

WEATHER SHOCKS AND SECTORAL LABOUR REALLOCATION IN THE EUROPEAN SUB-NATIONAL UNITS

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Climate change poses significant challenges to the productivity of the European agricultural sector, particularly in low-latitude regions such as the Mediterranean. The extent to which sectoral labour reallocation serves as an adaptation strategy to climate shocks remains an underexplored research question.

This paper examines how weather variability affects inter-sectoral labour reallocation among agriculture, construction, industry, and services across 1,149 European districts (NUTS3 level) from 1980 to 2022. In doing so, we also explore the extent to which weather-driven sectoral productivity shocks serve as a key mechanism.

Leveraging this large and granular dataset, we employ flexible functional forms within a fixed-effects panel framework, where the impact of weather shocks is conditional on long-term climate. Unlike previous empirical research in climate economics, which primarily focused on inter-annual variations in average temperature, this study emphasizes the significant role of daily temperature variability. Temperature variability is particularly critical in warmer regions with low seasonal variability, which are more vulnerable to sudden temperature shifts or rainfall shocks.

In hot regions with low seasonal variability - such as the Mediterranean - we find a robust adaptive response in the labour market, where workers shift from climate-sensitive agriculture to less affected sectors, such as industry and services. Interestingly, we also observe a labour reallocation effect in the opposite direction - from industry and services to agriculture - in the most cold and high-income districts. The heterogeneous impact of weather shocks on sectoral value-added growth across different climates appears to be a key mechanism driving this labour reallocation.