Spatial implications of minimum wages

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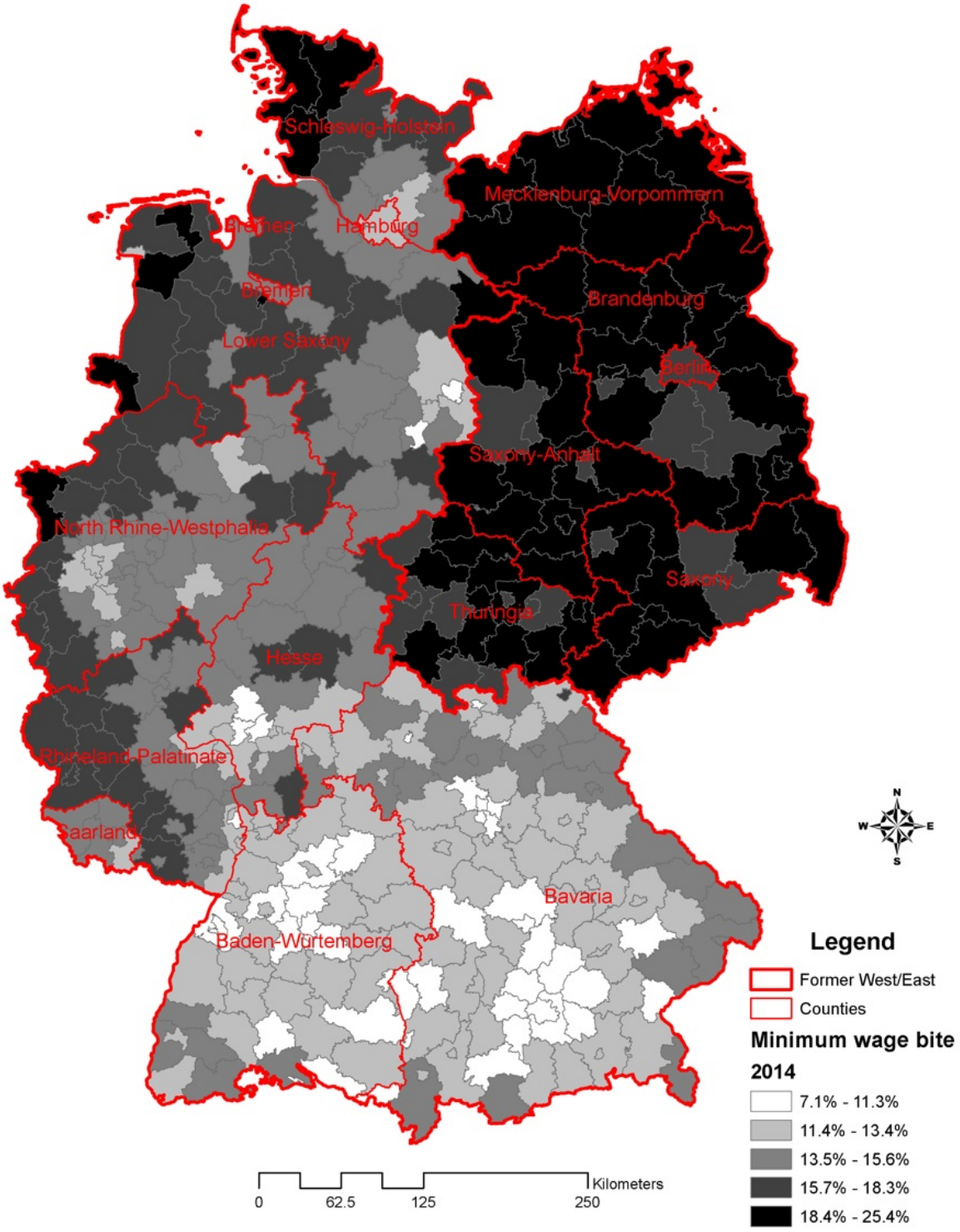
While there is a large and controversial literature on the implications of minimum wages for employment and the distribution of income, little is known about the consequences across regions. This column describes how the implementation of a minimum wage in Germany in 2015 has raised incomes in the lower part of the wage distribution without affecting employment of low-wage workers. However, there is no clear evidence that the minimum wage has led to a net in-migration or out-migration in poorer German counties.

Minimum wages are a popular policy instrument to fight income inequality. According to the International Labour Organization (www.ilo.org), minimum wages had been implemented in 92% of their 186 member countries in 2015. While there is a large and controversial literature on the implications of minimum wages for employment and the distribution of income (Brown 1999, Neumark and Wascher 2008),[1] little is known about the consequences across regions. With wage inequality across locations within countries, we should expect that wage floors affect poorer counties more than richer ones, as a larger number of employees earn less than the minimum wage there. What consequences would this have for regional migration flows? Do people leave the periphery and move to richer, urban places? The introduction of the national minimum hourly wage of €8.50 in Germany in 2015 allows us to explore this question (Ahlfeldt et al. 2018).

The minimum wage bite

The key idea to estimate the causal effect of minimum wages on the distribution of wages, employment and regional migration is to exploit spatial heterogeneity in the share of workers that earn less than the statutory minimum prior to the introduction. We refer to this variable as the minimum wage bite (Machin et al. 2004). We use data from the Employment Histories (BeH) and the Integrated Employment Biographies (IEB) provided by the Institute of Employment Research (IAB), which contain data on the universe of employees in Germany[2] and combine them with estimated working hours obtained from auxiliary regressions based on data from the 1% sample of the 2012 census. We account for the sector of employment, federal state of employment, and various socio-demographic attributes to get appropriate estimates. Further, accounting for commuting flows between counties delivers a value of the minimum wage bite for each of the 401 counties in Germany. Figure 1 illustrates that in some jurisdictions, in particular in East Germany, the minimum wage bite reaches levels of up to 25% while only around 10% of employees in Munich earned less than €8.50 in 2014.

Figure 1 Spatial distribution of the minimum wage bite



Notes: The minimum wage bite is the percent of workers paid below the minimum wage in 2014.

Effects of the German minimum wage

To find out how the mandatory wage floor has affected wages, employment, and migration, we essentially compare the changes in these outcomes between jurisdictions with a high minimum wage bite and those with a low minimum wage bite before and after 2015. We build on the years 2011-2016. In this difference-in-differences approach, we control for

arbitrary county-specific factors that do not change over time and county-specific (linear) trends. To address a potential legacy effect of Germany's division, we allow for separate non-parametric trends in both parts of the formerly separated country.

Figure 2 summarises how hourly remuneration changed as a response to the introduction of the minimum wage at the 10th percentile, the 50th percentile, and the 90th percentile of the wage distribution. The dashed line indicates our counterfactual measure of how wages would have developed in the absence of the policy. It is evident that incomes at the 50thand 90thpercentiles are hardly affected, while low-wage workers (10th percentile) in counties with a higher minimum wage bite experience higher growth rates of their hourly wage on average compared to workers in places with a lower minimum wage bite. To put numbers to this statement, an increase in the minimum wage bite by one percentage point is associated with a 0.5% larger wage increase at the 10th percentile. These results imply convergence of wage income across regions in Germany. The question is if the increase in wages in the left tail of the wage distribution came at the cost of reducing employment in the affected regions. Theoretically, the compression of the wage distribution could result from the most vulnerable workers losing their jobs, in which case the positive effect on wages would not only be a mechanical, but also a cynical result.

Figure 2 Impact of the minimum wage bite on the wage distribution

Notes: Results from a county-year-level event study, with the outcome in the panel header and minimum wage bite (percent of workers paid below the minimum wage in 2014) being the treatment variable.

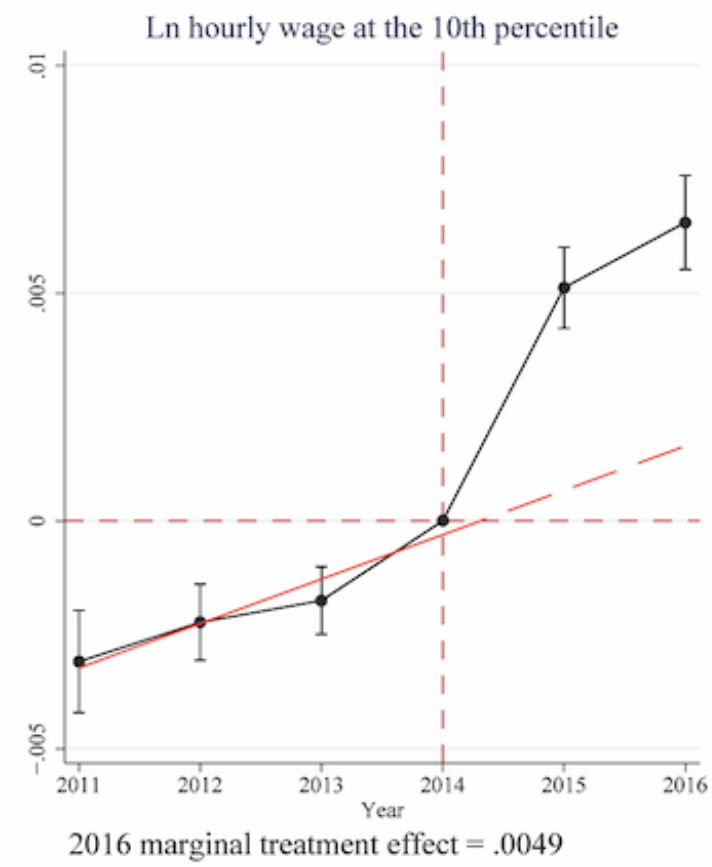
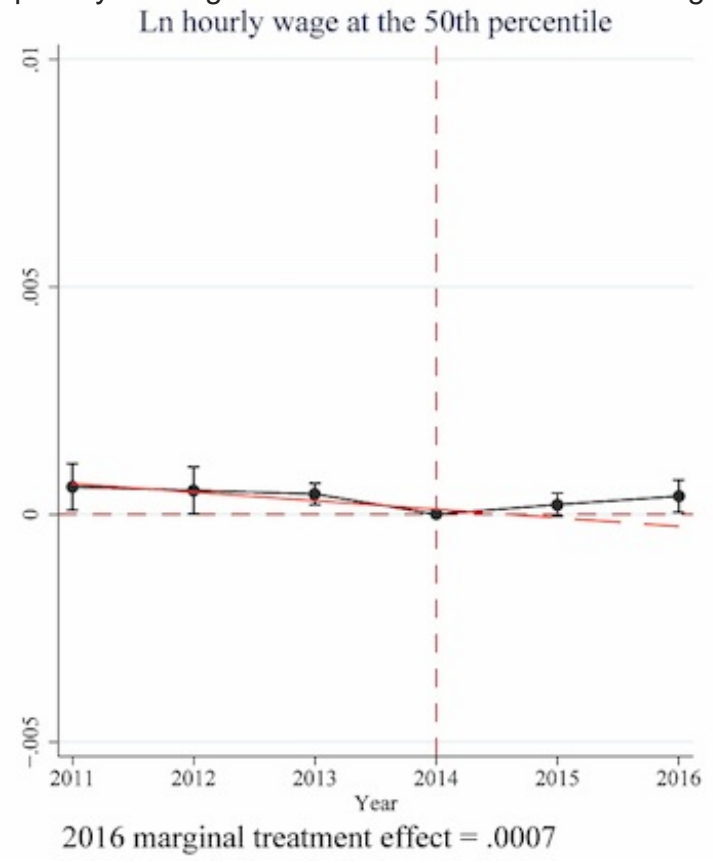


Figure 3 provides a clear answer to this concern. If anything, employment exceeds the predicted trend in high-bite counties, but the effect is not statistically significant. Moreover, the economic size of the estimated effect is tiny. A one percentage point increase in the minimum wage bite leads to an estimated increase in employment of 0.06%, so essentially zero! We need to keep in mind, though, that these results only refer to the short run, that is, within two years after the minimum wage low came into force.

Figure 3 Impact of the minimum wage bite on employment

Notes: Results from a county-year-level event study, with the outcome in the panel header and minimum wage bite (percent of workers paid below the minimum wage in 2014) being the treatment variable.

Finally, we wish to know whether the spatially heterogeneous effects of the minimum wage for labour market outcomes have changed the pattern of regional migration. Against the background of the above findings, one would expect that the policy has reduced incentives to migrate from poor to rich locations within Germany, thus working against an urbanisation trend that is evident in many countries (United Nations 2014). Figure 4 informs us that both in-migration and out-migration dropped in high-bite relative to low-bite counties in 2015, but this effect vanished one year later. As migration is a long-term decision based on expectations, we need to include additional years into the analysis to obtain a broader, more reliable picture of migration effects. In the short run, there is no clear evidence that the minimum wage has led to a net in-migration or out-migration in poor (high-bite) counties.



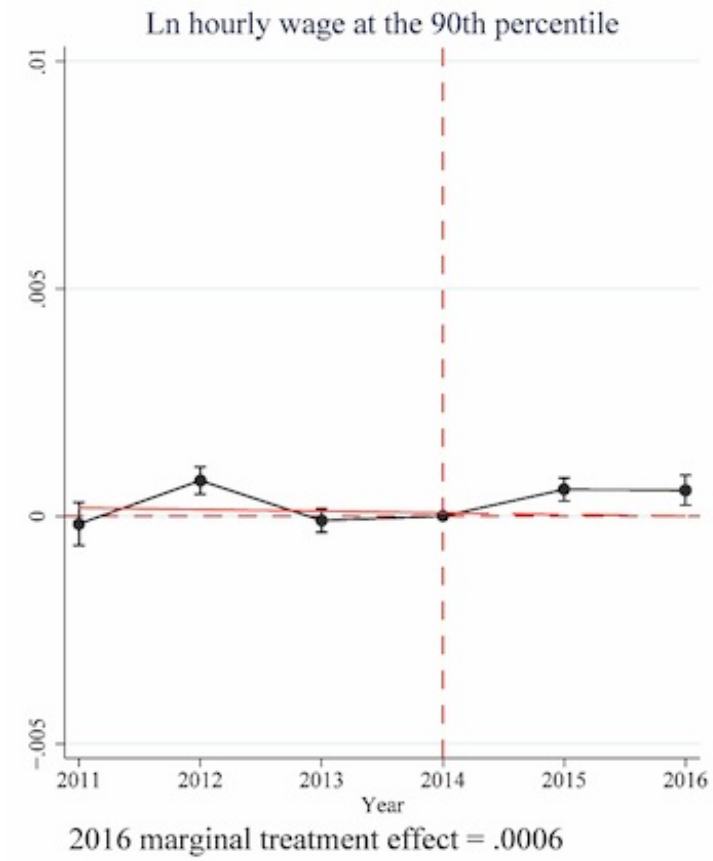
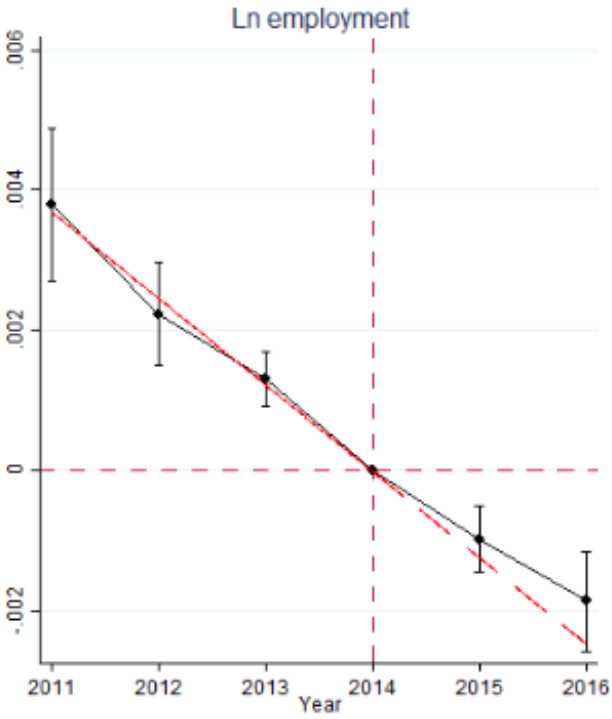
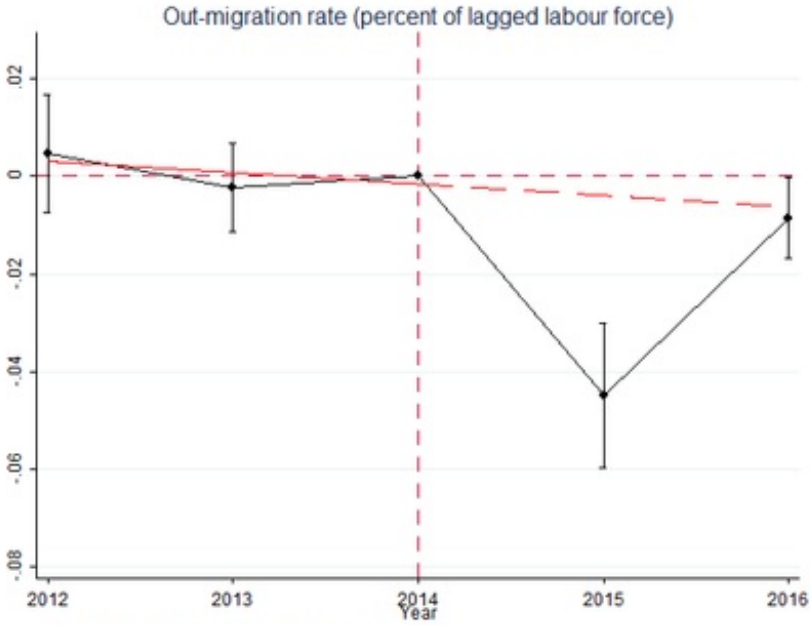


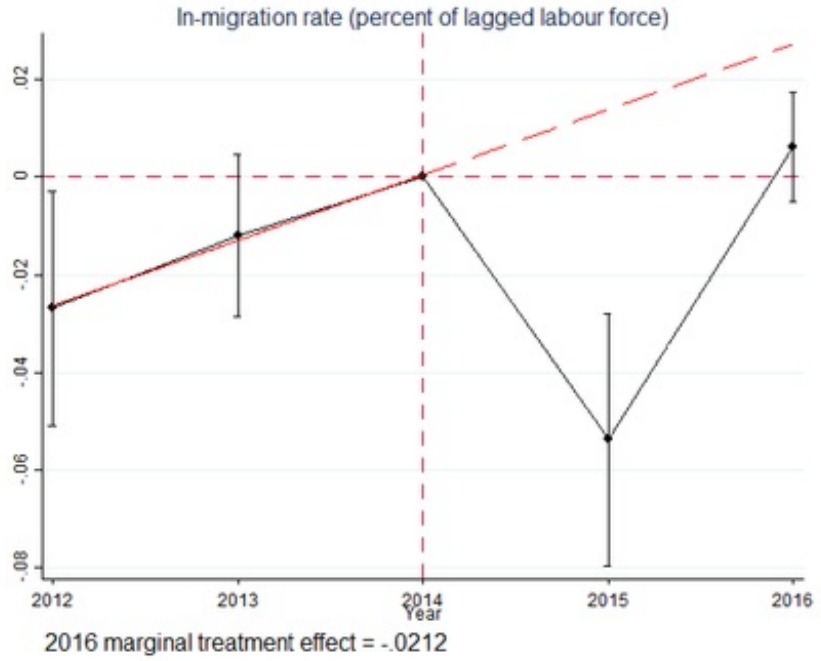
Figure 4 Impact of the minimum wage bite on migration



2016 marginal treatment effect = .0006



2016 marginal treatment effect = -.0023



Notes: Results from a county-year-level event study, with the outcome in the panel header and minimum wage bite (percent of workers paid below the minimum wage in 2014) being the treatment variable.

Policy implications

From our empirical analysis, we conclude that the minimum wage has raised incomes in the lower part of the wage distribution without affecting employment of low-wage workers. This indicates that the competitive labour market model has to be rejected, at least for low-wage workers who do not seem to be paid their marginal value product (Machin et al. 1993, 2004). Whether this comes at the cost of lower profits or higher consumer prices remains an interesting open research question. Yet, against the background of the evidence provided, the recently agreed increase in the German minimum wage to €9.35 by 2020 seems justifiable.

We would like to stress, though, that the findings should be taken with caution. First, it is unclear whether higher levels of the minimum wage – say, €12 or more as some have suggested in the policy debate – would yield qualitatively identical results. Second, the economic situation in Germany has been robust in 2015 and 2016. With low unemployment levels and optimistic prospects of entrepreneurs, higher statutory minimum wages are less likely to lead to job losses. In a downturn, the same policy could have brought about different results. Third, we are only able to make statements about the short-run implications of the minimum wage policy at this point. Once new information for follow-up years become available, these findings need to be reviewed.

References

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Endnotes

[1] Dube et al. (2010) and Caliendo et al. (2018) represent examples of more recent evidence.

[2] Civil servants and the self-employed are excluded.