

Project title: **Data spatial aggregation in labour market matching**

NON-TECHNICAL SUMMARY

The project analyses the impact of data spatial aggregation on the labour market matching process. It tackles the aspects connected to both spatial interdependencies and the factors that affect the efficiency of the trade between demand and supply. The interactions between the local markets affect the aggregate matching process. Moreover, certain factors influence the efficiency of this process. The research is performed quantitatively and it refers to the Polish labour market in the time span 2000-2013 at five different levels of data aggregation: NUTS-0 to NUTS-4. The findings are described in two papers. The first one applies spatial econometric methods to analyse spatial interdependencies. The second paper considers spatial aggregation effects and identifies determinants of the matching process efficiency using the stochastic matching frontier method. In each case the random, stock-flow and job queuing matching function models are examined.

The paper focused on spatial interdependencies is based on NUTS-3 and NUTS-4 level data. The findings indicate that:

- spatial interactions exist and influence the matching process in the local labour markets,
- there exists heterogeneity among the local labour markets, and some proofs of both clustering and polarisation were found,
- the unemployed individuals in the contiguous units exert negative externalities on the focal labour markets, while the vacancies exert positive externalities,
- the vacancies seem to be the driving force of the matching process,
- decreasing returns to scale are present at both NUTS-3 and NUTS-4 levels.

The paper focused on determinants of the efficiency of the matching process is based on NUTS-1 to NUTS-4 level data. The findings indicate that:

- there is significant inefficiency in the matching process at all regional levels,
- in the long-run inefficiency has been gradually decreasing, while in the short-run it was correlated to the business cycle,
- the stock-flow model explains the matching process in the Polish labour market, but in some cases the job queuing model prevails,
- at more disaggregated markets the impact of particular demand and supply variables diminishes,
- decreasing returns to scale prevail,
- different factors affect the efficiency of matching at different levels of spatial aggregation,
- annual and monthly data produce (slightly) different results.

The project findings confirm the interdependence of local markets in the labour market matching process. The potential collaboration of the public employment agencies should ease the matching. Identification of the determinants of the efficiency of the labour market matching process should ease shaping the labour market policy at certain regional levels.

Keywords: spatial interaction, spillover effect, matching function, stochastic matching frontier model, efficiency of the labour market matching