Unravelling the border-facade of France: a multi-level modelling of cross-border commuting

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Given its central position in Western Europe, France is the European country where cross-border commuting is most intense. Over 350000 residents cross the national border everyday to go to work. Cross-border commuting raises a lot of concerns for planners on both side of each border, especially for provisioning transport infrastructure and local public services but also because it impacts land and housing markets, especially when salary differentials are high. While there is a lot of research about the daily functioning of specific borders (e.g. France-Switzerland or France-Luxembourg), generalization is lacking and spatial heterogeneities impede our understanding of the very determinants of cross-border commuting, such as the role of benefits differentials, transport costs and distance, or the relative availability of jobs at residential places and across the border. Further, these effects are most likely mediated differently by the socio-demographic characteristics of workers, their employment sector, and the quality of their residential environment at large. This suggests that an individual approach and a spatially detailed approach is needed, which contrasts sharply with the fact that most European-wide studies of cross-border commuting are conducted at very aggregated spatial scales (NUTS 2 or 3).

We propose to analyse the propensity of active individuals to cross the border for the entire Border-Facade of France, from Belgium to Spain via Luxembourg, Germany, Switzerland, Monaco and Italy. The goal is to distinguish whether and to what extent a cross-border working choice is actually different from a cross-urban region choice. Especially, does the distance play a different role if you move beyond the border of your functional urban area or if you move beyond the national border?

We use the Census 2015 data at individual level (active population), with a geographical recording at municipal scale. We estimate a series of multilevel models with individual, economic sector, and 50 km Facade zones (BE; BE-LUX-DE; DE; DE-SWITZ; SWITZ -ITAL;…) as levels. This methodological choice is motivated by previous research using the 2012 Census where we modelled all workers in France (not just the Border-Facade) and from which we found significant spatial heterogeneity and very steep effect of the distance to the border.

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