Title:

チョークポイントはどこにあるか：企業間取引データを用いたサプライチェーン脆弱性分析

（英文） Where Is the Chokepoint? Mapping Firms' Exposure to Geopolitical Risks in Global Supply Chains

Abstract:

The pursuit of optimal resource allocation often results in the agglomeration and concentration of critical production capacities in specific regions of limited countries. These production hubs, when facing unpredictable external shocks, may turn into "choke points" of the entire economic system. Recent history offers some notable examples --the Lehman Shock, the Great East Japan Earthquake, and various forms of cyberattacks--where hyper-economic interdependence rendered production and financial systems highly vulnerable to single points of failure. With today's elevating geopolitical tension, such vulnerabilities may even be deliberately targeted through economic statecraft by political adversaries.

Against this backdrop, this paper proposes an alternative approach to quantify supply chain exposure to network concentration risk, by combining the information from input-output tables (IOTs) and firm-level transaction data. The principal contribution of this study is that our model is specifically designed for the analysis of economic security issues with a particular focus on firms' activities.

We analyzed a recent case of supply chain disruption in automobile industry caused by China's export control of Nexperia's semiconductors, particularly given its implication for the intersection of global production networks, economic interdependence, and geopolitical risk.