Regional Value Chains at subnational level. An application to Santa Fe, Argentina.

Topic: Regional Input-Output Economics - I
Author: Gabriel Brondino
Co-Authors: Hernan Alejandro Roitbarg, Francisco Leiva, Joaquin Lucero

In recent decades, supply chain research has evolved significantly worldwide. Both internationally and nationally, countries have made significant progress in generating knowledge and policies directed at specific sectors, based on their better understanding of current production dynamics. In this sense, in Argentina, the investigation of production chains has also grown in recent years, especially with regard to understanding the chains of extraction of natural resources and their first processing, such as agriculture and food production.

The subnational dimension of the phenomenon has also grown worldwide, yet there is still little evidence of this in the country. However, studying it is essential, as it provides important information for decision-making, identifies relevant linkages for the subnational economy, improves the efficiency of industrial policies, and detects possible supply problems at the subnational level. This is especially important in light of the limited resources available to lower levels of government.

In other words, this research aims to assess the effectiveness of methods for studying the shapes of value chains at a subnational level, the pertinent connections, and the best ways to formulate demand and supply policies at the subnational level in Argentina.

In the research we work on this theme and focus on Santa Fe. Santa Fe province is one of the most important regions of Argentina in terms of agricultural and industrial production. Responsible for 5.4% of the country's total employment, it is consolidated within service activities, at the same time the sector is responsible for most of the provincial invoicing. The productive profile of the province is identified with a large proportion of services of low technological content with some relevance to high productivity activities and the presence of research and development, along with a secondary sector occupying a less relevant place for the local fabric. Although there are studies for particular industries such as the dairy sector, metallurgical industry and the manufacturing of agricultural machinery, there is no systematic and consistent study of all of them. In particular, this study focuses on the main regional chains of the province of Santa Fe in 2018, and the attempt to systematize them in integrated work.

The proposed methodology uses a regional Input-Output Matrix to study value chains at the sub-national level. We "regionalise" the national input-output matrix applying the simple location quotient method. The national input-output matrix is estimated by the OECD for 2018. The quotients are computed employing employment data from the household survey of the national statistics institute.

Second, we employ an indirect method to estimate the final demand vector as the difference between gross output and total intermediate demand. The vector of gross output is estimated by ECLAC and the Ministry of Economy of Argentina. Total intermediate demand is computed by multiplying the estimated regional matrix to the gross output vector

The results provide valuable insights into the potential for developing the region, highlighting strategic vectors around manufacturing, despite the province's limited industrial network. Despite the province's service-oriented productive profile, there is a diversity of sectors when it comes to characterizing their degree of integration. In particular, there are strongly integrated manufacturing

and service sectors in the centre of the province, with a preponderance of integrated services such as the research and development sector. In the south, there are strongly integrated primary, secondary, and tertiary sectors, most of which are manufacturing sectors such as the manufacture of metals and chemical products.

Overall, this research contributes to a more comprehensive understanding of regional economic dynamics in developing countries and demonstrates the potential of innovative methodologies to overcome data limitations.