j,i,t}$ denotes the share of deal j's USD size in year t in country i relative to the total USD size of all n deals in the same country and same year. $Dw_{j,i,t}$ is the weighted distance of deal j at time t in country i and $WAD_{i,t}$ is the sum of the weighted distance of all n deals in country i and year t which is a country-year measure. The formulas are general and are applied separately to traditional and impact deals in the sample.

3.8. Summary Statistics

Here, I present the summary statistics of my sample, along with correlations, changes in income-group compositions over time, and differences in variables between low- and high-income countries, based on a mean-difference analysis.

(Insert Table I about here.)

3.8.1. Country Characteristics

Table I reports summary statistics for key country characteristics in the main sample. To construct this sample, I have winsorized variables which have both lower bound and upper bound outliers identified by an interquartile range (IQR) measure. The winsorized variables are FDI, GDP growth, inflation variation, exchange rate variation, agriculture value added, industry value added, and services value added. In addition, I winsorize PE and TPE due to extreme outliers in the upper bound which could affect the results. The sample summary statistics before winsorization is presented in table XII in appendix.

Table I displays high variation in data coverage for different variables with GDP variables having the highest, 81.8%, and Human capital, educational attainment at least post-secondary, having the lowest coverage, 8.5%. One reason for the missing values is that this sample is collected from different sources with different time coverage. Among the variables listed in the table, log GNI per capita (Atlas method) captures cross-country differences in income levels. The variable has 12,474 non-missing values, with an average of 7.690 and a median of 7.601, indicating a close to symmetric distribution. We can see similar patterns for Log GDP, Log GDP per capita, and GDP growth as well.

For the aggregate governance index the range is between -2.5 (weak governance) and 2.5 (strong governance), given the extreme values of the underlying indicators. In this sample, AGI is available for 4,824 observations, ranging from –2.41 to 1.95. The mean, –0.061, is close to the neutral point of 0, while the median, –0.199, indicates that slightly more than half of the observations lean toward weaker governance. The standard deviation of 0.905 suggests substantial cross-country variation in governance and institutional quality.

Trade openness is available for 10,683 observations. The mean and median values are 0.67 and 0.581, respectively, indicating that in half of the sample trade accounts for less than 59% of GDP, while the higher mean reflects the influence of highly open economies. The maximum value of 1.999 implies trade flows close to 200% of GDP, which typically occurs in small, trade-dependent economies. The standard deviation of 0.360 highlights the high dispersion of trade openness across the sample.

The climate adaptation related variables including vulnerability, readiness, economic, governance, and social take values between 0 and 1. In the sample, they show low to moderate variation across countries, with standard deviations ranging from 0.094 for vulnerability to 0.224 for governance. The medians for all five variables are slightly lower than the means, reflecting a modest right skew, while the maximum values indicate that some countries perform substantially better or worse (for vulnerability) on these dimensions.

3.8.2. Private Equity Ratios and Deals Characteristics

Table I shows that PE, TPE, and IPE have small values across the sample, as expected since they are investment flows scaled by total nominal GDP. On average, aggregate, traditional, and impact private equity investments are 0.5%, 0.51%, and 0.03% of GDP, respectively. Standard deviations indicate that PE and TPE vary more across countries (1.09% and 1.13%) compared to IPE (0.08%). Even the country with the maximum IPE has only 0.85% of GDP in impact investments, highlighting the small role of IPE in overall economic activity. This small magnitude of IPE raises several important considerations. **First**, it may be underestimated due to the relatively low number of reported impact deals, as some private equity investments with an impact focus may not be correctly classified because of limited data availability. **Second**, given its small overall share of GDP, IPE is likely to have its effects concentrated in specific sectors or areas, where well-targeted investments can still generate significant economic, social, or environmental impact. **Finally**, the limited scale of IPE means that extra caution is needed when analyzing its relationship with economic variables, ensuring that other factors influencing these outcomes are properly controlled for.

3.8.3. Correlation

Table II presents the correlations between FDI, PE, TPE, and IPE with each other and other variables. As we can see TPE and PE are nearly identical with a correlation of 99.9% since most of the private equity (PE) investment in the sample is categorized as traditional private equity (TPE) type[20]; Therefore, to avoid redundancy, I include only PE in the remaining analysis. The impact component has low positive and low negative correlations with PE and TPE, 1.3% and -3.00% , respectively. In addition, Foreign Direct Investment (FDI) exhibits small positive correlations with the three private equity measures, 8.2%, 8.3%, and 7.4% for PE, TPE, and IPE ratios, respectively. These relatively small correlations suggest that FDI and private equity may be attracted to

[20]For the PE category the majority of the values are either only traditional private equity or the sum of traditional and impact private equity with a small number being only impact private equity. This drives the high, nearly perfect correlation between PE and TPE.

countries with similar underlying characteristics, or that the presence of one form of capital signals favorable investment conditions for the other.

(Insert Table II about here.)

Moreover, the table displays that the correlations between FDI, PE, TPE, and IPE ratios and other variables are generally low in this sample. Interestingly, the correlations between IPE and some country characteristics have the opposite sign as the correlation between TPE, PE, and FDI and the same characteristics. For example, AGI, climate change readiness and its components including economic, governance, and social indicators, fossil fuel energy consumption, access to electricity, and CO2 emissions show negative correlations with IPE, and positive correlations with PE, TPE, and FDI. Apart from the fossil fuel energy consumption and CO2 emissions, the other variables could indicate a lower development stage, higher climate risk, and possibly higher potential for creating impact in these countries. For the fossil fuel and CO2 emission variables this could be both an indication for the outcome of impact investment and less development and industry consumption of fuel and consequently lower emission. For vulnerability and renewable energy out put the correlations are positive for IPE and negative for other variables which can be interpreted with the same logic as above.

3.8.4. Income Groups Over Time

Figure 1 shows the changes in the number of countries in each income group including low, lower-middle, upper-middle, and high income over time for four different samples. The income group categories are the World Bank annual income categories which are assigned to countries based on annual income thresholds.

(Insert Figure 1 about here.)

Across the **full sample** and the **FDI sample**, the distribution of countries by income group shows similar patterns over time: high and upper-middle income countries make up a growing share, while low-income countries appear less frequently. The lower-middle income group varies without a clear trend. For the **PE sample**, the number of countries receiving PE deals increases among high, upper-middle, and lower-middle income groups, while low income countries show a modest rise followed by a slight decline toward the end of the period.

Impact private equity (IPE) displays broadly similar patterns. However, between 2008 and 2013, the number of IPE portfolio countries across income groups moves very closely together, suggesting a more balanced global spread of IPE during those early years. After 2015, IPE activity becomes increasingly concentrated in high-income countries which may indicate that impact investors are allocating more capital to disadvan-

taged communities within high-income economies rather than exclusively to low-income countries. These results are specific to this sample, and there remains a likelihood of underestimation of IPE due to limited availability of impact investing data.

3.8.5. Differences Between Low and High Income Countries

I further examine the mean differences of several economic, financial, and institutional variables between low and high-income countries. Two approaches are used to classify countries into income groups. In the first approach, I use the annual median Gross National Income (GNI) per capita (Atlas method) from the World Bank, where countries below the median are assigned to the low-income category and those above to the high-income category. In the second approach, I apply the World Bank's official income classifications, grouping low and lower-middle-income countries as low-income and upper-middle and high-income countries as high-income. The mean differences for the first approach are presented in table III. The second approach results are presented in the appendix, table XIII.

(Insert Table III about here.)

As shown in table III, high-income countries (group 2) have significantly higher **FDI** net inflows as a share of GDP compared to low-income countries (group 1). On average, FDI inflows account for 3.52% of GDP in high-income countries versus 2.48% in low-income ones, with a mean difference of –1.04%, significant in 1% level. This indicates that high-income economies attract and sustain more foreign investment relative to their economic size. A similar gap appears in **private equity (PE)** flows which has a mean differences of –0.44%, with average flows of 0.63% of GDP for high-income countries and 0.19% for low-income ones. This could highlight the structural differences in private capital markets between income groups.

The pattern reverses for **impact investing (IPE)** when measured as a share of GDP. Low-income countries show relatively higher IPE ratio, suggesting that impact capital plays a more visible role in their economies. Impact investors often target countries with greater development challenges and opportunities for social or environmental impact. However, in absolute terms, total impact investing volumes remain much smaller in low-income countries, meaning that while impact capital represents a larger share of investment activity, its scale remains modest compared to traditional investment.

Beyond investment flows, the mean difference results in this sample highlight structural differences between the two income groups. Low-income countries show weaker governance (lower AGI scores), lower trade and financial openness, greater vulnerability to climate impacts, and lower climate change readiness. They also have lower educational

attainment at post-secondary level and weaker domestic credit provision. All differences are statistically significant at the 1% level.

Low-income countries also exhibit higher inequality (Gini index), while their economies remain more reliant on agriculture and less service-oriented. They emit less CO2 and consume less fossil fuel, but this largely reflects lower industrial activity rather than an active green transition. Renewable energy shares are higher, possibly driven by hydropower and traditional biomass sources.

Finally, as expected, economic size and development differ sharply: low-income countries have smaller GDP, GNI, and GDP per capita (mean differences of -1.392 for log GDP, –2.303 for log GDP per capita and –2.30 for log GNI), while their GDP growth rates are significantly higher (+0.539), reflecting convergence dynamics. Unemployment rates are slightly lower, likely due to larger informal labor markets.

The results reveal that differences in investment patterns between income groups are closely linked to broader structural and institutional characteristics. High-income countries attract substantially more FDI and PE, reflecting their stronger governance, developed financial systems, and greater political stability, which reduce transaction costs, improve market efficiency, and provide reliable exit channels. They also benefit from higher human capital, including greater educational attainment and workforce skills, deeper domestic credit provision, higher trade and financial openness, and more advanced infrastructure, all of which support diversified and large-scale investment activity. In contrast, low-income countries face weaker institutions, limited financial depth, lower educational attainment, and less developed infrastructure, which constrain traditional private and foreign investment. These countries, however, attract a relatively larger share of impact investment, reflecting both the scarcity of conventional investment opportunities and the greater social, environmental, and developmental needs and climate vulnerability.

Overall, the findings suggest that **the scale and composition of capital flows are not only determined by economic size but are closely intertwined with governance quality, human capital, financial development, and socio-environmental conditions, which jointly shape the investment landscape across income groups.** I show in table XIII, in the appendix, that the results are robust to the second approach of classification. In the next section, I examine the relationship between country characteristics and FDI, as well as different types of private equity investment flows, in greater detail using regression analysis.

4. Cross-Country Determinants of Investment Flows

In this section, I examine how investment flows (FDI, PE, and IPE) relate to country characteristics in a panel regression set-up. In both the international economics and finance literature there are papers studying the determinants of FDI in different economies or the role of different country characteristics in economic growth catalyzed by FDI, among others Li and Liu (2005), Alfaro et al. (2004), Borensztein et al. (1998), Desbordes and Wei (2017), Tsai (1994), Javorcik (2004). In this study, I investigate the relationship between FDI, PE, and IPE and a broad set of country characteristics, economic, social, institutional, and environmental, to identify which factors are associated with attracting or deterring private investments in a country.

4.1. Regression Analysis

The country characteristics and other relevant variables include: the natural logarithm of total GDP as a measure of economic size, GDP growth (annual %) for economic growth, the natural logarithm of GNI per capita as a measure of development, industry value added as a proxy for a country's technological development, trade openness as a measure of a country's integration with the global economy, financial openness and domestic credit to the private sector by banks as measures of financial development, Average Governance Index (AGI) as a measure of institutional quality, climate change vulnerability and readiness as measures of a country's climate adaptation status, and the natural logarithm of the distance (km) between the PE/IPE investor and the portfolio company as a measure of familiarity or cross-country differences. Before including these variables in the regression, I check for the variables correlation to control for multicollinearity, table V.

The results reported in table V display a high degree of correlation between Log GNI and both climate change readiness and vulnerability variables as well as the governance (AGI) variable. As the latter three variables are highly correlated with GNI, I run the following regressions to isolate the component of vulnerability, readiness, and AGI which is not related to log GNI.

$$AGI_{i,t} = \alpha_1 + \alpha_2 logGNI_{i,t} + \xi_{it} \tag{11}$$

$$Vulnerability_{i,t} = \beta_1 + \beta_2 logGNI_{i,t} + \epsilon_{it} \tag{12}$$

$$Readiness_{i,t} = \gamma_1 + \gamma_2 logGNI_{i,t} + \nu_{it} \tag{13}$$

I label the residuals of these regressions as residual vulnerability, residual readiness, and residual AGI, corresponding to ϵ_{it}, ν_{it}, and ξ_{it}, respectively. I further check the

correlations between these residual values and the other variables and show that there is no further concern regarding multicollinearity between these variables and the other regressors in the model. Next, I run the following baseline regression to study the relationship between these variables and FDI, PE, and IPE:

$$INVratio_{i,t} = \alpha + \beta' ECON_{i,t-1} + \gamma' GOV_{i,t-1} + \delta' ENV_{i,t-1} + \rho Distance_{i,t} + \lambda \text{crisis} + fe_i + \upsilon_{i,t} \tag{14}$$

Where the dependent variable $INVratio_{i,t}$ represents $PEratio_{i,t}^{Aggregate}$, $PEratio-_{i,t}^{Impact}$, or $FDI_{i,t}$ which are the aggregate private equity flow ratio, including both foreign and domestic, impact private equity flow ratio, both foreign and domestic, and foreign direct investment net inflows for country i in year t. The right-hand-side variables are country characteristics for country i in year $t-1$, categorized as economic, governance, and environmental, as well as distance variable in year t and crisis dummy. The economic category includes log GDP, GDP growth, log GNI, industry value added, trade openness, financial openness, and domestic credit to the private sector by banks; the governance category includes the residual AGI; and the environmental category includes residual vulnerability and residual readiness. $Distance_{i,t}$ is the weighted average of the distance (in km) between the investor and portfolio company cities, equation (10). Crisis is a dummy variable that equals to 1 for the years 2008 and 2020, corresponding to the global financial crisis and the COVID-19 pandemic, which caused difficulties in international trade and movements due to financial or travel restrictions; fe_i denotes the country fixed effect.

4.2. Results

Table V reports the results of the panel regressions in three columns. The first column presents the results for IPE flows sample which covers 502 country-year observations for 78 countries, the second column displays the results for PE flows sample which includes 1,529 observations for 128 countries, and the third column, presents the FDI determinants results for a sample of 3,315 observations covering 161 countries.

(Insert Table V about here.)

The IPE findings show a negative, -0.008, and statistically significant (10%) association between IPE and the previous year climate change vulnerability, independent from log GNI. This suggests that a country more vulnerable to climate impacts, tends to receive less impact investment relative to its GDP. One possible explanation is that higher vulnerability increases perceived financial and operational risks for investors. Although such countries might offer stronger opportunities from an impact perspective, the results suggest that the risk and uncertainty of investment outcomes outweigh the potential social

returns.

Among the economic variables, lagged FDI and lagged financial openness have positive and significant associations with IPE, 0.001 at 10% level and 0.001 at 1% level, respectively, with corresponding economic significance of 19.47% and 53.67%[21]. These results imply that countries with higher prior FDI likely possess characteristics that reduce investment risk such as developed infrastructure and transparent regulations, having already passed the selection filters of multinational investors. Prior FDI may also generate informational spillovers and mutual familiarity: host countries gain experience in accommodating foreign capital, while investors accumulate local market knowledge, lowering information frictions and making these markets more attractive to subsequent private equity and impact investments.

Similarly, higher financial openness as a proxy for financial development, signals possible lower transaction costs and more reliable exit opportunities, features that are particularly valued by private equity and impact investors. The positive association between financial openness and IPE is consistent with the broader literature linking financial development to the effectiveness of foreign capital flows, Alfaro et al. (2004), and with recent evidence highlighting the importance of open and developed financial systems for private capital allocation, Jandrić and Geršl (2024). More specifically, Desbordes and Wei (2017) demonstrate that financial development in both source and host countries directly facilitates FDI by improving access to external finance and reducing investment constraints, and indirectly by stimulating economic activity that attracts foreign investment. These mechanisms provide possible explanation for the observed positive association between financial openness and impact private equity (IPE) flows in my results.

Log distance is positively and significantly associated with IPE (0.00004, 1% significance). For impact investors, greater distance may reflect a strategy of targeting countries with different levels of development or higher social and environmental needs, where their investments can generate meaningful developmental impact alongside financial returns. However, the economic significance is modest, a one standard deviation increase in log distance corresponds to only a 18.68% increase in IPE, indicating that distance can meaningfully influence impact investment allocation, although its effect is smaller than that of lagged FDI and financial openness.

IPE also shows negative coefficients for GDP growth, trade openness, domestic credit to the private sector, and governance, though these relationships are not statisti-

[21] Calculated as the coefficient multiplied by the independent variable's standard deviation and divided by the dependent variable's mean and multiplied by 100, here: $100 \times (0.001 \times 0.161)/0.0003 = 53.67$ for financial openness. The relatively high percentage for financial openness reflects the small average level of IPE in the sample, indicating a substantial relative effect on impact investment allocation.

cally significant; the signs are consistent with the notion that impact investors may target markets with limited financing availability and greater potential for contributing to economic and institutional growth and development. These patterns illustrate the **impact paradox**: while investors pursue social and environmental objectives, their allocation decisions remain sensitive to financial, operational, and country-level risk factors.

The second column of table V show the regression results for PE ratio. The results show positive and significant associations with financial openness and domestic credit to private sector by banks, 0.0182 at 1% level and 0.00394 at 5% level, respectively. Both variables capture aspects of a country's financial system development, suggesting that economies with more mature financial systems attract higher private equity, consistent with Jandrić and Geršl (2024), Desbordes and Wei (2017), and Alfaro et al. (2004). Similar to IPE, Log distance has a positive and significant association with PE, 0.001 with 1% significance, which could be due to strategic portfolio diversification to invest more in less saturated and competitive markets where there is higher growth potential. In contrast to IPE, PE inflows are positively associated with GDP growth and governance, though these coefficients are not statistically significant. Compared to IPE, this pattern suggests that PE investors tend to favor faster-growing and better-governed economies, reflecting a stronger focus on financial returns and institutional stability.

For foreign direct investment (FDI), the results in column three show that FDI is positively related to the previous year's GDP growth, trade openness, and domestic credit to the private sector by banks, while negatively associated with lagged climate change readiness. The positive association between FDI and GDP growth, 0.001 at 5% level, suggests that multinational corporations (MNCs) prefer faster-growing economies with higher potential returns and expanding markets for their products, consistent with Li and Liu (2005) and Tsai (1994), who show that FDI flows are concentrated in countries with strong growth prospects. The positive association with trade openness, 0.021 at 10% level, reflects that countries more integrated into global markets offer lower investment barriers and wider market access, making them more attractive for foreign capital. The negative relationship with climate change readiness, -0.144 at 5% level, could suggest that MNCs may find greater opportunities in less prepared economies, where capital scarcity allows higher potential returns. While governance and financial openness facilitate entry, overly mature markets may offer fewer untapped opportunities.

Overall, the results show that while impact capital (IPE), private equity (PE), and FDI all respond to financial development and prior investment experience, they differ in their tolerance for risk and institutional quality. PE and FDI are more closely aligned with traditional fundamentals such as GDP growth, trade openness, and mature financial systems, reflecting a stronger focus on financial returns. IPE, on the other hand, shows

greater tolerance for slower growth and weaker governance, consistent with its social mandate; however, it remains deterred by high climate vulnerability and financial frictions. For investors, this underscores the need to balance impact objectives with country-level risk exposure. For policymakers, improving financial openness, credit availability, and regulatory clarity can attract both private and impact capital, while strengthening climate resilience could be more important for mobilizing IPE. Development agencies can play a key role by de-risking highly vulnerable markets through blended finance and guarantees, helping align private capital with development needs.

4.3. Robustness Tests, Alternative Determinants

4.3.1. Human Capital

Human capital is a key determinant of foreign investment and capital flows, particularly in attracting capital, facilitating technology transfer, and promoting economic growth. It is also a determinant for an economy's development with more developed economies having more educated labor, Jandrić and Geršl (2024), Rossi (2020), Li and Tanna (2019), Borensztein et al. (1998). In this paper, I measure human capital using educational attainment of at least post-secondary education. Due to the substantial number of missing values, which reduce the regression sample size, I include human capital as a control in robustness tests, Table XIV, columns 1–3.

(Insert Table XIV about here.)

Human capital inclusion leads to sample size reductions of 45%, 51%, and 67% for IPE, PE, and FDI specifications, respectively. The characteristics regression results are partially robust in the new specification; however, there are a few variables that become significant and some that become insignificant after human capital inclusion. For **PE**, the coefficient on human capital is positive, 0.012 and significant at the 10% level, suggesting that countries with a more educated population tend to attract more private equity investment as a fraction of their GDP. This aligns with the notion that higher human capital improves firm productivity and investment readiness, which in turn signals a more advanced stage of economic development. For **FDI**, the coefficient is also positive, 0.0367, but not statistically significant, indicating a weaker, less consistent relationship between education levels and foreign investment inflows. In contrast, the coefficient for human capital in the **IPE** specification is negative and insignificant. Overall, these findings suggest that while traditional PE and FDI tend to favor more developed economies with skilled workforce, impact investors are more likely to target countries with lower human capital levels, where developmental needs are greater and the potential for social impact is higher.

4.3.2. Inflation and Exchange Rate Variations

According to the 2025 GIIN Market Survey, impact investors identify macroeconomic instability, particularly inflation and high interest rates, as the most significant challenges affecting their portfolios. These concerns sit alongside broader systemic risks such as climate change and global economic slowdown[22]. Therefore, I include inflation variation together with exchange rate variation, as defined in formulas (4) and (5), in the set of determinant characteristics, as both variables provide informative signals for impact investors and other international capital providers. The results are presented in Table XIV columns 4 to 6, which show that the findings are largely robust to the addition of these two macroeconomic indicators. This robustness holds for the relationships between financial openness and IPE/PE, GDP growth and FDI, domestic credit and PE/FDI, as well as the distance between investor and portfolio countries for both IPE and PE. Moreover, the number of observations remains nearly identical to the baseline specification, indicating that the inclusion of inflation and exchange rate variations does not affect the sample size.

5. Economic, Social, and Environmental Outcomes of Investment Flows

One of the main contributions of this study is to examine the association between different private investment flows and economic, social, and environmental outcomes, investigating how these investments may influence various non-financial measures at the country level. This is particularly important as it provides evidence on the role of private capital in promoting resilience and development, with implications for investors seeking both financial and non-financial returns. In this section, I explore this association and assess whether IPE, PE, and FDI are linked to subsequent changes in countries' economic, social, and environmental characteristics.

The analysis in this part focuses on seven outcome variables: GDP growth per capita (economic growth), unemployment (social outcome), and four environmental indicators including climate change readiness, climate change vulnerability, CO2 emissions as tons per capita, CO2 intensity as tons of CO2 per capita to GDP per capita, and renewable energy consumption as a % of total energy use. To identify the appropriate time window for measuring these effects, I draw on prior studies and the typical investment horizon of PE and FDI. For instance, Boulongne et al. (2024) use a three years post investment window relative to the year prior to the investment to assess the social outcomes of impact investments in disadvantaged urban areas in France.

Beyond the literature, I argue that the timing of observable effects likely varies

[22] GIIN State of the Market 2025, Trends, Performance, and Allocations.

across outcomes. The first year after investment often coincides with restructuring, capital expenditures, and employment adjustments, whereas environmental and productivity improvements may emerge closer to the investment exit stage, for PE investments. In addition, given that PE holding periods typically range from three to seven years, any fixed window may imperfectly capture the full effect. Therefore, I evaluate changes over one, three, five, and seven year horizons, each relative to the pre-investment year. The three years post investment relative to the pre-investment year window serves as the baseline specification, while the alternative horizons provide robustness checks capturing short, medium, and longer-term effects.

5.1. Uni-variate Regressions

For the baseline model, I estimate both uni-variate and multi-variate regressions to incorporate relevant controls. The uni-variate regressions are estimated with and without the crisis dummy. I run the following regressions for the uni-variate model:

$$\Delta Y_{i,t+3,t-1} = \alpha_1 + \alpha_2 INVratio_{i,t} + fe_i + \epsilon_{i,t} \tag{15}$$

$$\Delta Y_{i,t+3,t-1} = \alpha_1 + \alpha_2 INVratio_{i,t} + fe_i + Crisis + \epsilon_{i,t} \tag{16}$$

Where $\Delta Y_{i,t+3,t-1}$ is the change in the outcome variables, including the economic, social, or environmental variables, from time $t-1$ to $t+3$, from the year prior to the investment to three years after the investment for country i. $INVratio_{i,t}$ is the investment ratio, PE, IPE, or FDI for country i in year t. The crisis dummy equals to 1 for the years 2008 and 2020, corresponding to the global financial crisis and the COVID-19 pandemic.

5.1.1. Results

The results without the crisis dummy are reported in Table VI, presented in three panels for IPE (Panel A), PE (Panel B), and FDI (Panel C). The findings indicate that impact investing is positively associated with subsequent increases in renewable energy consumption, aligning with the stated environmental objectives of impact investors and their role in supporting the energy transition in portfolio countries. For private equity, on the other hand, investments are associated with declines in CO2 emissions and changes in climate readiness, while also exhibiting a positive relationship with renewable energy use. This pattern suggests that traditional private capital may contribute to environmental efficiency gains through technology upgrades and improved resource allocation, even when environmental outcomes are not the primary investment objective. For FDI, the negative association with climate vulnerability indicates that multinational firms tend to allocate capital away from countries facing higher climate risks, reflecting concerns about long-

term operational stability and profitability.

(Insert Table VI and VII about here.)

Table VII introduces a crisis dummy to account for global shocks. The results show that crisis periods are strongly associated with changes in macroeconomic and environmental outcomes across all investment types, highlighting that the influence of foreign, private, and impact capital is highly contingent on global conditions. Together, these findings suggest that while private and impact investments can support environmental and developmental outcomes, their effectiveness and direction are affected by broader macroeconomic and systemic shocks.

5.2. Multi-variate Regressions

In the multi-variate regressions, I include a comprehensive set of control variables selected according to their relevance for each dependent variable. These controls include log GDP, GDP growth, log GNI, inflation variation, exchange rate variation, industry value added, trade openness, financial openness, domestic credit to the private sector by banks, residual AGI, renewable energy consumption, and the crisis dummy. Not all controls are included in every regression, for example, renewable energy consumption is used only when CO2 emissions and intensity are the dependent variable, while domestic credit is included for vulnerability, readiness, and unemployment specifications. The general equation for the multi-variate model is as follows:

$$\Delta Y_{i,t+3,t-1} = \alpha + \beta INV\ ratio_{i,t} + \gamma' Contol_{i,t} + fe_i + Crisis + \epsilon_{i,t} \tag{17}$$

5.2.1. Results

The results of the regressions are reported in table VIII for IPE, in table IX for PE, and in table X for FDI.

(Insert Table VIII, IX, and X about here.)

We see in table VIII that IPE has a negative and significant association with CO2 intensity measured as tons of CO2 emissions per capita over GDP per capita, -0.035 at 5% level, suggesting that either emissions are being reduced, or GDP is growing faster than emissions. IPE possibly contributes to this through investments in cleaner technologies, renewable energy, energy-efficiency practices, or by supporting forms of economic growth that are not inherently carbon-intensive, such as investments in service-oriented or agricultural sectors. The remaining coefficients are not statistically significant, however, have an economically intuitive sign such as reduction in unemployment, CO2 emission decrease,

increase in renewable energy consumption, improved climate change readiness, and higher economic growth which support the social and environmental mandate of impact investing.

PE related results are reported in table IX. Similar to IPE, PE has a negative and weakly significant link with CO2 intensity indicating improvements in carbon efficiency following investment. In addition, PE shows negative and significant relationships with CO2 emissions, -6.189 at 5% level, unemployment, -0.125 at 10% level, and climate change readiness, -0.257 at 1% level. Together, these findings suggest that, within three years of PE investment, countries in the sample experience lower emissions, improved carbon efficiency, and reduced unemployment relative to the pre-investment period, alongside weaker performance in climate adaptation readiness.

The reductions in CO2 intensity and emissions are consistent with the role of PE investors in introducing operational efficiencies, cost-reducing technologies, and improved management practices that indirectly lower environmental footprints. The negative association with unemployment aligns with evidence that PE investments can expand firm operations and generate formal employment in the medium term, despite mixed findings in the literature, Davis et al. (2011). The decline in climate change readiness is more difficult to interpret, as readiness indicators typically evolve slowly and may not respond within a three-year horizon. Alternatively, PE investments may be concentrated in sectors that improve productivity and employment without directly strengthening climate adaptation capacity, leading to weaker relative readiness outcomes.

Finally, the results for FDI are reported in Table X. Controlling for various variables, the results show a positive and significant relationship between changes in unemployment and renewable energy with FDI, 0.021 and 0.029 coefficients, both at the 5% significance level. We further see that FDI has a negative and weakly significant link with GDP growth change, -0.079 at the 10% level. The positive association with unemployment reflects that foreign investors might enter sectors that are capital intensive rather than labor absorbing, or restructure existing industries in ways that temporarily reduce employment, perhaps through reducing manual labor or replacing domestic labor with international workers, Jude and Silaghi (2016), Baldwin (1995). The increase in renewable energy investment may indicate that foreign capital is directed toward clean energy projects, which is in line with growing a sustainable business. The weak negative link with GDP growth can have different possible reasons, such as FDI targeting countries already experiencing slower growth, or because the benefits of foreign investments typically take longer than three years to materialize; however, this is a complex relationship that has had mixed directions in the literature, Li and Liu (2005), Alfaro et al. (2004), and Borensztein et al. (1998).

Overall, these findings suggest that all three investment categories, IPE, PE, and FDI, can influence environmental outcomes, such as emissions reduction or increased clean energy use, though the underlying motivations may differ. For IPE, these effects are likely driven by intentional social and environmental objectives, whereas for PE and FDI, they may reflect energy efficiency improvements or strategies to mitigate material environmental risks. Importantly, the multivariate results reveal distinct differences across these investment strategies' outcomes. While not all coefficients are statistically significant, the signs of IPE outcomes consistently align with its social and environmental impact mandate, except for climate change vulnerability. In contrast, PE and FDI exhibit more mixed results, suggesting a stronger focus on financial returns, with social or environmental effects potentially arising as secondary outcomes. Taken together, these patterns highlight that **the type of capital and investor mandate play a critical role in shaping both the environmental and broader economic impacts of investment**.

5.3. Robustness Tests

5.3.1. Alternative Assessment Windows

Following previous section, I present results for three alternative time windows to measure the association between different investment flows and macroeconomic outcomes. Specifically, I examine changes in the seven outcome variables[23] over one, five, and seven years ($t+1$, $t+5$, and $t+7$), relative to the pre-investment year, to capture immediate/short-term, medium-term, and long-term effects. The results for both univariate and multivariate analyses are reported in Tables XV and XVI in the appendix.

(Insert Tables XV and XVI about here.)

The multivariate results reveal distinct short-term, medium-term, and long-term patterns across investment types. In the **short-term** $(t+1)$, **IPE** flows are positively associated with GDP per capita and climate vulnerability, reflecting their dual financial and social objectives. **PE** flows show immediate reductions in unemployment and CO2 emissions, likely due to restructuring and operational efficiencies introduced by PE-backed firms. **FDI** exhibits a negative association with climate vulnerability, suggesting either investment preference for less vulnerable economies or contributions to mitigation.

Medium-term effects $(t+5)$ are broadly consistent with the baseline model $(t+3)$ results, Section 5.2. **PE** continues to reduce CO2 emissions and intensity, while climate change readiness remains negatively associated, reflecting sectoral focus and the slow

[23]These variables are: GDP growth per capita (economic growth), unemployment (social outcome), and four environmental indicators including climate change readiness, climate change vulnerability, CO2 emissions (tons per capita), CO2 intensity (CO2 (tons per capita) to GDP per capita), and renewable energy consumption (as a % of total energy use).

adjustment of adaptation measures. Similarly, **FDI** shows persistent negative associations with GDP growth and positive links with renewable energy and unemployment, consistent with investments targeting capital-intensive sectors or generating value for the investor's home country. **IPE** shows no significant medium-term effects, suggesting that initial impacts either dissipate or take longer to materialize. Overall, the t+5 patterns reinforce the short to medium-term trends observed at $t + 3$.

In the **long-term** $(t + 7)$, **IPE** flows are positively associated with renewable energy consumption, demonstrating the realization of social and environmental objectives. **PE** maintains reductions in emissions and intensity but shows limited impact on adaptation readiness. **FDI** continues to enhance renewable energy and adaptation readiness while maintaining a negative association with GDP, reflecting long-term environmental benefits alongside possible repatriation of economic value. Overall, these results show that PE consistently improves operational efficiency and environmental outcomes, IPE targets vulnerable economies for long-term impact, and FDI supports sustainability goals but may not always translate into host-country growth.

6. Conclusion

This study examines two main questions: what are the determinants of private equity, impact investing, and foreign direct investment (FDI) across countries and income groups and how do these investment flows associate with various economic, social, and environmental indicators of the portfolio countries? To answer these questions, I construct a comprehensive sample of impact private equity funds, significantly larger than the impact funds samples in the current literature, which includes 3,413 unique funds covering 7,179 impact deals. I further combine this sample with private equity deals, macro economic variables, climate adaptation indexes, and other social and environmental measures in country-level.

The empirical results reveal a clear economic narrative across investment types. Traditional private equity is primarily attracted to countries with stronger institutions and growth prospects and is associated with short to medium-term efficiency gains, including reductions in unemployment and carbon emissions intensity, consistent with operational restructuring and productivity improvements. Impact private equity, by contrast, systematically targets less financially developed and more climate-vulnerable economies, reflecting its dual mandate, and delivers longer term social and environmental benefits, particularly through increased renewable energy adoption. Foreign direct investment shares some environmental benefits, especially in renewable energy and adaptation readiness, but its economic gains for host countries appear weaker over time, consistent with capital and profit repatriation dynamics. Taken together, the findings suggest that different forms

of private capital play complementary roles: PE improves efficiency, IPE channels capital toward vulnerable economies with delayed but persistent impact, and FDI supports sustainability objectives without necessarily translating into sustained domestic growth.

The impact fund sample constructed in this study comprises three main categories of impact investors: foreign impact investors, defined as impact funds investing in countries other than their country of origin; domestic impact investors, which invest primarily in the same country in which the fund is located; and development finance institutions, which predominantly invest in the Global South and are largely funded by public or government-backed sources. This classification may have important implications for investment focus, the determinants of capital allocation, and the economic, social, and environmental outcomes associated with these investments. I plan to incorporate this investor-level classification in future extensions of the analysis.

Overall, this study contributes to the existing literature by constructing a comprehensive impact fund dataset and examining how impact funds, private equity, and FDI differ in their determinants and effects on host countries. It also sheds light on how investment patterns vary across countries with different income levels. The findings have important implications for investors and policymakers, providing guidance on how to create more attractive environments for private capital while promoting economic, social, and environmental development.

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Table I. Summary Statistics

This tables presents the summary statistics for the variables of this study. The full sample is an unbalanced panel data-set which includes 17,196 observations for the period 1960 to 2025. I do not drop the missing values of the variable. Variable definitions are presented in table I in the appendix. **N** is the number of non-missing values for a variable in the sample.

Variable	N	Mean	SD	Median	p25	p75	Min	Max
FDI	11268	0.0296	0.0584	0.0149	0.0045	0.0344	-0.0760	0.5437
PE	2008	0.0050	0.0109	0.0011	0.0002	0.0046	0.0000	0.0902
TPE	1955	0.0051	0.0113	0.0011	0.0002	0.0046	0.0000	0.0963
IPE	632	0.0003	0.0008	0.0001	0.0000	0.0003	0.0000	0.0085
logGDP	13995	23.808	3.136	23.563	21.553	26.052	14.766	32.343
logGDP PC	14001	7.633	1.700	7.509	6.334	8.909	2.468	12.455
GDP Growth	13599	3.635	4.931	3.812	1.446	6.092	-13.794	20.266
GDP PC growth	13439	0.019	0.060	0.021	-0.002	0.043	-0.644	1.405
logGNI	12474	7.690	1.625	7.601	6.459	8.897	2.303	11.851
Gini Index	2276	0.376	0.088	0.356	0.308	0.429	0.202	0.711
Inflation variation	10701	0.083	0.356	0.001	-0.031	0.062	-0.159	2.894
Exchange rate variation	9785	0.067	0.250	0.000	-0.010	0.080	-0.206	1.786
Agriculture and fishery a.v.	9923	0.025	0.076	0.027	-0.005	0.054	-0.229	0.301
Industry a.v.	9544	0.037	0.077	0.037	0.001	0.073	-0.209	0.307
Services a.v.	9060	0.041	0.051	0.041	0.018	0.065	-0.134	0.224
Trade openness	10683	0.670	0.360	0.581	0.411	0.873	0.000	1.999
Financial openness	8637	0.052	0.161	0.001	0.000	0.024	-0.008	1.962
Domestic credit	11179	0.356	0.329	0.249	0.129	0.479	0.000	3.046
AGI	4824	-0.061	0.905	-0.199	-0.724	0.639	-2.410	1.947
Human capital	1453	0.238	0.157	0.215	0.115	0.334	0.000	0.790
Literacy rate	2719	0.750	0.189	0.781	0.602	0.929	0.054	1.000
Unemployment	7684	0.078	0.056	0.063	0.041	0.101	0.001	0.388
Female to male ratio	7245	0.686	0.195	0.733	0.591	0.824	0.070	1.084
CO2 emissions	7195	4.080	5.044	2.371	0.665	5.989	0.000	47.657
Fossil fuel	6397	0.659	0.287	0.750	0.469	0.885	0.000	1.000
Renewable output	8078	0.318	0.293	0.228	0.067	0.523	0.000	1.000
Renewable consumption	7843	0.325	0.297	0.233	0.067	0.559	0.000	0.983
Vulnerability	5262	0.446	0.094	0.436	0.371	0.521	0.251	0.675
Readiness	5398	0.375	0.144	0.340	0.271	0.450	0.096	0.822
Economic	5196	0.414	0.133	0.403	0.325	0.481	0.110	0.790
Governance	5282	0.408	0.224	0.355	0.234	0.552	0.000	0.991
Social	5225	0.304	0.153	0.259	0.193	0.373	0.079	0.788
Log km distance	2115	8.011	1.401	8.374	7.363	9.001	-1.701	9.842

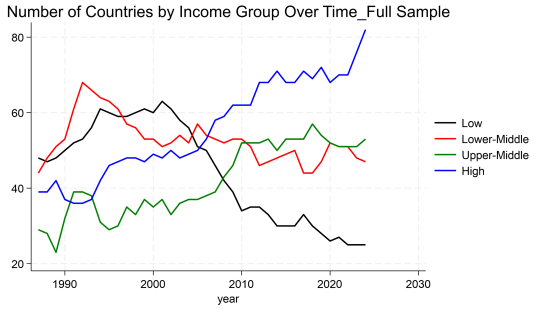
Table II. Correlation Table

This table shows the pairwise correlation between the sample variables and the four main investment variables: Foreign Direct Investment (FDI), Aggregate Private Equity (PE), Traditional Private Equity (TPE), and Impact Private Equity (IPE) in the sample. For detailed definition of variables see table I in the appendix.

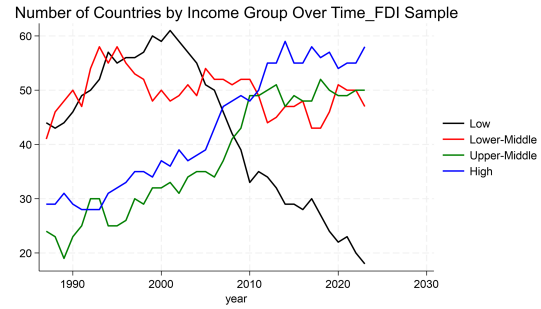
Variables	**(1)**	**(2)**	**(3)**	**(4)**
(1) FDI	1.000			
(2) PE	0.082	1.000		
(3) TPE	0.083	0.999	1.000	
(4) IPE	0.074	0.013	-0.030	1.000
(5) logGDP	-0.092	0.080	0.064	-0.233
(6) logGDP PC	0.170	0.283	0.277	-0.178
(7) GDP Growth	0.069	0.004	0.011	0.082
(8) GDP Growth PC	0.095	0.014	0.018	0.035
(9) logGNI	0.145	0.288	0.282	-0.177
(10) Gini Index	-0.103	-0.130	-0.130	0.017
(11) Inflation variation	-0.080	-0.084	-0.084	0.001
(12) Exchange rate variation	-0.069	-0.053	-0.051	0.008
(13) Agriculture and fishery v.a.	-0.041	-0.019	-0.014	-0.074
(14) Industry v.a.	0.039	-0.025	-0.019	0.075
(15) Services v.a.	0.028	-0.021	-0.012	0.097
(16) Trade openness	0.350	0.104	0.104	0.031
(17) Financial openness	0.148	0.368	0.361	-0.066
(18) Domestic credit	0.176	0.270	0.261	-0.122
(19) AGI	0.149	0.316	0.309	-0.117
(20) Human capital	0.066	0.246	0.244	-0.127
(21) Literacy rate	0.190	0.087	0.086	-0.201
(22) Unemployment	0.051	-0.052	-0.050	-0.033
(23) Female to male ratio	0.099	0.152	0.151	0.031
(24) CO2 emissions	0.026	0.122	0.115	-0.170
(25) Fossil fuel	0.021	0.013	0.008	-0.159
(26) Renewable output	-0.057	-0.036	-0.031	0.064
(27) Renewable consumption	-0.070	-0.111	-0.107	0.157
(28) Vulnerability	-0.072	-0.240	-0.236	0.193
(29) Readiness	0.087	0.320	0.313	-0.161
(30) Economic readiness	0.062	0.232	0.229	-0.176
(31) Governance readiness	0.113	0.301	0.294	-0.122
(32) Social readiness	0.033	0.288	0.281	-0.150

Figure 1. Countries by Income-Group

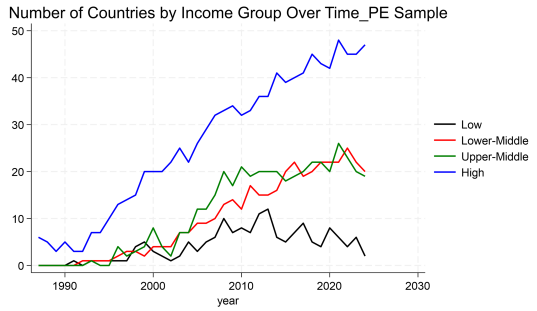
Plot (a) to (d) present the number of countries within each income-group across four different samples. The income group classification variable is obtained form the World Bank which classifies countries based on their annual income and the annual defined category threshold by the World Bank. Plot (a) presents the fulls sample including 17,196 observations with 7,396 non-missing income-group observations. Plot(b) presents the FDI sample with 11,268 observations and 6,481 non-missing income-group values. Plots (c) and (d) represent aggregate private equity (PE) and impact private equity (IPE) samples, respectively, which have 2,008 and 632 observations and 1,957 and 619 non-missing income-group values, respectively.



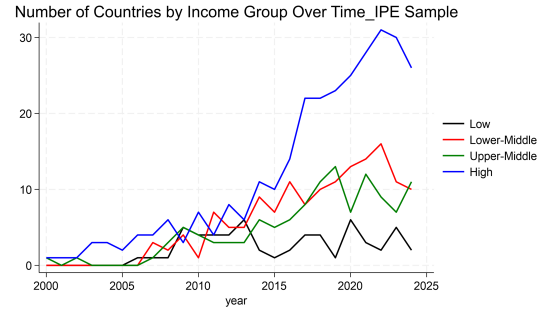
(a) Full Sample (N = 17,196)



(b) FDI Sample (N = 11,268)



(c) PE Sample (N = 2,008)



(d) IPE Sample (N = 632)

Table III. Mean Difference Analysis, GNI Classification

The table compares the sample variables for two groups of countries: low-income (group 1) and high-income (group 2). Group 1 includes countries which have a GNI below the sample median (annual) and group 2 includes the countries with GNI above the sample median. I do this test for the whole sample which is an unbalanced panel with 17,196 observations for the period 1960 to 2025. For detailed variable definitions see table I in appendix.

Variable	Mean diff.	P-value	N. group 1	Mean group 1	N. group 2	Mean group 2
FDI	-0.0104	0.000	5398	0.0248	5284	0.0352
PE	-0.0045	0.000	602	0.0018	1387	0.0062
TPE	-0.0045	0.000	554	0.0017	1382	0.0063
IPE	0.0003	0.000	235	0.0005	396	0.0002
PE investment US$	-11355.020	0.000	602	1090.453	1387	12445.470
TPE investment US$	-11240.750	0.000	554	1120.987	1382	12361.740
IPE investment US$	-298.621	0.035	235	150.749	396	449.370
logGDP	-1.392	0.000	6208	23.301	6266	24.693
logGDP PC	-2.303	0.000	6208	6.548	6266	8.851
GDP growth	0.539	0.000	6208	3.963	6266	3.424
GDP growth PC	-0.004	0.000	6204	0.018	6117	0.022
logGNI	-2.300	0.000	6208	6.534	6266	8.835
Gini index	0.023	0.000	790	0.391	1460	0.368
Inflation var.	0.073	0.000	4869	0.119	5121	0.046
Exchange rate var.	0.061	0.000	4151	0.100	4277	0.040
Agriculture v.a.	0.009	0.000	5160	0.029	4364	0.020
Industry v.a.	0.017	0.000	4986	0.045	4189	0.028
Services v.a.	0.011	0.000	4580	0.046	4147	0.035
Trade openness	-0.142	0.000	5206	0.604	4932	0.746
Financial openness	-0.083	0.000	4193	0.010	4165	0.093
Domestic credit	-0.299	0.000	5509	0.235	4785	0.534
AGI	-1.153	0.000	2294	-0.653	2199	0.499
Human capital	-0.130	0.000	498	0.157	883	0.287
Literacy rate	-0.203	0.000	1552	0.677	994	0.880
Unemployment	-0.015	0.000	3793	0.070	3486	0.086
Female to male ratio	0.002	0.744	3548	0.690	3212	0.689
CO2 emissions	-5.804	0.000	3386	1.280	3284	7.085
Fossil fuel	-0.260	0.000	2921	0.521	3182	0.781
Renewable output	0.117	0.000	3623	0.375	3684	0.258
Renewable consumption	0.352	0.000	3617	0.511	3639	0.159
Vulnerability	0.119	0.000	2638	0.503	2512	0.385
Readiness	-0.175	0.000	2638	0.288	2561	0.464
Economic readiness	-0.125	0.000	2610	0.353	2473	0.478
Governance readiness	-0.269	0.000	2574	0.275	2533	0.543
Social readiness	-0.139	0.000	2541	0.233	2485	0.372

Table IV. Correlation Matrix

The table presents pair-wise correlations between the variables used in the country characteristics regressions, equations (14), (15), and (16). Three additional variables in this table are AGI residual, Vulnerability residual, and Readiness residual, estimated in equations (11), (12), and (13), respectively.

Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**	**(12)**	**(13)**	**(14)**	**(15)**	**(16)**	**(17)**	**(18)**
(1) logGDP	1.00																	
(2) GDP Growth	-0.01	1.00																
(3) logGNI	0.42	-0.12	1.00															
(4) Inflation variation	0.01	-0.19	-0.15	1.00														
(5) Exchange rate variation	-0.01	-0.13	-0.16	0.57	1.00													
(6) Industry v.a.	-0.05	0.71	-0.18	-0.14	-0.10	1.00												
(7) Trade openness	-0.25	0.01	0.35	-0.08	-0.09	-0.04	1.00											
(8) Financial openness	0.33	-0.06	0.43	-0.09	-0.08	-0.06	0.14	1.00										
(9) Domestic credit	0.49	-0.08	0.66	-0.15	-0.14	-0.10	0.22	0.53	1.00									
(10) AGI	0.24	-0.14	0.79	-0.24	-0.20	-0.12	0.30	0.49	0.69	1.00								
(11) Residual AGI	-0.02	0.05	0.00	-0.07	-0.06	0.04	-0.02	-0.01	0.00	0.21	1.00							
(12) Human capital	0.39	-0.12	0.61	-0.06	-0.03	-0.11	0.21	0.29	0.42	0.44	-0.01	1.00						
(13) CO_2 Emissions	0.31	-0.06	0.67	-0.04	-0.09	-0.08	0.18	0.21	0.39	0.45	0.02	0.38	1.00					
(14) Vulnerability	-0.61	0.09	-0.75	0.06	0.05	0.12	-0.22	-0.37	-0.59	-0.61	-0.01	-0.61	-0.55	1.00				
(15) Residual vulnerability	-0.01	0.05	0.00	-0.04	-0.01	0.05	0.01	0.01	-0.02	-0.01	0.00	0.03	-0.04	0.11	1.00			
(16) Readiness	0.37	-0.13	0.78	-0.18	-0.14	-0.11	0.22	0.53	0.73	0.86	0.10	0.59	0.47	-0.64	-0.03	1.00		
(17) Residual readiness	-0.01	-0.04	0.00	0.04	0.04	-0.04	0.09	0.08	0.10	0.18	0.32	0.32	-0.04	-0.02	-0.09	0.29	1.00	
(18) Crisis	0.07	-0.14	0.10	-0.03	0.00	-0.11	0.06	0.04	0.10	0.00	-0.03	0.05	0.00	-0.02	-0.03	0.02	0.01	1.00

Table V. Base-Line Model Country Characteristics Regression Results

The table presents panel data regression results for three main investment category ratios: impact private equity (IPE), equation (3), private equity ratio (PE), equation (1), and foreign direct investment (FDI) as a ratio of country nominal GDP. The results present the base-line model which includes the main characteristics as regressor. L. specifies that the lagged, last year's, value is used in the regression. For log distance (distance between the city of investor and portfolio company) and crisis I use the contemporaneous values. The panel model type varies in different regressions because of different Hausman's test results, for IPE and FDI I use fixed effect (FE) and for PE I use random effect (RE) regressions. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All tests are two-tailed.

Variables	**IPE**	**PE**	**FDI**
L.FDI	0.001*	0.012	
	(1.909)	(1.255)	
L.PE	0.001		
	(0.305)		
L.logGDP	0.0002	0.0002	0.003
	(0.565)	(0.082)	(0.318)
L.GDP growth	-0.0000	0.0000	0.001**
	(-0.735)	(0.355)	(2.229)
L.logGNI	0.0002	0.001	-0.015
	(0.375)	(0.178)	(-1.267)
L.Industry v.a.	0.001	-0.003	0.009
	(0.984)	(-0.336)	(0.536)
L.Trade openness	-0.0002	-0.001	0.021*
	(-0.566)	(-0.298)	(1.742)
L.Financial openness	0.001***	0.018***	0.002
	(3.534)	(2.820)	(0.040)
L.Domestic credit	-0.0002	0.004**	0.047**
	(-1.088)	(2.171)	(2.242)
L.AGI residual	-0.0003	0.002	0.009
	(-1.244)	(1.051)	(1.225)
L.Vulnerability residual	-0.008*	-0.071	0.013
	(-1.708)	(-1.571)	(0.084)
L.Readiness residual	0.001	0.014	-0.144***
	(0.819)	(1.625)	(-3.718)
Log distance	0.0000***	0.001***	
	(2.857)	(3.300)	
Crisis	-0.0002	-0.002***	0.003
	(-1.453)	(-2.919)	(0.817)
Constant	-0.008	-0.017	0.051
	(-1.427)	(-0.455)	(0.343)
Observations	502	1,529	3,315
R-squared	0.078	0.069	0.031
Number of countries	78	128	161

Table VI. Uni-variate Regressions Results

This table presents results for the uni-variate regressions of different social, economic, and climate measures on FDI, PE, or IPE investment ratios. In these regressions, GDP represents GDP growth per capita, vulnerability and Readiness are climate change vulnerability and readiness, CO2 is CO2 emissions (tons per capita), and CO2ins is CO2 intensity (CO2 tons over GDP per capita), Renewable is the renewable energy consumption as a ratio of total energy consumed. All differences are between year $t+3$ and $t-1$ for each country in the sample while t is the time of investment. N stands for the number of observations and countries is the number of unique countries. All regressions use fixed effects and standard errors are clustered in country-level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All tests are two-tailed.

Panel A: Impact Private Equity

Variables	$\Delta GDP_{t-1,t+3}$	$\Delta Vulnerability_{t-1,t+3}$	$\Delta Readiness_{t-1,t+3}$	$\Delta Unemployement_{t-1,t+3}$	$\Delta CO2_{t-1,t+3}$	$\Delta CO2ints._{t-1,t+3}$	$\Delta Renewable_{t-1,t+3}$
IPE	3.843	0.776	-2.266	-0.319	-49.090	-0.019	19.930*
	(0.854)	(0.793)	(-0.543)	(-0.157)	(-1.109)	(-1.551)	(1.749)
Constant	0.002*	-0.004***	0.0003	-0.001**	-0.251***	-0.0000***	-0.004
	(1.930)	(-21.96)	(0.297)	(-2.456)	(-23.15)	(-13.84)	(-1.457)
N	461	406	406	465	259	259	307
Countries	92	86	86	92	73	73	82

Panel B: Aggregate Private Equity

Variables	$\Delta GDP_{t-1,t+3}$	$\Delta Vulnerability_{t-1,t+3}$	$\Delta Readiness_{t-1,t+3}$	$\Delta Unemployement_{t-1,t+3}$	$\Delta CO2_{t-1,t+3}$	$\Delta CO2ints._{t-1,t+3}$	$\Delta Renewable_{t-1,t+3}$
PE	0.088	0.006	-0.400***	-0.032	-10.510***	0.0003	0.227**
	(0.529)	(0.232)	(-4.787)	(-0.472)	(-3.204)	(0.422)	(2.139)
Constant	-0.0008	-0.004***	0.012***	-0.003***	-0.114***	-0.0001***	0.002***
	(-0.932)	(-29.99)	(30.52)	(-9.547)	(-7.634)	(-28.23)	(3.729)
N	1,692	1,504	1,510	1,641	1,274	1,274	1,389
Countries	147	138	141	142	126	126	138

Panel C: Foreign Direct Investment

Variables	$\Delta GDP_{t-1,t+3}$	$\Delta Vulnerability_{t-1,t+3}$	$\Delta Readiness_{t-1,t+3}$	$\Delta Unemployement_{t-1,t+3}$	$\Delta CO2_{t-1,t+3}$	$\Delta CO2ints._{t-1,t+3}$	$\Delta Renewable_{t-1,t+3}$
FDI	-0.038	-0.006**	0.014	-0.006	0.183	0.001	-0.013
	(-1.482)	(-1.990)	(0.889)	(-0.798)	(0.373)	(0.910)	(-0.462)
Constant	0.002**	-0.004***	0.006***	-0.001***	0.019	-0.0003***	-0.006***
	(2.245)	(-26.40)	(8.289)	(-3.407)	(0.957)	(-4.885)	(-6.030)
N	10,273	4,316	4,358	6,416	5,715	5,700	6,223
Countries	235	181	183	223	223	223	237

Table VII. Uni-variate Regressions with Crisis Dummy Results

This table presents the results for table VII regressions with an added crisis dummy variable. The crisis dummy is 1 for year 2008 and year 2020, the global financial crisis and Covid-19 outbreak and 0 for the remaining years. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All tests are two-tailed. Numbers of observations and number of countries is the same as the uni-variate without crisis specification.

Panel A: Impact Private Equity

Variables	$\Delta GDP_{t-1,t+3}$	$\Delta Vulnerability_{t-1,t+3}$	$\Delta Readiness_{t-1,t+3}$	$\Delta Unemployement_{t-1,t+3}$	$\Delta CO2_{t-1,t+3}$	$\Delta CO2ints._{t-1,t+3}$	$\Delta Renewable_{t-1,t+3}$
IPE	3.622	0.608	-2.731	-0.301	-52.160	-0.019	19.390*
	(0.817)	(0.669)	(-0.649)	(-0.148)	(-1.146)	(-1.590)	(1.698)
crisis	-0.013***	0.004***	0.010**	0.001	-0.138	-0.000	-0.025*
	(-3.089)	(3.012)	(2.385)	(0.472)	(-0.736)	(-0.143)	(-1.781)
Constant	0.004***	-0.005***	-0.001	-0.001**	-0.244***	-0.000***	-0.003
	(3.120)	(-17.400)	(-1.143)	(-2.164)	(-14.790)	(-11.880)	(-1.030)

Panel B: Aggregate Private Equity

Variables	$\Delta GDP_{t-1,t+3}$	$\Delta Vulnerability_{t-1,t+3}$	$\Delta Readiness_{t-1,t+3}$	$\Delta Unemployement_{t-1,t+3}$	$\Delta CO2_{t-1,t+3}$	$\Delta CO2ints._{t-1,t+3}$	$\Delta Renewable_{t-1,t+3}$
PE	0.006	-0.400***	-0.032	-10.550***	0.091	0.000	0.227**
	(0.227)	(-4.827)	(-0.483)	(-3.202)	(0.546)	(0.411)	(2.138)
crisis	0.002***	-0.003	0.009***	-0.135	-0.012***	-0.000*	-0.000
	(3.951)	(-1.287)	(3.999)	(-1.544)	(-3.953)	(-1.798)	(-0.055)
Constant	-0.004***	0.013***	-0.004***	-0.106***	0.000	-0.000***	0.002***
	(-26.120)	(26.680)	(-9.719)	(-6.077)	(0.442)	(-26.000)	(3.489)

Panel C: Foreign Direct Investment

Variables	$\Delta GDP_{t-1,t+3}$	$\Delta Vulnerability_{t-1,t+3}$	$\Delta Readiness_{t-1,t+3}$	$\Delta Unemployement_{t-1,t+3}$	$\Delta CO2_{t-1,t+3}$	$\Delta CO2ints._{t-1,t+3}$	$\Delta Renewable_{t-1,t+3}$
FDI	-0.037	-0.007**	0.014	-0.007	0.228	0.001	-0.013
	(-1.409)	(-2.050)	(0.887)	(-0.870)	(0.465)	(0.898)	(-0.486)
crisis	-0.007**	0.002***	0.000	0.003***	-0.131***	0.000	0.002
	(-1.983)	(3.559)	(0.315)	(3.331)	(-3.166)	(0.902)	(0.966)
Constant	0.002**	-0.004***	0.006***	-0.001***	0.022	-0.000***	-0.007***
	(2.591)	(-26.070)	(8.072)	(-3.879)	(1.127)	(-4.897)	(-6.192)

Table VIII. Multi-variate Regressions Results, IPE

This table presents results for the multi-variate regressions of different social, economic, and climate measures on IPE. In the table $\Delta GDP_{t-1,t+3}$ is the difference between the GDP growth per capita, $\Delta Vulnerability_{t-1,t+3}$ is the difference in climate change vulnerability, $\Delta Readiness_{t-1,t+3}$ is the difference in climate change readiness, $\Delta Unemployement_{t-1,t+3}$ is the difference in unemployment, $\Delta CO2_{t-1,t+3}$ is the difference in CO2 emissions per capita, $\Delta CO2ints._{t-1,t+3}$ is the difference in CO2 intensity (CO2 tons over GDP per capita), and $\Delta Renewable_{t-1,t+3}$ is the difference in renewable energy consumption as a ratio of total energy consumed. All differences are between time $t+3$ and time $t-1$ for each country in the sample while t is the time of investment. All regressions use a fixed effects model and standard errors are clustered in country-level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All tests are two-tailed.

Variables	$\Delta GDP_{t-1,t+3}$	$\Delta Vulnerability_{t-1,t+3}$	$\Delta Readiness_{t-1,t+3}$	$\Delta Unemployement_{t-1,t+3}$	$\Delta CO2emission_{t-1,t+3}$	$\Delta CO2intsity_{t-1,t+3}$	$\Delta Renewable_{t-1,t+3}$
IPE	3.170	0.083	0.493	-0.225	-56.180	-0.035**	18.760
	(-0.932)	(-0.100)	(-0.186)	(-0.157)	(-0.744)	(-2.371)	(-1.478)
Log GDP	0.010	-0.005	-0.010	0.018	-0.858**	-0.000	0.065**
	(-0.294)	(-0.626)	(-0.260)	(-1.135)	(-2.325)	(-0.833)	(-2.238)
Log GNI	0.017	0.014	0.010	-0.027	0.416	0.001***	-0.032
	(-0.431)	(-1.375)	(-0.206)	(-1.193)	(-0.958)	(-4.221)	(-1.115)
Inflation var.	0.050			-0.007			
	(-0.785)			(-0.344)			
Exchange rate var.	0.066***						
	(-2.962)						
Industry v.a.	0.171***			-0.025	0.774	0.000*	0.037
	(-2.929)			(-0.671)	(-0.416)	(-1.869)	(-0.517)
Trade openness	0.011	0.002	-0.129*	-0.049**	-0.938	0.000	0.039
	(-0.284)	(-0.218)	(-1.863)	(-2.281)	(-1.396)	(-0.609)	(-1.388)
Financial openness	-0.017	0.002	0.009				
	(-1.067)	(-0.329)	(-0.224)				
Residual AGI	-0.066*	-0.005	0.063	0.003			
	(-1.944)	(-0.900)	(-1.273)	(-0.210)			
crisis	-0.003	0.003**	0.018**	-0.009*	-0.068	-0.000	-0.012***
	(-0.478)	(-2.046)	(-2.316)	(-1.942)	(-0.444)	(-0.515)	(-2.731)
GDP Growth		0.000	0.002	-0.001	0.039*	-0.000	-0.003*
		(-0.015)	(-1.617)	(-1.037)	(-1.859)	(-0.766)	(-1.857)
Domestic credit		-0.003	0.012	0.034			
		(-0.531)	(-0.392)	(-0.927)			
Renewable cons.					-1.884	0.001**	
					(-0.874)	(-2.353)	
Constant	-0.420	-0.004	0.246	-0.229	19.980***	-0.003*	-1.450**
	(-0.788)	(-0.032)	(-0.362)	(-0.845)	(-2.673)	(-1.746)	(-2.612)
Observations	414	364	364	396	225	225	270
R-squared	0.133	0.109	0.075	0.101	0.097	0.580	0.258
Number of countries	85	79	79	83	67	67	77

Table IX. Multi-variate Regressions Results, PE

This table presents results for the multi-variate regressions of different social, economic, and climate measures on PE. In the table $\Delta GDP_{t-1,t+3}$ is the difference between the GDP growth per capita, $\Delta Vulnerability_{t-1,t+3}$ is the difference in climate change vulnerability, $\Delta Readiness_{t-1,t+3}$ is the difference in climate change readiness, $\Delta Unemployement_{t-1,t+3}$ is the difference in unemployment, $\Delta CO2_{t-1,t+3}$ is the difference in CO2 emissions per capita, $\Delta CO2ints._{t-1,t+3}$ is the difference in CO2 intensity (CO2 tons over GDP per capita), and $\Delta Renewable_{t-1,t+3}$ is the difference in renewable energy consumption as a ratio of total energy consumed. All differences are between time $t+3$ and time $t-1$ for each country in the sample while t is the time of investment. All regressions use a fixed effects model and standard errors are clustered in country-level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All tests are two-tailed.

Variables	$\Delta GDP_{t-1,t+3}$	$\Delta Vulnerability_{t-1,t+3}$	$\Delta Readiness_{t-1,t+3}$	$\Delta Unemployement_{t-1,t+3}$	$\Delta CO2emission_{t-1,t+3}$	$\Delta CO2intsity_{t-1,t+3}$	$\Delta Renewable_{t-1,t+3}$
PE	-0.049	0.017	-0.257***	-0.125*	-6.189**	-0.001*	0.168
	(-0.381)	(0.554)	(-3.140)	(-1.690)	(-2.403)	(-1.975)	(1.635)
Log GDP	0.005	-0.006**	-0.006	0.010	-0.324	-0.001***	0.020**
	(0.262)	(-2.090)	(-0.462)	(1.404)	(-0.534)	(-3.372)	(2.365)
Log GNI	-0.006	0.006*	-0.008	-0.005	-0.256	0.001***	-0.013
	(-0.308)	(1.892)	(-0.518)	(0.618)	(-0.376)	(-4.753)	(-1.240)
Inflation var.	-0.009			0.013*			
	(-0.469)			(1.817)			
Exchange rate var.	0.048***						
	(4.801)						
Industry v.a.	-0.018			-0.097***	1.074	0.000	-0.044
	(-0.520)			(-3.328)	(1.201)	(0.716)	(-1.477)
Trade openness	0.011	0.000	-0.032**	-0.047***	1.045**	-0.000*	0.004
	(0.953)	(0.084)	(-2.028)	(-4.353)	(2.061)	(-1.675)	(0.374)
Financial openness	-0.035***	-0.002	-0.018				
	(-3.199)	(-0.718)	(-1.249)				
Residual AGI	-0.049***	-0.008***	-0.007	0.016*			
	(-3.494)	(-3.101)	(-0.500)	(1.687)			
crisis	-0.015***	0.002***	0.002	0.003	-0.130	-0.000	-0.000
	(-4.011)	(3.083)	(0.510)	(1.212)	(-1.193)	(-0.807)	(0.147)
GDP growth		0.000	0.001**	0.000	-0.000	-0.000**	-0.000
		(0.920)	(2.153)	(0.408)	(-0.0129)	(-2.202)	(-0.703)
Domestic credit		-0.001	0.000	0.028***			
		(-0.925)	(0.016)	(2.712)			
Renewable cons.					-2.952***	0.000	
					(-3.069)	(0.718)	
Constant	-0.064	0.086*	0.279	-0.202	10.560	0.005**	-0.405***
	(-0.233)	(1.932)	(1.188)	(-1.649)	(1.066)	(2.218)	(-3.035)
Observations	1,434	1,309	1,309	1,368	1,189	1,189	1,287
R-squared	0.046	0.038	0.045	0.153	0.124	0.268	0.047
Number of countries	131	127	127	129	114	114	121

Table X. Multi-variate Regressions Results, FDI

This table presents results for the multi-variate regressions of different social, economic, and climate measures on FDI. In the table $\Delta GDP_{t-1,t+3}$ is the difference between the GDP growth per capita, $\Delta Vulnerability_{t-1,t+3}$ is the difference in climate change vulnerability, $\Delta Readiness_{t-1,t+3}$ is the difference in climate change readiness, $\Delta Unemployement_{t-1,t+3}$ is the difference in unemployment, $\Delta CO2_{t-1,t+3}$ is the difference in CO2 emissions per capita, $\Delta CO2ints._{t-1,t+3}$ is the difference in CO2 intensity (CO2 tons over GDP per capita), and $\Delta Renewable_{t-1,t+3}$ is the difference in renewable energy consumption as a ratio of total energy consumed. All differences are between time $t+3$ and time $t-1$ for each country in the sample while t is the time of investment. All regressions use a fixed effects model and standard errors are clustered in country-level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All tests are two-tailed.

Variables	$\Delta GDP_{t-1,t+3}$	$\Delta Vulnerability_{t-1,t+3}$	$\Delta Readiness_{t-1,t+3}$	$\Delta Unemployement_{t-1,t+3}$	$\Delta CO2emission_{t-1,t+3}$	$\Delta CO2intsity_{t-1,t+3}$	$\Delta Renewable_{t-1,t+3}$
FDI	-0.079*	-0.005	0.010	0.021**	-0.352	0.001	0.029**
	(-1.911)	(-1.630)	(0.556)	(1.987)	(-1.090)	(0.232)	(1.999)
Log GDP	0.009	-0.002	-0.005	0.003	-0.145	-0.003*	-0.010
	(0.636)	(-1.357)	(-0.557)	(0.576)	(-1.003)	(-1.968)	(-1.517)
Log GNI	-0.022	0.001	0.011	-0.001	0.034	0.005**	0.019**
	(-1.440)	(0.740)	(1.124)	(-0.169)	(0.184)	(1.995)	(2.383)
Inflation var.	-0.016			0.007**			
	(-0.988)			(1.998)			
Exchange rate var.	0.037***						
	(4.226)						
Industry v.a.	-0.029			-0.032***	0.489**	0.003	-0.044***
	(-0.914)			(-3.454)	(-2.455)	(1.069)	(-2.706)
Trade openness	-0.004	-0.001	-0.012	-0.028***	-0.070	0.000	-0.011
	(-0.384)	(-0.503)	(-1.353)	(-4.233)	(-0.446)	(0.211)	(-1.378)
Financial openness	-0.013	-0.000	-0.030**				
	(-1.385)	(-0.205)	(-1.984)				
Residual AGI	-0.022*	-0.003*	-0.008	-0.003			
	(-1.668)	(-1.761)	(-1.097)	(-0.531)			
crisis	-0.006	0.002***	-0.000	0.002	-0.026	-0.000	0.000
	(-1.390)	(3.037)	(-0.253)	(1.151)	(-0.728)	(-0.811)	(0.173)
GDP growth		-0.000**	0.000**	-0.000	0.032***	-0.000	-0.001**
		(2.091)	(2.228)	(-0.831)	(4.259)	(-0.514)	(2.025)
Domestic credit		0.001	-0.011	0.015**			
		(0.902)	(-1.416)	(2.255)			
Renewable cons.					-1.106***	0.004	
					(-3.319)	(1.645)	
Constant	-0.026	0.039	0.043	-0.041	3.643	0.037*	0.098
	(0.119)	(1.539)	(0.340)	(0.651)	(1.602)	(1.874)	(0.950)
Observations	3,301	3,088	3,088	3,104	4,479	4,472	4,829
R-squared	0.021	0.017	0.015	0.062	0.053	0.085	0.043
Number of countries	169	163	163	161	200	200	207

Appendix

Table XI. Variable Definition

Variable	Definition	Unit of measurement	Category
Foreign direct investment (FDI), net inflows	The net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP. (World Bank, IMF)	Percentage	Economic
Private equity ratio (PE)	The USD value of new private equity investment, both domestic and foreign, divided by nominal GDP in USD.	ratio	Economic
Traditional private equity ratio (TPE)	The USD value of new traditional private equity investment, both domestic and foreign, divided by nominal GDP in USD.	ratio	Economic
Impact private equity ratio (IPE)	The USD value of new impact private equity investment, both domestic and foreign, divided by nominal GDP in USD.	ratio	Economic
GDP Current US$	Gross domestic product is the total income earned through the production of goods and services in an economic territory during an accounting period. It can be measured in three different ways: using either the expenditure approach, the income approach, or the production approach. This indicator is expressed in current prices, meaning no adjustment has been made to account for price changes over time. This indicator is expressed in United States dollars.	Current US$	Economic
GDP per capita (current US$)	Gross domestic product is the total income earned through the production of goods and services in an economic territory during an accounting period. It can be measured in three different ways: using either the expenditure approach, the income approach, or the production approach. The core indicator has been divided by the general population to achieve a per capita estimate.This indicator is expressed in current prices, meaning no adjustment has been made to account for price changes over time. This indicator is expressed in United States dollars.	Current US$	Economic
GDP growth	The sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. (World Bank)	No units, ratio	Economic
GNI per capita	The gross national income, converted to U.S. dollars using the World Bank Atlas method, divided by the midyear population. (World Bank)	Current US$	Economic
Gini index	Measures the extent to which the distribution of income or consumption among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality. (World Bank)	Percentage	Economic

Inflation Variation	Compares a country's inflation to the sample median, annual measure. The inflation is calculated using the GDP deflator from the World Bank.	Ratio	Economic
Exchange Rate Variation	Compares a country's exchange rate depreciation or appreciation with the sample median, annual measure. The exchange rate data is the end of year exchange rate from the IMF.	Ratio	Economic
Agriculture, value added (annual % growth)	Agriculture corresponds to ISIC divisions 01-03 and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. (World Bank)	Percentage	Economic
Industry, value added (annual % growth)	Industry corresponds to ISIC divisions 05-43 and includes manufacturing (ISIC divisions 10-33). It comprises value added in mining, manufacturing (also reported as a separate subgroup), construction, electricity, water, and gas. (World Bank)	Percentage	Economic
Services, value added (annual % growth)	Services correspond to ISIC divisions 45-99. They include value added in wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services. Also included are imputed bank service charges, import duties, and any statistical discrepancies noted by national compilers as well as discrepancies arising from re-scaling. (World Bank)	Percentage	Economic
Food production index	Covers food crops that are considered edible and that contain nutrients. Coffee and tea are excluded because, although edible, they have no nutritive value. (World Bank, Food and Agriculture Organization)	Index	Economic
Trade Openness	Is equal to imports plus exports, over current GDP in USD.	Ratio	Economic
Financial Openness	Financial openness is portfolio equity liabilities divided by country's GDP (current US$).	Ratio	Economic
Domestic credit to private sector by banks(% of GDP)	Domestic credit to private sector by banks refers to financial resources provided to the private sector by other depository corporations (deposit taking corporations except central banks), such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment. For some countries these claims include credit to public enterprises. This indicator is expressed as a percentage of Gross Domestic Product (GDP) which is the total income earned through the production of goods and services in an economic territory during an accounting period.	Percentage	Economic
Aggregate Governance Indicator (AGI)	AGI is the average of the government effectiveness, rule of law, control of corruption, political stability, regulatory quality, voice and accountability.	Units of a standard normal distribution (between -2.5 and 2.5, approximately)	Governance

Government effectiveness: estimate	It captures perceptions and views 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. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.	Units of a standard normal distribution (between -2.5 and 2.5, approximately)	Governance
Rule of law: estimate	It captures 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. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.	Units of a standard normal distribution (between -2.5 and 2.5, approximately)	Governance
Control of corruption: estimate	It captures 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. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.	Units of a standard normal distribution (between -2.5 and 2.5, approximately)	Governance
Political stability and absence of violence/terrorism: estimate	It measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.	Units of a standard normal distribution (between -2.5 and 2.5, approximately)	Governance
Regulatory quality: estimate	It captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.	Units of a standard normal distribution (between -2.5 and 2.5, approximately)	Governance
Voice and accountability: estimate	It captures 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. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from approximately -2.5 to 2.5.	Units of a standard normal distribution (between -2.5 and 2.5, approximately)	Governance
Educational attainment, at least completed post-secondary, population 25+, total	The percentage of population ages 25 and over that attained or completed post-secondary non-tertiary education.	Percentage	Social
Literacy rate, adult total	The percentage of people ages 15 and above who can both read and write with understanding a short simple statement about their everyday life. (World Bank, UIS).	Percentage	Social
Unemployment, total	The % share of the labor force that is without work but available for and seeking employment. (World Bank, ILO) .	Percentage	Social

Female to male labor force participation rate	Is calculated by dividing female labor force participation rate by male labor force participation rate and multiplying by 100. (World Bank).	Percentage	Social
CO2 emissions	Stemming emissions from the burning of fossil fuels and the manufacture of cement. They include carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring. (World Bank, Climate Watch Historical GHG Emissions).	CO2 per capita	Environmental
Fossil fuel energy consumption (% total)	Fossil fuel comprises coal, oil, petroleum, and natural gas products. (World Bank, IEA).	Percentage	Environmental
Renewable electricity output	The share of electricity generated by renewable power plants in total electricity generated by all types of plants. (World Bank).	Percentage	Environmental
Renewable energy consumption	The share of renewable energy in total final energy consumption. (World Bank).	Percentage	Environmental
Climate change vulnerability	Measures a country's exposure, sensitivity and capacity to adapt to the negative effects of climate change. ND-GAIN measures overall vulnerability by considering six life-supporting sectors – food, water, health, ecosystem service, human habitat, and infrastructure.	Index between 0 and 1	Environmental
Climate change readiness	Measures a country's ability to leverage investments and convert them to adaptation actions. ND-GAIN measures overall readiness by considering three components – economic readiness, governance readiness and social readiness.	Index between 0 and 1	Environmental
Climate adaptation, economic readiness	Captures the ability of a country's business environment to accept investment that could be applied to adaptation that reduces vulnerability (reduces sensitivity and improves adaptive capacity).	Index between 0 and 1	Environmental
Climate adaptation, social readiness	Captures the factors such as social inequality, ICT infrastructure, education and innovation that enhance the mobility of investment and promote adaptation actions.	Index between 0 and 1	Environmental
Climate adaptation, governance readiness	Captures the institutional factors that enhance application of investment for adaptation.	Index between 0 and 1	Environmental

Table XII. Robustness Tests, Summary Statistics Before Winsorizing

This tables presents the summary statistics for the variables of this study. The full sample is an unbalanced panel data-set which includes 17,196 observations for the period 1960 to 2025. I do not drop the missing values of the variable. Variable definitions are presented in table I in the appendix. **N** is the number of non-missing values for a variable in the sample. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All tests are two-tailed.

Variable	N	Mean	SD	Median	p25	p75	Min	Max
FDI	11268	0.040	0.278	0.015	0.004	0.034	-0.401	12.826
PE	2008	0.006	0.023	0.001	0.0002	0.005	0.000	0.823
TPE	1955	0.006	0.023	0.001	0.0002	0.005	0.000	0.823
IPE	632	0.0003	0.0010	0.0001	0.00002	0.0003	0.0000	0.0086
logGDP	13995	23.808	3.136	23.563	21.553	26.052	14.766	32.343
logGDP PC	14001	7.633	1.700	7.509	6.334	8.909	2.468	12.455
GDP Growth	13599	3.678	6.245	3.812	1.446	6.092	-64.047	149.973
logGNI	12474	7.690	1.625	7.601	6.459	8.897	2.303	11.851
Gini Index	2276	0.376	0.088	0.356	0.308	0.429	0.202	0.711
Inflation var.	10675	0.249	3.977	0.000	-0.032	0.061	-1.040	267.606
Exchange rate var.	9765	0.741	55.099	0.000	-0.010	0.079	-1.000	5434.484
Agriculture a.v.	9923	0.026	0.105	0.027	-0.005	0.054	-0.660	5.474
Industry a.v.	9544	0.038	0.099	0.037	0.001	0.073	-0.803	1.961
Services a.v.	9060	0.042	0.069	0.041	0.018	0.065	-1.000	1.818
Trade openness	10683	0.670	0.360	0.581	0.411	0.873	0.000	1.999
Financial openness	8637	0.052	0.161	0.001	0.000	0.024	-0.008	1.962
Domestic credit	11179	0.356	0.329	0.249	0.129	0.479	0.000	3.046
AGI	4824	-0.061	0.905	-0.199	-0.724	0.639	-2.410	1.947
Human capital	1453	0.238	0.157	0.215	0.115	0.334	0.000	0.790
Literacy rate	2719	0.750	0.189	0.781	0.602	0.929	0.054	1.000
Unemployment	7684	0.078	0.056	0.063	0.041	0.101	0.001	0.388
Female to male ratio	7245	0.686	0.195	0.733	0.591	0.824	0.070	1.084
CO2 emissions	7195	4.080	5.044	2.371	0.665	5.989	0.000	47.657
Fossil fuel	6397	0.659	0.287	0.750	0.469	0.885	0.000	1.000
Renewable output	8078	0.318	0.293	0.228	0.067	0.523	0.000	1.000
Renewable cons.	7843	0.325	0.297	0.233	0.067	0.559	0.000	0.983
Vulnerability	5262	0.446	0.094	0.436	0.371	0.521	0.251	0.675
Readiness	5398	0.375	0.144	0.340	0.271	0.450	0.096	0.822
Economic	5196	0.414	0.135	0.403	0.325	0.481	0.000	0.881
Governance	5282	0.408	0.224	0.355	0.234	0.552	0.000	0.991
Social	5225	0.304	0.153	0.259	0.193	0.373	0.079	0.788
Log km distance	2115	8.011	1.401	8.374	7.363	9.001	-1.701	9.842

Table XIII. Robustness Tests, Mean Difference Analysis, WB Classification

The table compares the sample variables for two groups of countries: low-income (group 1) and high-income (group 2). Group 1 includes countries which are classified as low-income or lower-middle-income by the World Bank (annual) and group 2 includes the countries with upper-middle-income or high-income classification. I do this test for the whole sample which is an unbalanced panel with 17,196 observations for the period 1960 to 2025. For detailed variable definitions see table I in appendix.

Variable	Mean diff.	P-value	N. group 1	Mean group 1	N. group 2	Mean group 2
FDI	-0.0140	0.000	3427	0.0318	3054	0.0458
PE	-0.0044	0.000	543	0.0019	1414	0.0063
TPE	-0.0045	0.000	501	0.0019	1404	0.0063
IPE	0.0004	0.000	205	0.0005	414	0.0002
PE Investment US$	-10588.300	0.000	546	1141.436	1473	11729.740
TPE Investment US$	-10515.220	0.000	503	1171.844	1463	11687.070
IPE investment US$	-264.926	0.072	206	164.011	419	428.937
logGDP	-1.675	0.000	3609	22.778	3408	24.453
logGDP PC	-2.720	0.000	3615	6.915	3408	9.635
GDP growth	0.992	0.000	3590	3.778	3372	2.786
GDP growth PC	-0.001	0.625	3590	0.018	3285	0.019
logGNI	-2.635	0.000	3527	6.899	3152	9.534
Gini index	0.044	0.000	826	0.403	1280	0.359
Inflation var.	0.143	0.000	3547	0.156	3365	0.013
Exchange rate var.	0.090	0.000	3429	0.116	3197	0.026
Agriculture v.a.	0.010	0.000	3219	0.027	2712	0.016
Industry v.a.	0.019	0.000	3166	0.041	2701	0.022
Services v.a.	0.013	0.000	3013	0.044	2717	0.031
Trade openness	-0.174	0.000	3084	0.693	2788	0.867
Financial openness	-0.113	0.000	3409	0.012	3044	0.125
Domestic credit	-0.390	0.000	3225	0.232	2594	0.622
AGI	-1.178	0.000	2239	-0.670	2346	0.508
Human capital	-0.151	0.000	389	0.146	923	0.297
Literacy rate	-0.219	0.000	536	0.718	363	0.938
Unemployment	-0.009	0.000	3172	0.077	2737	0.086
Female to male ratio	-0.010	0.068	3079	0.687	2445	0.697
CO2 emissions	-6.280	0.000	3050	1.369	2445	7.649
Fossil fuel	-0.260	0.000	2367	0.516	2307	0.776
Renewable output	0.138	0.000	2663	0.391	2608	0.252
Renewable consumption	0.346	0.000	3172	0.493	2928	0.148
Vulnerability	0.125	0.000	2686	0.504	2393	0.379
Readiness	-0.184	0.000	2686	0.287	2524	0.472
Economic readiness	-0.127	0.000	2656	0.355	2415	0.483
Governance readiness	-0.270	0.000	2624	0.279	2476	0.549
Social readiness	-0.165	0.000	2593	0.223	2478	0.388

Table XIV. Robustness Tests, Country Characteristics Regressions

The table presents panel data regression results for three main investment category ratios: impact private equity (IPE), equation (3), private equity ratio (PE), equation (1), and foreign direct investment (FDI) as a ratio of country nominal GDP. The results present the robustness tests results for adding human capital and inflation rate variation and exchange rate variation to the main group of characteristics variables. L. specifies that the lagged, last year's, value is used in the regression. For log distance (distance between the city of investor and portfolio company) and crisis I use the contemporaneous values. The panel model type varies in different regressions because of different Hausman's test results, for IPE and FDI I use fixed effect (FE) and for PE I use random effect (RE) regressions. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All tests are two-tailed.

Variables	**IPE**	**PE**	**FDI**	**IPE**	**PE**	**FDI**
L.FDI	0.0004	0.016		0.001*	0.014	
	(1.402)	(1.582)		(1.900)	(1.438)	
L.PE	-0.002			0.001		
	(-0.644)			(0.260)		
L.logGDP	0.0001	-0.004	-0.022	0.0002	-0.0002	0.002
	(0.322)	(-1.071)	(-0.883)	(0.491)	(-0.0707)	(0.194)
L.GDP growth	-0.000	-0.0001	0.001*	-0.000	0-000	0.001**
	(-1.229)	(-0.725)	(1.912)	(-0.650)	(0.367)	(2.054)
L.logGNI	0.001	0.003	0.008	0.0002	0.001	-0.013
	(1.394)	(0.630)	(0.258)	(0.344)	(0.316)	(-1.073)
L.Inflation var.				-.000	-0.001	-0.002
				(-0.154)	(-0.422)	(-0.300)
L.Exchange rate var.				-0.000	-0.002	-0.003
				(-0.124)	(-1.230)	(-0.770)
L.Industry v.a.	0.001	0.015	-0.023	0.001	-0.004	0.018
	(1.172)	(1.500)	(-0.510)	(0.858)	(-0.421)	(1.144)
L.Trade openness	-0.001	-0.005	-0.032	-0.0002	-0.001	0.023*
	(-0.938)	(-1.179)	(-1.097)	(-0.572)	(-0.341)	(1.815)
L.Financial openness	0.001***	0.012*	-0.059	0.001***	0.018***	-0.007
	(3.257)	(1.788)	(-0.766)	(3.721)	(2.787)	(-0.167)
L.Domestic credit	-0.0001	-0.002	0.063*	-0.0002	0.004**	0.038**
	(-0.297)	(-0.631)	(1.839)	(-1.007)	(2.187)	(2.038)
L.AGI residual	0.000	0.006*	0.003	-0.0003	0.002	0.007
	(0.122)	(-1.833)	(0.183)	(-1.237)	(1.007)	(0.894)
L.Human capital	-0.005	0.012*	0.037			
	(-1.204)	(1.877)	(1.224)			
L.Vulnerability residual	-0.016**	-0.131**	-0.123	-0.008	-0.073	-0.015
	(-2.136)	(-2.295)	(-0.279)	(-1.660)	(-1.594)	(-0.101)
L.Readiness residual	0.003	0.008	-0.080	0.001	0.014	-0.133***
	(1.211)	(0.778)	(-0.956)	(0.804)	(1.625)	(-3.559)
Log distance	0.000	0.001**		-0.000***	0.001***	
	(1.618)	(-2.556)		(-2.862)	(-3.317)	
Crisis	-0.0002*	-0.003***	0.002	-0.0002	-0.002***	0.003
	(-1.843)	(-3.565)	(0.312)	(-1.441)	(-3.151)	(0.702)
Constant	-0.016**	0.072	0.510	-0.007	-0.011	0.065
	(-2.603)	(1.293)	(1.311)	(-1.265)	(0.290)	(0.43)
Observations	279	742	1,082	500	1,517	3,288
R-squared	0.286	0.054	0.032	0.078	0.071	0.029
Number of country_id	61	103	141	77	128	161

Table XV. Robustness Tests, Uni-variate Regressions with Crisis Dummy Results

This table presents results for the uni-variate regressions of different social, economic, and climate measures on IPE, PE, or FDI investment ratios. In the table $\Delta GDP_{t-1,t+i}$ is the difference between the GDP growth per capita, $\Delta Vulnerability_{t-1,t+i}$ is the difference in climate change vulnerability, $\Delta Readiness_{t-1,t+i}$ is the difference in climate change readiness, $\Delta Unemployement_{t-1,t+i}$ is the difference in unemployment, $\Delta CO2_{t-1,t+i}$ is the difference in CO2 emissions per capita, $\Delta CO2ints._{t-1,t+i}$ is the difference in CO2 intensity (CO2 tons over GDP per capita), and $\Delta Renewable_{t-1,t+i}$ is the difference in renewable energy consumption as a ratio of total energy consumed. The differences are between time $t+i$ and time $t-1$ where i is 1, 5, or 7 for each country in the sample while t is the time of investment. All regressions include a crisis dummy and use a fixed effects model; standard errors are clustered in country-level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All tests are two-tailed.

Panel A: Immediate Impact, $t+1$

Variables	$\Delta GDP_{t-1,t+1}$	$\Delta Vulnerability_{t-1,t+1}$	$\Delta Readiness_{t-1,t+1}$	$\Delta Unemployement_{t-1,t+1}$	$\Delta CO2_{t-1,t+1}$	$\Delta CO2ints._{t-1,t+1}$	$\Delta Renewable_{t-1,t+1}$
IPE	4.993*	0.675*	0.685	-0.993	1.666	-0.00649	4.790
	(1.836)	(1.713)	(0.748)	(-0.607)	(0.104)	(-1.250)	(0.842)
PE	0.172	0.014	-0.119**	-0.127***	-7.810***	-0.0002	0.091*
	(1.26)	(1.651)	(-2.276)	(-3.144)	(-2.922)	(-0.434)	(1.813)
FDI	0.018	-0.006***	0.009	-0.017***	0.291	0.001	-0.014
	(0.813)	(-2.862)	(1.106)	(-3.458)	(1.112)	(0.821)	(-1.144)

Panel B: Medium-term, $t+5$

Variables	$\Delta GDP_{t-1,t+5}$	$\Delta Vulnerability_{t-1,t+5}$	$\Delta Readiness_{t-1,t+5}$	$\Delta Unemployement_{t-1,t+5}$	$\Delta CO2_{t-1,t+5}$	$\Delta CO2ints._{t-1,t+5}$	$\Delta Renewable_{t-1,t+5}$
IPE	-0.324	1.341	-1.877	0.497	-156.0*	-0.048*	17.370
	(-0.166)	(1.038)	(-0.329)	(0.277)	(-1.841)	(-1.701)	(1.181)
PE	-0.058	0.006	-0.580***	-0.006	-13.110**	0.001	0.262**
	(-0.495)	(0.191)	(-5.274)	(-0.110)	(-2.259)	(0.457)	(2.278)
FDI	-0.068**	-0.005	0.001	-0.005	0.028	0.002	-0.002
	(-2.235)	(-1.502)	-0.0265	(-0.555)	-0.0482	-0.904	(-0.0626)

Panel C: Medium- to Long-term, $t+7$

Variables	$\Delta GDP_{t-1,t+7}$	$\Delta Vulnerability_{t-1,t+7}$	$\Delta Readiness_{t-1,t+7}$	$\Delta Unemployement_{t-1,t+7}$	$\Delta CO2_{t-1,t+7}$	$\Delta CO2ints._{t-1,t+7}$	$\Delta Renewable_{t-1,t+7}$
IPE	3.184	-1.556	-5.49	-0.554	-192.6*	-0.0418	22.000
	(0.504)	(-0.893)	(-0.532)	(-0.264)	(-1.765)	(-0.494)	(1.493)
PE	-0.027	0.008	-0.735***	-0.014	-26.710***	0.0004	0.447***
	(-0.206)	(0.171)	(-3.377)	(-0.123)	(-3.428)	(0.292)	(2.983)
FDI	-0.120***	-0.011***	0.018	-0.016	0.139	0.002	-0.006
	(-2.681)	(-2.891)	(0.629)	(-1.561)	(0.207)	(1.047)	(-0.122)

Table XVI. Robustness Tests, Multi-variate Regressions with Controls and Crisis Dummy Results

This table presents results for the multi-variate regressions of different social, economic, and climate measures on IPE, PE, or FDI investment ratios. In the table $\Delta GDP_{t-1,t+i}$ is the difference between the GDP growth per capita, $\Delta Vulnerability_{t-1,t+i}$ is the difference in climate change vulnerability, $\Delta Readiness_{t-1,t+i}$ is the difference in climate change readiness, $\Delta Unemployement_{t-1,t+i}$ is the difference in unemployment, $\Delta CO2_{t-1,t+i}$ is the difference in CO2 emissions per capita, $\Delta CO2ints._{t-1,t+i}$ is the difference in CO2 intensity (CO2 tons over GDP per capita), and $\Delta Renewable_{t-1,t+i}$ is the difference in renewable energy consumption as a ratio of total energy consumed. The differences are between time $t+i$ and time $t-1$ where i is 1, 5, or 7 for each country in the sample while t is the time of investment. The control variables used for each variable is the same as in table VIII, X, and X. All regressions include a crisis dummy and use a fixed effects model; standard errors are clustered in country-level. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. All tests are two-tailed.

Panel A: Immediate Impact, $t+1$

Variables	$\Delta GDP_{t-1,t+1}$	$\Delta Vulnerability_{t-1,t+1}$	$\Delta Readiness_{t-1,t+1}$	$\Delta Unemployement_{t-1,t+1}$	$\Delta CO2_{t-1,t+1}$	$\Delta CO2ints._{t-1,t+1}$	$\Delta Renewable_{t-1,t+1}$
IPE	6.228**	0.534*	-0.132	-0.256	-39.99	-0.00576	3.82
	(2.342)	(1.813)	(-0.163)	(-0.292)	(-1.414)	(-0.862)	(0.759)
PE	0.189	0.0196	-0.090	-0.129**	-5.145**	-0.001	0.019
	(1.547)	(1.597)	(-1.294)	(-2.513)	(-2.069)	(-1.126)	(0.351)
FDI	-0.019	-0.006**	0.010	0.0004	-0.027	0.002	0.010
	(-0.789)	(-2.534)	(0.849)	(0.085)	(-0.144)	(1.076)	(1.253)

Panel B: Medium-term, $t+5$

Variables	$\Delta GDP_{t-1,t+5}$	$\Delta Vulnerability_{t-1,t+5}$	$\Delta Readiness_{t-1,t+5}$	$\Delta Unemployement_{t-1,t+5}$	$\Delta CO2_{t-1,t+5}$	$\Delta CO2ints._{t-1,t+5}$	$\Delta Renewable_{t-1,t+5}$
IPE	2.533	0.611	2.672	0.466	-167.9	-0.0652	17.03
	(1.407)	(0.513)	(0.426)	(0.195)	(-1.421)	(-1.502)	(1.263)
PE	0.073	0.009	-0.299***	-0.084	-9.003**	-0.002***	0.169
	(0.536)	(0.326)	(-3.200)	(-0.998)	(-2.170)	(-3.360)	(1.541)
FDI	-0.082***	-0.005	0.025	0.027**	-0.539	0.001	0.053***
	(-3.620)	(-1.310)	(1.096)	(2.203)	(-1.224)	(0.173)	(2.642)

Panel C: Medium- to Long-term, $t+7$

Variables	$\Delta GDP_{t-1,t+7}$	$\Delta Vulnerability_{t-1,t+7}$	$\Delta Readiness_{t-1,t+7}$	$\Delta Unemployement_{t-1,t+7}$	$\Delta CO2_{t-1,t+7}$	$\Delta CO2ints._{t-1,t+7}$	$\Delta Renewable_{t-1,t+7}$
IPE	2.667	-1.896	15.91	-0.945	298.7	-0.096**	16.150**
	(0.418)	(-0.851)	(1.063)	(-0.292)	(1.138)	(-2.577)	(2.194)
PE	0.019	0.007	-0.303**	-0.067	-15.920***	-0.003***	0.349**
	(0.136)	(0.228)	(-2.096)	(-0.626)	(-2.973)	(-3.495)	(2.524)
FDI	-0.078***	-0.012***	0.044*	0.019	-0.525	0.001	0.062**
	(-3.780)	(-2.830)	(1.672)	(1.071)	(-1.153)	(0.125)	(2.550)