

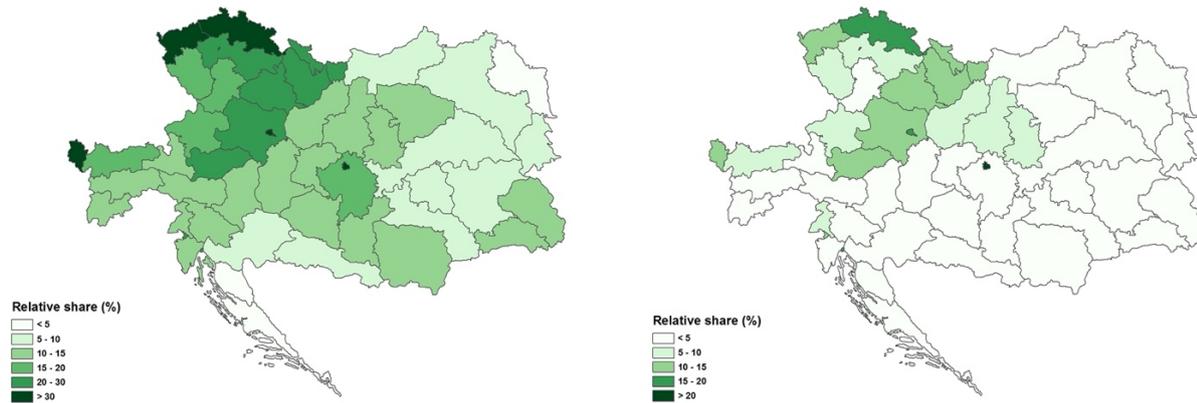
Industrialisation in the Habsburg Empire: A Spatial Analysis

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Extended abstract for the EHS Annual Conference 2022, Robinson College, Cambridge

The Habsburg Empire inspired generations of economic historians. For many, it was the blueprint European customs union (Komlos 1983; Matis 1985); others described it as a failed attempt at late development (Freudenberger 1967; Gerschenkron 1977). Quantitative examinations offered brighter assessments, at first (Katus 1970; Good 1984; Good and Ma 1998), but have given way to yet gloomier accounts (Schulze 2000), casting doubt on the extent of market integration achieved by the customs union (Schulze/Wolf 2012). In the global context of industrialisation (Williamson and O'Rourke 2017), Austria-Hungary performed as a 'half-periphery': the Czech lands and Austrian provinces belonged to Europe's industrial core while the other Habsburg lands achieved little convergence before 1914 (Schulze 2007; Klein et al. 2017). Past historians argued that the spread of industrialisation in the empire mirrored the European experience, diffusing from the Northwest to the Southeast (Good 1984; Pollard 1986), but the recent literature found limited diffusion.

We use detailed statistics from occupational and business censuses to provide accurate measures for both the level and spatial concentration of manufacturing activity before World War I. We first map industry location in 3 major cities and the regions of 47 chambers of commerce across 13 branches of manufacturing, differentiating employment in factory industry from handcrafts. The overall level of industrialisation varied along the northwest-southeast gradient, but with dramatically different spatial concentration between industries. In primary metals, machinery, chemicals, or textiles, where factory employment became predominant, we show very strong spatial concentration and regional specialisation, similar to Britain (Crafts and Mulatu 2005) or the USA (Klein and Crafts 2012) in the same period. By contrast, craft workshops remained common in metal goods, woodworking, food processing, and most prominently in clothing. These industries dispersed across the Empire. We highlight that while the concentration of older industries (textiles, primary metals, or ceramics) conformed to the core-periphery view, modern manufacturing (machinery, chemicals, paper and printing) demonstrated different spatial patterns, agglomerating in the metropolitan centres. Further, the geographical diffusion of manufacturing activity seems to have been the legacy of protoindustrial traditions more than the Industrial Revolution. As these maps demonstrate, factory industry, which accounted for little more than a third of all manufacturing employment in 1910, concentrated very strongly in the northwest. Modern industrialisation made manufacturing more spatially concentrated, not more diffused.



Map 1. The share of employment in total manufacturing (left) and factory industry (right) in the economically active population in 1910 in the territorial chambers of commerce in Austria-Hungary (%). Factories are establishments employing machine power and more than 20 people.

We then examine location determinants in spatially concentrated industries using large cross sections of more than a thousand districts. While occupational data at this level of analysis follow a slightly less detailed industry classification and do not differentiate by establishment size, they enable us to assess econometrically the importance of both local endowments and different measures of market access in specific industries. The results demonstrate distinctly different location dynamics in industries of the First and Second Industrial Revolution. They reflected both Heckscher-Ohlin and New Economic Geography factors, but the prime determinants differed across industries.

Our analysis contributes to the historical analysis of industry location, advancing the state of the art in different ways. First, while we measure industrial activity with occupational data, we count both total and factory employment in manufacturing to capture both dimensions of industrialisation: the size of manufacturing employment and the shift from craft production to factory industry. Second, we conduct our analysis without pooled cross-sections, which much of the literature has used. The coefficients we estimate for location determinants are easy to interpret: they are specific to a given industry at a given time. Following Basile and Ciccarelli (2018), we confirm the importance of industry-specific location factors. Coefficients obtained from pooled cross sections may vary across countries or periods simply because of structural differences in employment. Third, we address, for the first time in historical economic geography, the ‘modifiable unit area problem’ (Brian et al. 2010): the sensitivity of empirical findings to changing levels of spatial aggregation. We show that this matters, and that we must interpret results obtained from only regional or provincial data with caution.

The paper is part of the ERC Horizon 2020 Starting Grant project *Spoils of WAR* (GA803644) hosted by the Dondena Center for Research in Social Dynamics and Public Policy at Bocconi University.