Global labour requirements in the world economy: a GVC decomposition approach

Topic: Input-Output Analysis: Trade and Global Value Chains Policies - V
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With the second globalisation unbundling (Baldwin, 2016), productivity became an international concept. To internalise inter-country spillovers through input linkages, a productivity measure should be defined at the global value chain (GVC) level, rather than at the level of individual industries.

In this context, labour productivity would be the ratio of final output to employment across the entire inter-country value chain. Its reciprocal, i.e. the labour requirements per unit of final output, allows to capture the labour saving trends taking place in the world economy.

The main research question of our paper is: what have been the different channels that contributed to the dynamics of global labour saving trends in the â€˜hyper-globalisationâ€™ period (1995-2009)?

To answer this question, our paper identifies different channels contributing to global saving of labour requirements by means of an input-output-based decomposition, taking the GVC as its granular unit of analysis. In particular, *within* each GVC we distinguish whether a reduction in labour requirements was due to direct labour saving trends or to a geographical/sectoral reorganisation of the GVC. *Across* countries *within* a global sector, we identify the contribution of changes in countries' final output market shares to global labour requirements (a competitiveness effect). Finally, *across* global sectors, we identify the contribution of changes in sectoral final output shares to global labour requirements (a global demand shift effect).

A key novelty of our paper is that it allows to capture the interplay between different factors -- direct labour saving, GVC reorganisation, competitiveness and global final demand shifts -- explaining the evolution of labour productivity at a global scale, for a period of notorious expansion of international production fragmentation in the world economy.

As regards the dataset(s) used, given that we wish to capture volume effects, we use the 2013 release of the World Input-Output Database (WIOD) (Timmer et al., 2015) for period 1995-2009, estimating labour sourced from the rest of the world (ROW) region, which is not included in the Socio-Economic Accounts (SEA) of WIOD. We estimate it using data from ILO modelled estimates, together with the detailed structure of inter-industry employment of selected developing countries, following WIOD methodology. Moreover, we use gross output vectors in current and past-year prices of WIOD Dec-2014 release to build a chain-linked price (and exchange rate) index, to express all magnitudes in constant USD. Finally, as preferred for studying labour productivity, labour input is measured in hours worked.

Our preliminary results suggest that, within the GVC, input sourcing offshoring (i.e. GVC reorganisation) had a negative effect on productivity, as GVCs sourced inputs (and hence, labour) from locations and industries with relatively lower (direct) labour productivity (thereby increasing countriesâ€™ domestic productivity but decreasing it along the inter-country value chain). However, this negative effect was offset by saving of direct labour requirements. Moreover, the competitiveness effect reflected a notorious shift in GVC labour distribution from the global North to the global South.

References:

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Timmer, M. P., Dietzenbacher, E., Los, B., Stehrer, R., and De Vries, G. J. (2015). An Illustrated User Guide to the World Inputâ€“Output Database: the Case of Global Automotive Production. Review of International Economics, 23(3):575â€“605.