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Global value chains and productivity gains: a cross country analysis

The main aim of this article is to assess the implications of global value chains (GVC) on sectoral productivity growth from the international perspective. Our panel data analysis covers 40 countries, 35 industries in the period 1995-2009.

In the first part of the article, we discuss measurement of a sector's position in GVC through the decomposition of gross export into its components following the methodology of Wang et al. (2013). Specifically, this method can be used to measure a sector's position in an international production chain that varies by sector and country, and to quantify revealed comparative advantage that takes into account both domestic and foreign components as well as double counted terms in official trade statistics. We apply Wang et al. (2013) decomposition to global input-output tables (World Input Output Database - WIOD) and obtained detailed indicators of the degree of involvement of a given sector from a given country in the process of production fragmentation.

Second part of the article is dedicated to empirical analysis in which we relate previously calculated indicators of GVC to sectoral productivity (TFP or/and labor productivity). We estimate augmented production function in which GVC indicators are treated as potential technology shifters, i.e. as determinants of the technological change term.

On the bases of theory, it is expected that an increase in internationalization through participation in GVC should translate into productivity gains (see e.g. Amiti and

Wei 2006, Cheung et al., 2008). The basic argument considering this positive linkage is related to the firm’s relocation of least efficient production stage in order to concentrate on more productive core activities. Further, firms can take advantage directly or indirectly (through their suppliers) of cheaper, better quality or more variable intermediate inputs and components. On the other hand, production fragmentation requires reconstruction of company’s activity and productivity gains might be materialized in the long run as in the short-term they can be limited due to the additional costs associated with the coordination of distributed stages of production (Michel and Rycx , 2014).

Key words: global value chains, TFP, panel data analysis

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