



Publication

Strategic formation of production networks

June 2026

Antoine Mandel, Van-Quy Nguyen, Bach Dong-Xuan, Strategic formation of production networks, Games and Economic Behavior, Volume 158, 2026, Pages 630-656, ISSN 0899-8256, <https://doi.org/10.1016/j.geb.2026.05.004>

Abstract

We provide a strategic model of the formation of production networks that subsumes the standard general equilibrium approach. The objective of firms in our setting is to choose their supply relationships so as to maximize their profit at the general equilibrium that unfolds. We show that this objective is equivalent to the maximization by the firms of their eigenvector centrality in the production network. As is common in network formation games based on centrality, there are multiple Nash equilibria in our setting. We have investigated the characteristics and social efficiency of these equilibria in a stylized version of our model representing international trade networks. We show that the impact of network structure on social welfare is firstly determined by a trade-off between costs of increasing process complexity and positive spillovers on productivity induced by the diversification of the input mix. We further analyze a variant of our model that accounts for the risks of disruption of supply relationships. In this setting, we characterize how social welfare depends on the structure of the production network, the spatial distribution of risks, and the process of shock aggregation in supply chains. We finally show that simple trade policies characterized by sets of links that are either prevented or catalyzed can be a powerful equilibrium selection device.



This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101132559.