

Assessing the Economic and Social Effects of Integration through the Prism of Border Regions

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Abstract

Borders impede economic activity in the areas in their proximity. Hence, their elimination could lead provide the border regions with an economic boost. In this paper, we investigate the impact of integration into the EU on municipalities located in regions in the proximity of the borders affected by EU integration. Our aim is to use a broad dataset to cover and directly compare different the effect of different stages of EU deepening as well as EU widening processes.

The economics literature views borders as significant obstacles to trade. The traditional approach is to use gravity models to compare trade intensities within and between countries to measure the magnitude of the barrier embodied by national borders (McCallum, 1995; Gil-Pareja et al., 2005; Mayer et al., 2019). A meta-analysis of the border effect on trade by Havranek and Irsova (2017) finds that borders reduce trade on average by 33%.

From the perspective of a firm, a border increases the cost of accessing the market on the other side of the border. This, in turn, reduces the market potential of firms in the border areas. As a consequence, firms located further inward within a country enjoy a competitive advantage, making the border regions peripheral within a country (Van Houtum, 2000; Niebuhr, 2004). Correspondingly, the removal of the barriers associated with borders in the course of economic integration eliminates the disadvantage of firms located near borders, and the prospect of access to a new market can even attract new firms to settle in the border areas. According to the new economic geography (NEG), however, this depends on the interplay between centrifugal and centripetal forces. On one hand, firms want to remain located near large markets (home market effect) as well as consumer want to live near to large markets (love of variety). On the other hand, a less crowded market is more attractive for firms to settle (competition effect) and offers cheaper prices of commodities for consumers (cost of living effect).

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To capture the the interplay of these effects, Redding and Sturm (2008) extended the model of Helpman et al. (1995) to a multiregional context, where the border effects are captured by the transport costs - the closer a city is to a border, the higher are the transport costs, resulting in a lower consumer and firm market access and ultimately in lower equilibrium number of workers in a city. Economic integration enters the model as an exogenous shock to the transport costs, after which it takes time to adjust to a new steady state, with the wage differentials between cities playing a major role in this process. Importantly, Niebuhr et al. (2002) note that the overall outcome may depend also on abundance of mobile production factors: labor and capital. They further note that the sectoral structure of the border areas is also important - if there are firms on both sides of the border that are vertically mutually linked, the economic activity could concentrate in these areas. This is what happened on the US-Mexico border in the wake of the creation of the NAFTA (Hanson, 1996, 2001).

Redding and Sturm (2008) use this approach to investigate the impact of the division of Germany after the second world war. They find that the division lead to a decline of population in West German cities near the border with East Germany - cities that were centrally located before the division, but became peripheral after. Furthermore, their results indicate that the impact of changes in the trade costs decreases with the distance from the border as well as with the size of the cities. A possible explanation for the latter is that larger cities have a higher tendency to specialize and therefore have better market access. Similar effects are likely to have taken place in the course of the integration process within the European Union (EU). Brakman et al. (2012) evaluate the impact of integration into the European Union on border cities, defined as cities near a formerly external border of the EU that became an internal EU border within the last 40 years. However, they find that the impact of integration, while positive, does not fully offset the negative effect of being located near a border. Furthermore, the positive effect of EU integration diminishes after 70 km from the border as well as after up to 30 years since accession. Heider (2019) arrives to the same conclusion on population growth of German border cities following the 2004 accession. Using light intensity as a proxy for economic development, Brühlhart et al. (2019) find that border areas of the new member states likewise benefited from the integration, but not enough to offset the negative shadow of borders.

In this paper, we evaluate the impact of EU regions on cities located near the borders affected by EU integration. In particular, the recent Eastern enlargements of the EU provide a quasi-experiment to study the impact of removing borders (and barriers associated with them). Just like Brakman et al. (2012) and Redding and Sturm (2008), we use municipal level data as a proxy for economic development. To be able to do that, we use the Directorate-General for Regional and Urban Policy data on population at the LAU2 level for the 28 EU member states for the years 1961, 1971, 1981, 1991, 2001 and 2011. The historic depth of our dataset thus enables us to evaluate the impact of the majority of EU

widening as well as EU deepening processes.

We further use the GISCO shapefiles to identify border municipalities using the minimal to national (internal) and EU (external) borders. In other words, we use the spatial data to construct our treatment group (municipalities in proximity of borders affected by integration) and the control group (all other municipalities in the EU near to a national border whose status has not changed in the course of EU integration). Our model has the following form for a municipality i in region j at time t :

$$\Delta n_{it} = \alpha + \sum_{m=1}^r \lambda^m * T_t^m + \gamma^m * I_i^m + \delta^m * I_i^m * T_t^m + \sum_{k=1}^l \rho^k x_{jt}^k + \tau_t + \varepsilon_{it} \quad (1)$$

where the dependent variable, Δn_{it} is the population growth. In the model we simultaneously include m integration processes that took place over our observation period, while we differentiate between deepening and widening. That is, we run a separate model for the EU enlargements (widening) and a separate model for moves aimed at deepening the integration (e.g. adoption of the Single Market and the creation of the Schengen Zone). The variable I_i^m denotes the municipalities that are located near a border affected by the integration process m and T_t^m denotes the post-treatment period. We further incorporate k control variables at the regional level, represented by x_{jt}^k . Lastly, we also include the time fixed effects (τ_t) and the error term ε_{it} . We also calculate the impact of various stages of EU integration by extending the model to incorporate various other factors, such as the distance from the border, population size or the time since the integration process took place.

Our results contribute to the existing literature in several ways. First, we take advantage of a broad and balanced dataset that enables us to evaluate the various elements of EU integration. Second, previous literature concentrated mainly on the evaluation of either one specific integration process or computed an average over several steps of an integration process. In contrast to that, our aim is to cover and directly compare different stages of EU deepening as well as EU widening processes. Third, we concentrate solely on the border regions of the EU, while previous analyses compared the development of the border municipalities also to the internal municipalities, with Brakman et al. (2012) including also non-EU municipalities in the control group of several specifications. Lastly, the existing literature concentrates on land borders, whereas we aim to also consider regions in the proximity of maritime borders affected by integration.

Since border regions (on NUTS3 level) comprise a significant part of the EU - according to EC (2017) it is 40% of EU area and 30 % of EU population- our analysis provides an insight to what extent municipalities located in these regions benefit from EU membership. Importantly, by considering the various elements of integration (not only in time but also in their nature, by differentiating between widening and deepening of integration), we can

shed light on which aspects of integration have had the most profound effects, and whether these effects have been universal or context-dependent. The results of our paper thus help quantify the size and nature of the various benefits of EU membership for existing border regions of the EU as well as the border regions of EU candidate countries that may become part of the EU in the future.

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