Uncertainty Shocks, Firm Strategies, and the Regional Reconfiguration of Production Networks in Europe

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In a context of rising macroeconomic uncertainty and intensifying geopolitical tensions, production networks are undergoing profound spatial reconfigurations, driven by firms' adaptive strategies and heterogeneous territorial responses (Gong et al., 2022; Garretsen et al., 2025). While a growing body of micro-level evidence documents how firms react to global uncertainty and geopolitical shocks through reshoring, nearshoring, and friendshoring strategies (Yang & Chan, 2023; Blažek & Lypianin, 2024; Kalvelage & Walker, 2024; Kalvelage & Tups, 2024), as well as through network contraction dynamics (Basco et al., 2024), systematic evidence on country-specific uncertainty as a driver of production network reconfiguration remains scarce. Existing contributions typically focus on specific domestic shocks in specific contexts (Aoyama et al., 2024), rather than providing general evidence on whether and how home uncertainty affects (i) the reconfiguration of firms' affiliate networks and (ii) the geography of such reconfiguration across regions. This paper contributes to filling this gap by examining how domestic uncertainty shocks reshape European production networks through changes in the spatial structure of corporate ownership networks.

We address three research questions. First, how does domestic uncertainty influence firms' location strategies and, consequently, the regional reconfiguration of production networks among firms located in different European regions? Second, how and to what extent do these reconfigurations—both by domestic firms (outward reconfiguration) and by foreign multinationals (inward reconfiguration)—emerge across different spatial scales (intra-national vs. transnational) and in relation to different firm strategies and sectors? Third, which regional characteristics mediate the impact of uncertainty on firms' location strategies and, therefore, on the reconfiguration of inter-regional networks?

Empirically, we draw on micro-founded firm-level information from the historical ORBIS database (2007–2023), covering EU-27 NUTS-2 regions. We identify Global Ultimate Owners (GUOs), distinguish between domestic and foreign multinational groups, and reconstruct their affiliate ownership networks. We build two complementary bipartite ownership networks: (i) an outward network linking European regions to the domestic and foreign locations where region-based firms own affiliates, and (ii) an inward network linking domestic and foreign GUOs to the European regions where their affiliates are located. From these structures, we derive weighted measures of inward and outward regional centrality capturing changes in the size and spatial reach of affiliate networks over time. We further classify multinational configurations by combining GUO and affiliate NACE codes to distinguish investment motivations—efficiency-seeking, resource-seeking, market-seeking, and strategic-asset-seeking.

We combine these network measures with macroeconomic uncertainty indicators based on the World Uncertainty Index (WUI), capturing both global and country-specific fluctuations (Ahir et al., 2018). We estimate the dynamic effects of country-specific uncertainty shocks, controlling for global uncertainty, using a local projections framework (Jordà, 2005), distinguishing short-run adjustments from medium-run responses.

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We find that a country-specific uncertainty shock significantly shortens production networks, reducing both the size of affiliate networks and the number of regions involved. This pattern reflects two complementary mechanisms. On the outward side, domestic multinationals respond to domestic uncertainty by contracting their international footprint: they reduce foreign affiliates and reconcentrate ownership ties in home locations, consistent with reshoring/backshoring dynamics. On the inward side, host-country uncertainty shocks reduce regional attractiveness within Europe: foreign multinationals retrench by withdrawing affiliates from shock-hit regions, generating inward network contraction.

We further document substantial heterogeneity across strategies, sectors, and regional characteristics. Resource-seeking and efficiency-seeking configurations largely mirror the baseline contraction pattern, while market-seeking networks appear less susceptible to post-shock reconfiguration. By contrast, strategic-asset-seeking configurations exhibit the most persistent negative effects, contracting abroad without a compensating expansion at home. Sectoral results indicate that manufacturing and services—core GVC-related sectors—display foreign contraction without systematic domestic expansion, suggesting downsizing and closures rather than pure reshoring. Finally, regional characteristics mediate these effects: firms located in more upstream regions within GVCs are more sensitive to uncertainty shocks and reconfigure more strongly, yet the geography of reconfiguration tends to shift affiliate networks toward relatively more downstream regions.

Overall, the paper provides new evidence on country-specific uncertainty as a key driver of spatially uneven production network reconfigurations in Europe, highlighting the multi-scalar nature of firm adaptation and the role of regional positioning within global value chains in shaping network resilience.

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