

# Global Value Chains, Green(ing) Foreign Direct Investment and Sustainable Regional Development<sup>1</sup>

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## Abstract

As the world transitions to net-zero emissions, goods and services are increasingly incorporating green attributes. Achieving this shift requires new and diverse technologies and processes to deliver sustainable products from conception to end use (and beyond). Securing the capital, skills, and knowledge for this green transition is one of the greatest challenges of our time, particularly in less dynamic countries and regions. Foreign Direct Investment (FDI) can play a pivotal role in catalysing the green transition in host economies, yet the existing literature still lacks a clear understanding of 'green' FDI and how it responds to public policy.

This paper offers preliminary insights into these questions by using state-of-the-art Large Language Model (LLM) methods to identify green FDI beyond traditional sector-based definitions, providing a more nuanced view of the green transformation taking place across various industries and geographies in Europe. These emerging trends and patterns are then linked to the role of public policies by examining how national and regional authorities attract green FDI through an innovative survey.

By combining data on green FDI flows with information on the presence and timing of green FDI priority initiatives from 170 Investment Promotion Agencies (IPAs) across Europe, we investigate the effectiveness of targeted and selective policy efforts in bringing green capital, skills, and knowledge to regions, thereby supporting the green transition on the ground.

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<sup>1</sup> This paper is part of "D3.2 - Report on the effectiveness of public policies for recovery and resilience in the era of pandemic and of digital and green transitions" produced in Work Package 3 – "The interconnections of in-market drivers of inequality with other processes and their impact across social groups and spatial scales" of the ESSPIN (Economic, Social and Spatial Inequalities in Europe in the Era of Global Mega-trends) Project. ESSPIN is a Horizon Europe Project supported by the European Commission under contract No.101061104. For more information on the project, its partners, and contributors please see ESSPIN website <https://www.esspinhorizon.eu/>

## Extended Abstract

The European Union (EU) faces a critical juncture as it grapples with the combined challenges of climate change, economic insecurity, and rapid technological advancement. Central to the EU's strategy are the 'twin' green and digital transitions, aimed at fostering sustainable development, boosting productivity, and enhancing economic resilience (Muench et al, 2022; EU Commission, 2024). Recent global shocks like COVID-19 and ongoing geopolitical tensions have highlighted both the fragility and importance of global economic connectivity. The engagement of countries and regions in trade is in fact shown in ESSPIN deliverable 3.1 to demonstrate a positive association with their economic growth outcomes (ESSPIN D3.1, 2024). Moreover, Foreign Direct Investment (FDI), and Global Value Chain (GVC) integration plays a crucial role in determining (uneven) development trajectories and addressing territorial inequalities (MacKinnon, 2012; Crescenzi & Iammarino, 2017; Crescenzi & Harman, 2023).

This report investigates the effectiveness of public policies - specifically policies aimed at building, embedding and reshaping global connectivity, FDI and GVCs at the national and regional levels - in driving recovery, resilience, and the green transition in Europe. In order to operationalise and empirically capture the internationalisation strategies and efforts of countries and regions this research focuses on National and Regional Investment Promotion Agencies. Inward greenfield FDI flows will be leveraged as a measure for national and regional economic internationalisation.

Our approach combines a granular, regional perspective with an appreciation for global connections and forces. We employ three main methodological components:

- A novel methodology using state-of-the-art Large Language Model (LLM) methods to identify green FDI beyond traditional sector-based definitions.
- The Researching Investment Promotion in Europe (RIPE) Survey, covering over 170 IPAs in the EU27 and the UK, to collect detailed data on national and regional IPA strategies.

The RIPE survey, which was designed and conducted especially for this research, constitutes one of the widest-reaching and detailed surveys of its kind, particularly with regards to regional IPAs which remain relatively understudied despite the clear role they can play in leveraging internationalization for regional economic change (OECD, 2023; Crescenzi & Harman, 2023). Over 170 IPAs across all EU27 countries plus the UK completed the survey, including almost 150 regional IPAs in Austria, Belgium, France, Germany, Italy, the Netherlands, Poland, Spain, Sweden and the UK. This has given us rich insights into aspects of IPA strategies which are instrumental for recovery, resilience and transition but which have not before been captured at scale, in particular the presence and timing of green and digital FDI priority strategies.

By combining these data sources and applying regression analysis techniques, we investigate the effectiveness of public policy efforts in growing green FDI. We also shed new light on the territorial inequalities associated with these patterns. Our key findings are as follows:

1. Significant level of green FDI well beyond renewables sectors:
  - o Approximately 1 in 5 USD (20.9%) of FDI into the EU27+UK between 2013 and 2023 can be considered 'green', with over half falling outside the renewable energy sector.
2. A unique geography of green FDI:
  - o Green FDI in core 'green sectors' concentrates in regions with favorable weather conditions for renewable energy.
  - o Green FDI beyond energy sectors concentrates in Central-Eastern EU and large metropolitan capital regions.

3. Preliminary Regression analysis suggests that public policies – in the form of IPAs – support s green investments in less-developed regions:
  - o In less developed regions, sectors targeted by IPAs for FDI growth during the COVID-19 crisis and recovery period experienced substantially higher inward FDI compared to non-targeted sectors.
  - o Green priority strategies implemented by IPAs are associated with higher green inward FDI in less developed regions where they are implemented.

Based on our findings, this report proposes the following policy reflections:

4. **EU policy-makers should fully harness the forces of global economic connectivity, and in particular private capital flows like FDI, to achieve its aims of building resilience and fostering the twin transitions.** Funding the ‘twin transitions’ cannot rely on public resources alone. Green and Digital FDI are important sources of both financing and vital know-how to power the twin transitions, but maximizing the benefits of internationalization in this way requires careful and targeted public policy tools.
5. **Regions, particularly less-developed regions, can (and should) take a leading role in designing and executing these policy tools, but require support to do so effectively.** Regional IPAs (or equivalent bodies within Regional Government) have the potential to succeed in harnessing internationalization for recovery, resilience, and transition across the EU27 and UK. To achieve this, regional IPAs must be supported by national and EU policy-makers, both in terms of financing and building of capabilities. In many regions, particularly in Southern and Eastern Europe, this begins by supporting the establishment of regional IPAs that are already active in many other regions, perhaps following the model of Invest in North-East Romania.
6. **Policy-makers should make full use of the EUTSA, recently published in full, to implement a sector-wide view of green transition and the role of FDI therein.** Our analysis finds that over 50% of green inward FDI in fact lands outside of ‘core’ green sectors, for example in manufacturing sectors like automobiles or pharmaceutical manufacturing and, crucially, in service sectors like ICT or other technical services which play an equally large role in driving the greening of the economy at-large. On top of the findings in this report, regional IPAs have previously been reported to be extremely effective at encouraging the ‘green-ing’ of high-emissions industries through FDI.

This report contributes valuable insights for policymakers seeking to protect Europe's future prosperity and territorial cohesion within an increasingly unstable and uncertain global context. By focusing on IPAs' FDI strategies and developing novel methodologies for identifying green and digital FDI, we provide a comprehensive analysis of the effectiveness of public policies in driving recovery, resilience, and the twin transitions in Europe with special reference to its weakest regions.