

## **Subsystem analysis of the deindustrialization trends and their drivers in European countries**

Topic: (6.6) Structural change and dynamics (2)

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Over the last decades, technological progress and reorganization of production activities across industries and national borders has led to an overall decline in employment and value added shares of manufacturing in advanced countries. After the recent economic crisis, policymakers across the globe called for an "industrial renaissance" and took steps for a re-industrialization of their economies. On the other hand, outsourcing and continuous fragmentation of global value chains decrease the relevance of direct employment and value added effects of manufacturing for overall economic performance. Many activities, once taking part in manufacturing, are now supplied by businesses in the service sector and many high value added activities are being outsourced to companies outside the manufacturing industry. Thus, the analysis of deindustrialization processes calls for an approach that considers complex linkages among industries. Input-output analysis is a useful tool for capturing these indirect effects, which are not visible in simple statistics. The aim of the paper is to investigate the extent and the main drivers of the so-called deindustrialization in European countries over the last decades. The analysis is based on a subsystem perspective. It shows the proportion of the activity of each branch that comes under the individual subsystems. This allows us to reclassify any variable from a sector base into a subsystem base. For instance, it is possible to calculate the amount of labor required, both directly and indirectly, from sector  $i$  in order to satisfy the final demand in sector  $j$ . Several research questions are analyzed: Have the European countries become more deindustrialized considering both direct and indirect effects? Does the magnitude of the changes (direct vs. direct and indirect) differ? How did market services integrated into the manufacturing help to mitigate the deindustrialization effects? Is manufacturing more integrated at the subsystem level? What was the role of international trade and "tertiarization" in this process? The analysis is based on data from World Input-Output Database. The version released in 2013 covers the period from 1995 " 2011 including the socio-economic accounts with employment data. The new release from 2016 features data up to 2014 in a more detailed structure but socio-economic indicators linked to the data have not been published yet. So far, we can use the new release for the analysis of deindustrialization in terms of value added effects. The older data are used for the analysis of both value added and employment development.