

An extension of Multilevel Indicators: Study of backward and forward linkages

Topic: Input-output and the network theory

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The use of linkages to compare productive structures and discover key sectors is an active focus of research in input-output field. Since the pioneering work of Chenery and Watanabe (1958), Rasmussen (1956) or Hirschman (1958), among others, several alternative means have been formulated for identifying the sectors with high multiplier effects on the demand and supply system (Simpson and Tsuki, 1965; Augustinovics, 1970; Strassert, 1968; Dietzenbacher, 1997; Hewings et al., 1988; Aroche-Reyes, 1996 and 2003; Morillas et al., 2008). In this paper, an extension of the called multilevel indicators (García et al., 2008) to the key sector determination is proposed. The multilevel indicators not only describe industries with a strong influence on the expansion of other sectors in an economy but the immediacy and the transmission capacity of their impacts. These three effects are derived from a demand model in previous works (García et al, 2008; García et al., 2011). We proposed extended the study to the supply framework. This objective allows us to evaluate the differences in the propagation of the backward and forward linkages and their role in the cohesion of the economic structure. The generalization of the framework will conduct to new assumptions about the weight of economic influence of sectors. A summarized measure of the sector influence in the demand and supply systems will be proposed.