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Employment agencies make the world smaller. Network analysis of labor mobility in Veneto

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Abstract

This essay investigates how Temporary Employment Agencies (TEAs) affect the topology of the inter-firm labor mobility network in the Italian region of Veneto.

Drawing upon a matched employer-employee dataset covering the universe of private dependent workers, individual job changes are mapped onto a directed graph where the vertices indicate firms and the links symbolize transfers of workers between firms. In order to appreciate the effects of the introduction of TEAs in 1997, a sequence of year networks is computed for the period 1991-2001.

TEAs are found to substantially improve labor market accessibility, as measured by the small-world properties of the network. In particular, the clustering coefficient increases by roughly 60%, while the average distance between network locations decreases by 25%.

A few TEAs rapidly become the most connected vertices of the system, also affecting the shape of the link distribution, that switches from a sharply truncated power-law to a distribution with an even heavier tail than a pure power-law. This evidence is interpreted in the light of a model of network formation based on tempered preferential attachment, in which the presence of TEAs reduces the importance of information and/or transaction costs relative to network centrality in the attachment (reallocation) decisions.

Overall, the study provides a novel representation of the transition from a system in which the matching process is completely decentralized to a system in which matching is brokered and hence, to some extent, centralized. In this way crucial information are easily disclosed to the policy maker, who might want to hamper the system from becoming excessively polarized, by limiting the emerging monopolistic power of some TEAs.

Keywords

Inter-firm networks, labor mobility, temporary employment agencies, information brokerage, small-world property, preferential attachment.