

Job Polarization and the Competitiveness of Rural Firms in a Knowledge-Intensive Economy

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Extended abstract:

How does spatial sorting of jobs and job upgrading within industries impact the ability of firms in rural areas to compete in a knowledge-intensive economy? This issue has become the core of regional policies for growth, resilience and territorial cohesion in many regions outside metropolitan areas. Technological change, such as automation and digitalization, plays a crucial role in job upgrading within industries. Automation can replace lower-skilled tasks while simultaneously creating new, more complex roles (e.g., robotics engineers or data analysts). Industries that embrace new technologies may experience significant job upgrading, which may induce a spatial sorting of high-skilled jobs to knowledge dense regions. This spatial sorting influences geographical distribution of jobs leading to a re-structuring of regional labor markets across and within industries.

Job polarization—the simultaneous growth of high-skill, high-wage jobs and low-skill, low-wage jobs, alongside a shrinking middle-skill job category—has emerged as a defining feature of labor markets in advanced economies (Barany and Siegel (2018); Goos & Manning, 2007). This shift has profound implications for the economic structure of both urban and rural areas, especially as automation and digitalization continue to transform industries. The consequences of job polarization are particularly pronounced in rural regions, where firms often face challenges in adapting to a knowledge-intensive economy. This paper examines how job polarization induces spatial sorting of jobs within industries and how this spatial sorting influences the ability of rural firms to remain competitive in a global economy, where competitiveness is increasingly dependent on knowledge advantages.

Job polarization typically leads to a bifurcation of skills in the labor market. While urban centers attract highly skilled knowledge workers, rural areas experience a hollowing out of middle-skill jobs. This raises questions about the capacity of rural firms to access the talent pool required to engage in knowledge-intensive industries. In many advanced economies, post-industrial regions are undergoing significant restructuring, moving from manufacturing-based to knowledge-based economies. This transformation often includes

both job upgrading and spatial sorting (Henning and Eriksson, 2021). Most studies in this field suggest that job upgrading induce spatial sorting and re-location of advanced jobs to knowledge dense urban regions, leaving rural regions with unadvanced low-wage jobs. Relatively few studies exploring the possibility that job sorting may speed up the process of job upgrading also in rural areas.

This study builds on preliminary empirical findings that reveal that it is the most skill-intensive jobs that show the strongest growth in both urban and rural areas. Thus, it seems like urban and rural regions are subject to similar underlying labor market dynamics, suggesting that cross-regional differences in job sorting mainly originate from cross-regional differences in industrial structures. Similar findings are presented by Henning and Eriksson (2021) who suggest that the increased polarization in Sweden is strongly connected with restructuring in previously manufacturing-intensive regions.

To further explore labor market dynamics and cross-regional distribution of jobs, this paper examines the interplay between spatial sorting and job upgrading at the level of industries. The aim of the study is to examine how rural firms are affected by spatial re-location of high-skilled jobs to knowledge dense urban regions. Most studies in this field emphasize the structural challenges faced by rural firms in adapting to the changing economic geography that the increase in job polarization brings about. While much of the focus tends to be on how urban areas benefit directly from agglomeration economies, there is a growing body of research exploring how such agglomeration can have spillover effects that promote job upgrading in rural areas, especially when industries in rural areas are linked to urban innovation networks (Henning and Kekezi, 2023; . This study contributes to this latter strand of literature examining the possibility that accessibility to knowledge for rural firms may improve as a result of geographical restructuring of jobs within their industry. As more activities that are key to industry development are located to dense knowledge areas, the innovative and absorptive capacity of the industry as a whole may increase, resulting in a faster job upgrading also in rural areas.

This hypothesis is tested using panel data on firms that includes information about location, occupations and education in the firms' labor force over a twenty-year time period. Preliminary results reveal that jobs are spatially sorted within industries and this sorting is associated with an aggregate job upgrading at the industry level. Results on causal relationships are, however, mixed at this stage of research. Nevertheless, this research contributes to the understanding of the economic dynamics of rural regions in the context of a polarized labor market. By examining the intersection of job polarization, technological change, and rural business competitiveness, this study provides new insights into the capacity of rural regions to transition to a knowledge-intensive economy.

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