

## Seminar

**Prof. Giovanni Marin**

**Department of Economics, Society and Politics of University of Urbino Carlo Bo**

### **Innovative foreign direct investments and the knowledge sources for green and digital inventions: a patent-based analysis**

**Abstract:** We study the role of foreign direct investment (FDI) flows in making EU locations (countries and regions) access the knowledge base relevant for the development of green and digital technologies. More precisely, drawing on recent research on the role of FDIs for the green and the digital transition, we investigate the extent to which inward and outward innovative FDIs – i.e., both greenfield foreign investments and cross-border mergers and acquisitions (M&As) with an innovative content – can constitute a channel through which European countries and regions are exposed to the external knowledge that can combine internal one in the development of green and digital technologies. Technological knowledge sourcing is in fact an important channel for the enrichment of the knowledge base already available in European regions. FDIs lead to knowledge flows regarding combinations of management practices, work organisations and, especially for innovative FDIs, technological expertise. The analysis entails in two steps. After having identified European Union (EU) green and digital patents, we first analyse their evolution over time and geography. In doing so, we show how the distribution of the two technologies across EU countries changes in recent years, as well as the location of the knowledge base – captured by the country of the patents that EU green and digital patents cite – relevant for their development. In the second step of our analysis, we rely on a gravity-modelling framework to understand whether the knowledge base of green and digital technologies developed in EU metropolitan and NUTS 3 regions correlate with innovative FDIs –namely EU innovative inward and outward greenfield FDIs and cross-border M&As.

**Short Bio:** Giovanni Marin is associate professor of applied economics at the Department of Economics, Society and Politics of University of Urbino Carlo Bo (Italy) since 2019, research affiliate at FEEM (since 2022) and leader of the Urbino Unit at SEEDS (since 2020). Previously he was assistant professor at the University of Urbino Carlo Bo (2016-2019) and post-doctoral researcher at the Institute for Sustainable Economic Growth of the National Research Council of Italy (IRCrES-CNR, 2012-2016) and at OFCE-SciencePo, France (2014-2015). He obtained a PhD in Economics, Markets, Institutions at the IMT Institute of Advanced Studies Lucca (2012) and a master degree in Applied economics and economic policies at the University of Ferrara (2008). His research, published in international journals (e.g. European Economic Review, Journal of Environmental Economics and Management, Energy Economics, Brookings Papers on Economic Activity, Research Policy) focuses on the economic analysis of drivers and consequences of environmental innovations, on the environmental and socio-economic consequences of environmental policies, on the assessment of the skills needed for sustainable transitions and on the use of environmentally extended input output analysis for integrated assessment. At the University of Urbino, he teaches Economics of innovation, Environmental economics and policy, and Applied econometrics.

Contact: [giovanni.marin@uniurb.it](mailto:giovanni.marin@uniurb.it)

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**Polytechnic University of Marche**  
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