

Industrial business expenditure for Research and Development in Mexico: Sectorial effects on added valued, employment and structural position patterns.

Topic: Policy Analysis in Developing Countries

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Business expenditure for research and development (BERD) is composed by current and capital expenditures to increase, systematically, the knowledge gained from research and/or practical experience and to use this knowledge to generate new products, processes and services, or to improve of substantial manner those already produced or installed. The effects induced by this expenditure on value added, employment and structural position patterns of the Mexico's industries are shown as results of the inter-sectoral flows via the demand or supply channels. The available data of BERD by sector are averages for 2002 – 2004 and 2007 – 2009; these periods are centered in the 2003 and 2008 because the Input-Output matrices are compatible for these reference date. The simulation and decomposition methods of the effects via demand or supply are used in order to describe and classify the sectors. The classification is done in terms of the relative importance of the sectors in the size of the BERD, the proportion of the induced value added and employment, and the role in the economic structure. The structural position of the industries, in terms of centrality, in betweenness or dominance, is located by using techniques of network theory applied to the corresponding adjacency matrix of the inter-sectoral flows. The results are ordered by the hierarchical role played by the sectors and are correlated to identify important sectors that permit to direct towards them investment in research and development through instruments of innovation policy.

Keywords: business expenditure for research and development (BERD), input – output matrix, added valued, employment, network theory, innovation policy.