

Labour productivity in Hyper-Integrated Subsystems in Brazil: 2000-2016

Topic: Classical IO applications: Industrial economics, Productivity and Efficiency

Author: JosÃ© Bruno Fevereiro

Co-Authors: Carlos Pinkusfeld Bastos

The aim of the paper is to analyse the sectoral evolution of employment and labour productivity in Brazil between 2000 and 2016. The analysis is realised by employing vertically (hyper-) integrated sectors (subsystems) perspective in the vein proposed by Luigi Pasinetti (1973, 1988). While the use of vertically integrated sectors within productivity studies has been relatively widespread (see, for example, Rampa, 1981; Momigliano and Siniscalco, 1982; Ochoa, 1986; Elmslie and Milberg, 1996; De Juan and Febrero, 2000; among others), the development of empirical measures vertically (hyper-) integrated sectors has only recently been developed in recent contributions from Garbelini and Wikierman (2014) and Brondino (2018). This is partially due to data availability constraints as the approach requires the existence Input-Output Matrices (in current and previous year prices), as well as compatible Gross Fixed Capital Formation Matrices, which tend not to be produced by National Statistics Office. Until recently the development of an analysis at this level was unfeasible for the case of Brazil. However, this scenario has changed due to recent contributions by Passoni and Freitas (2018), and Freitas and Miguez (2018), which provide I-O and GFCF Matrices in current and previous year prices at 42-sector disaggregated level. This approach is useful as it is able to capture the interdependent nature of technical change and of the productive process, an insight that partial industry measures of productivity and traditional sectors activity-based classifications cannot adequately deal with.

Results highlight that, in the upswing (from 2002 to 2008) the share of Manufacturing VIS in employment increased 2 times more than the share of employment in manufacturing sectors of activity. In the downturn (after 2010), while the share in employment of Manufacturing VIS was falling steadily since 2010, employment share of manufacturing sectors of activity only began to fall from 2013 onwards.

Regarding labour productivity, Manufacturing VIS recorded higher labour productivity growth than partial measures of the corresponding manufacturing sectors of activity, such as physical output per worker and value added per workers. While the opposite trend has been observed in Services. This highlights that much of the gain in efficiency in the production of manufactured final demand goods in the period occurred in indirect service activities supplying inputs to the production of manufactured goods. Thus, the idea that services can replace manufacturing as an engine of growth in Brazil may be disregarding the interdependent nature of the economic sectors.