

Abstract:

In this paper, we model the economy as a production network of competitive firms that interact in a general-equilibrium setup. First, we find that, at the unique Walrasian equilibrium, the profit of each active firm is proportional to (a suitable generalization of) its Bonacich centrality. We also determine consumer welfare at equilibrium and characterize efficient networks. Then we proceed to conduct a broad range of comparative-static analyses. These include the effect on profits and welfare of: (a) different types of distortions imposed on the whole economy or specific firms; (b) structural changes such as the addition of links and the elimination of nodes; (c) productivity and preference changes. We discover that the induced effects are in general non-monotone, depend on global network features, and impinge on each sector depending on the pattern of incentralities displayed by its input providers and output users. Furthermore, the inter-sector “linkages” underlying these effects can usually be decomposed – following the heuristic dichotomy proposed by Hirschman (1958) – into a forward (push) component and a backward (pull) one. Finally, we undertake some preliminary analysis of firm dynamics and illustrate that, when evaluating policies of support and shock mitigation from a dynamic viewpoint, the reliance on strict market-based criteria can be quite misleading in terms of social welfare.