

Labour Market Dynamics and Regional Fertility: A Spatial Analysis for Germany

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Background

This study explores a new dimension in connecting labour market and demographic changes. It examines the fertility effects of regional labor market dynamics measured by gross job creation and job destruction rates in Germany. **Job creation** and **destruction rates** measure how easy it is to lose a job and how difficult it is to find a new one. They also define the **opportunities** of changing jobs and the **risks** of losing one's job.

Labour Market Dynamics

Measuring Labour Market Dynamics

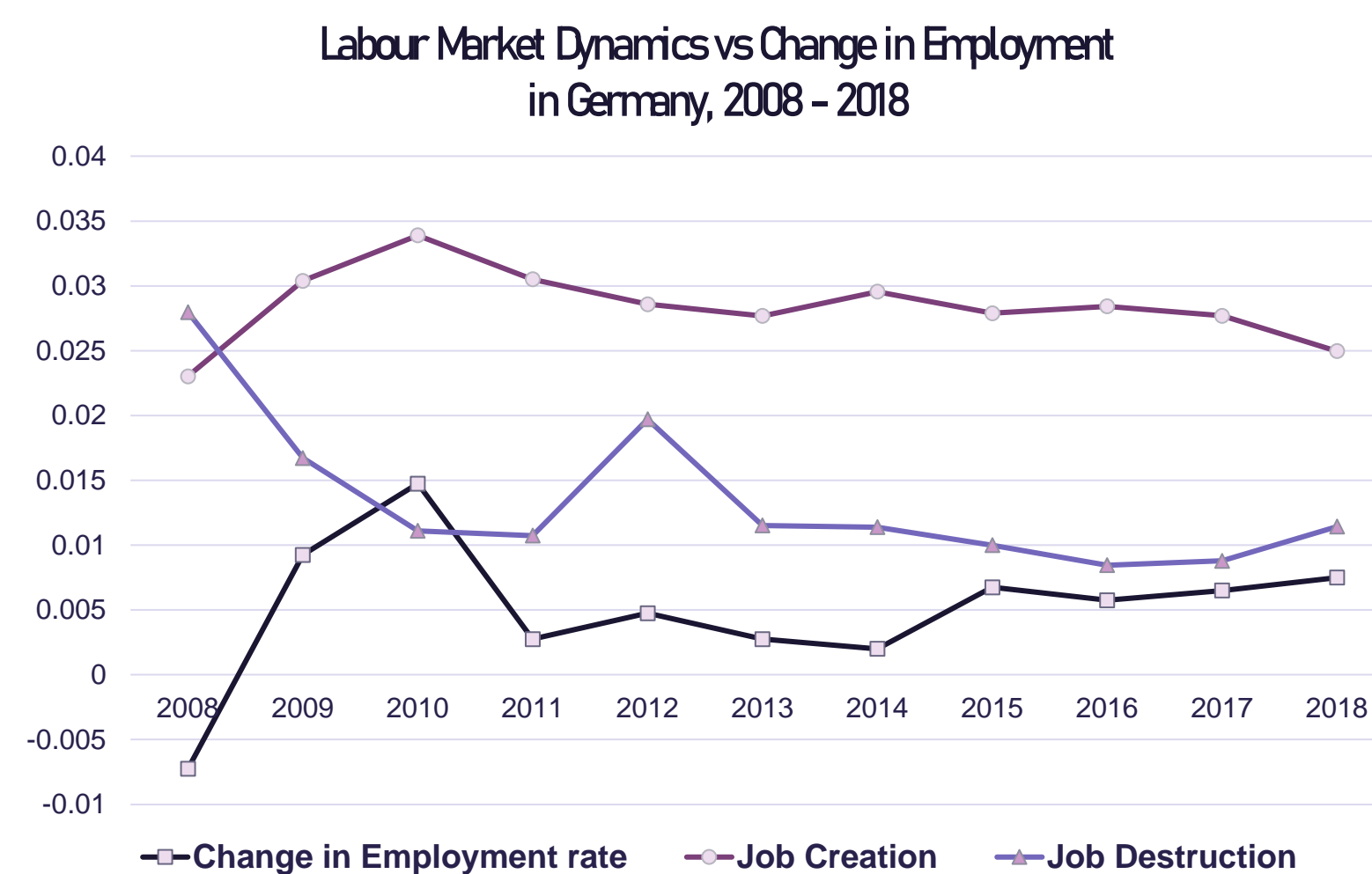
Job creation: total employment gains in expanding industries

$$JC_{it} = \sum_j \frac{E_{ijt} - E_{ij(t-1)}}{(E_{it} + E_{i(t-1)})/2}, \text{ for all } E_{ijt} - E_{ij(t-1)} > 0$$

Job destruction: total employment losses in contracting industries

$$JD_{it} = \sum_j \frac{|E_{ijt} - E_{ij(t-1)}|}{(E_{it} + E_{i(t-1)})/2}, \text{ for all } E_{ijt} - E_{ij(t-1)} < 0$$

Labour Market Dynamics vs Change in Employment



Source: author's calculation

Data on employment: <https://data.oecd.org/emp/employment-rate.htm>

Data on labour market dynamics: The Federal Employment Agency's statistics and labour market

Research Questions & Hypotheses

- How do labour market dynamics affect regional fertility?
 - ❖ Job Creation
 - ✓ Better opportunities
 - ✓ Easier to find a new job
 - × Work-life balance
 - ❖ Job Destruction
 - × More likely to lose a job
 - × Uncertainty
 - ✓ More willing to pursue a stable life
- Do the effects vary in different social groups?
 - ❖ Male workers vs female workers (Gender-specific measures)
 - ❖ High-skilled workers vs low-skilled workers (measures focusing on KTI industries)

Data & Methods

Data

- NUTS 3 regional employment data from 2008 to 2019 by industries (WZ2008~88 industries) are ordered from the Federal Employment Agency of Germany;
- Data for the rest of the variables were retrieved from the Regional Data Bank of Deutschland

Methods

- Spatial panel data modeling to identify the patterns of changes over time and space;
- Spatial lags for the dependent variable and some independent variables;
- Two-way fixed effects

Results & Discussions

Results

| Dependent Variable: Total Fertility Rate of NUTS 3 Regions | | | | |
|--|-------------|-------------|-------------|-------------|
| JC_2dg | 0.4918 ** | 0.4907 ** | 0.4402 * | 0.42 * |
| | 0.1778 | 0.1778 | 0.1757 | 0.1755 |
| JC_2dg_slag | -1.7634 *** | -1.76 *** | -1.7527 *** | -1.7096 *** |
| | 0.4271 | 0.4273 | 0.4219 | 0.4212 |
| JD_2dg | -0.4706 * | -0.4694 * | -0.4544 * | -0.4375 * |
| | 0.2059 | 0.206 | 0.2034 | 0.2031 |
| JD_2dg_slag | 0.7384 | 0.7318 | 0.6879 | 0.5995 |
| | 0.4963 | 0.4967 | 0.4903 | 0.4898 |
| FLFP2030 | 0.309 *** | 0.304 *** | 0.3191 *** | 0.2605 *** |
| | 0.0613 | 0.0629 | 0.0606 | 0.0622 |
| FLFP2030_slag | -0.505 *** | -0.4952 *** | -0.3947 ** | -0.2587 * |
| | 0.1216 | 0.1249 | 0.1207 | 0.1251 |
| Gender_gap | | | -1.1251 *** | -1.2889 *** |
| | | | 0.1124 | 0.1193 |
| Ratio_female_commuter | | 0.026 | | 0.3175 *** |
| | | 0.0753 | | 0.079 |
| lambda | 0.1065 *** | 0.1063 *** | 0.1044 *** | 0.1010 *** |

Notes: other control variables: log GDP, spatial lag of log GDP, share of foreigners at reproductive ages

Discussions

- The preliminary results suggest that:
 - ✓ Job creation in a given region is positively related to the fertility rate, while job destruction is negatively related to the fertility rate;
 - ✓ The results may imply that the possibility of (life) changes is a candidate for the mechanism;
- The following steps will be carried out:
 - ✓ Investigation of the role of gender-specific labour market dynamics;
 - ✓ Investigation of the role of labour market dynamics of specific industries.