

Heterogeneous implications of green transition in the labour markets

Topic: Input-Output Analysis: Employment policies (1)

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Climate change and related green transition policies have been substantially transforming the economies and labour markets with major implications on various dimensions ranging from exacerbating existing inequalities and distributional effects to increased risks in health and safety and working conditions. As growing evidence suggests (AkgÃ¼Å et al., 2022; AkgÃ¼Å and Arabadjieva, 2024; Eurofound, 2024; GalgÃ³czi and AkgÃ¼Å 2023; International Labour Organisation (ILO), 2024; Vanhercke et al., 2024), the challenges already faced by diverse vulnerable groups at work are likely to be informed and exacerbated by the consequences of climate change (Salas-NicÃ¡s and Laabbas-el-Guennouni, 2025).

The imperative to achieve net-zero emissions has catalysed a suite of green transition policies that necessitate a fundamental structural transformation of the economies in Europe (and beyond). While these interventions are vital for climate mitigation, they introduce significant risks regarding the exacerbation of existing labour market inequalities and the emergence of new distributional imbalances. This paper adopts a macro-labour economics framework to provide first an overview of labour market dynamics at the aggregate and sectoral employment levels as a result of a selected green and energy transition policies as part of the broader objectives of the European Green Deal (e.g. carbon taxation and sectoral subsidies) in the European Union. In the next step, the paper will then delve into the potential heterogeneous effects such green transition policies might have in the labour force.

Methodologically, the paper utilises a Leontief' input-output (IO) framework to capture the complex interdependencies between industrial sectors and embed it within the green transition context. By leveraging this inter-industry and cross-country framework and using sector-specific labour coefficients will allow to calculate which sectors expand/contract as a result of a given policy scenario and distinguish direct versus indirect employment effects propagated through global value chains under a selected set of green transition policy scenarios. The core empirical strategy involves the use of the 2025 FIGARO inter-country input-output tables. Given that sectors differ in labour intensity, gender ratio, skill mix (e.g. ESCO skill-occupation matrices), wages and contract types, the methodological approach allows analysing different labour market effects with additional data (i.e. 'matching'™ input-output tables with labour market data). More specifically, we will be using data from the European Labour Force Survey (EU-LFS) to further investigate and map heterogeneous labour market effects across specific groups in the labour force, in addition to aggregate and sectoral employment effects.

All in all, this paper aims to track how a selection of green transition policies, such as carbon taxes and subsidies, might influence changes in industrial output. Based on this, it then maps the resulting uneven job gains and losses across various sectors (and regions) and evaluates how policy-induced output fluctuations manifest across diverse demographic and professional dimensions, including gender, age and skill groups. The findings will serve to identify vulnerable cohorts, providing a robust analytical tool to inform the design of a fair and just green transition frameworks that would aim to leave no-one behind. Ultimately, this research contributes to the evidence-based policy literature by highlighting the intersectional nature of economic risks inherent in the transition to a low-carbon economy.

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