

Brazilian States in Global Value Chains: Spatial Production Systems Interpreted by Feedback Loop Analysis

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The underlying geographical structure of global value chains is the object of study in the paper. Our objective is elucidating this geographical structure, with special attention to the spatial interdependencies of Brazilian states, by means of the hierarchical feedback loop methodology. In essence, this methodology offers a detailed view of economic interactions, first by identifying the paths of influence across regions, and then by proposing a hierarchical extraction method to identify the paths in terms of their economic importance. The application in our paper differs from previous studies adopting this methodology as it takes into account value-added flows involved in the supply chains, rather than interregional gross trade. In the paper, firstly, background perspectives are presented on how the fragmentation of production processes has led to the reorganization of economic activities around the globe and within countries. Then, the hierarchical feedback loop methodology is applied to a novel country-state input-output table, covering the 27 Brazilian states and 39 foreign countries (and the rest of the world as another country), for the year 2008. Following the macro level application, the paper concludes with an analysis of feedback loops at sectoral level, increasing our understanding of the nature of the inter-regional dependencies. In our empirical results, the dominance of the Southeast region's states, especially São Paulo, in the spatial structure of the Brazilian supply chain networks, is verified. A great degree of production sharing among the Brazilian states is also observed. The results indicate that fragmentation within great regions is a major phenomenon for the Southeast and (secondary to the links with São Paulo) the South regions. For states elsewhere in the country, supply chain connections with the more developed states in Brazil overshadows production sharing with neighbouring states. In this way, the geography of production within Brazil seems to remain quite similar over the years. At global level, a spatial structure is observed where the flows linking major economies across trade blocks are dominant; more than 75% of international supply chain value-added flows link countries in different trading blocks. The fact that supply chains are well defined within blocks is only secondary to this structure. Therefore, our results support the observation that production fragmentation is a truly global phenomenon, not being merely circumscribed to trading blocks.