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Determinants of commuting flows in Germany

The paper studies commuting flows between German regions. Using panel data of 400 German regions from 2013 to 2019 we evaluate the effect of the wide range of indicators determining the magnitude of the commuting flows: demographic factors, indicators of the labour and real estate markets, welfare variables, social and educational system characteristics, etc. We employ the gravity model analysis with Poisson Pseudo Maximum Likelihood, allowing us to consider even the absence of commuters between regions. The novelty of the research is that the full structure of commuting flows, including the direction, is analyzed at the aggregated district level. In addition to other papers devoted to the economics of the labor market and focused mostly on individual data and selected determinants, we investigate a wide range of possible factors and conclude that the main macroeconomic factors determining both the intensity and direction of commuting flows: population, unemployment rate, cost of leasing housing and the number of companies per 10000 people. We also find that commuting flows between regions in the same land are 202% higher than between regions from different lands, and commuting flows between neighbouring regions are 414.5% higher than between regions without a common border.

Keywords: commuting; gravity models; Germany; panel data; PPML.
JEL classification: J61; R23.

1. Introduction

Nowadays stable economic growth is inextricably linked with the dynamic labour market. One of the key characteristics of efficient labour resources and high economic activity in a market economy is the mobility of the labour force (Goetz et al., 2010). Free labour mobility across the country can only be realised with a developed road and transport infrastructure that provides communication between regions. Germany occupies one of the first places in the world in terms of transport network density — this applies to both road and rail connections between regions. High road density contributes to increased labour market mobility (Sun et al., 2017), the emergence of frequent territorial movements along the home-to-work route and a socio-economic phenomenon named commuting. The conducted studies demonstrate that the lack of alternatives for work in rural areas, combined with the desire to live outside a large city, is a fundamental push and pull factor for the development of commuting (Partridge et al., 2010). The analysis of the factors affecting the direction and intensity of commuting flows can be useful for both

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