

The Effects of Automation on Reshoring Activities

Topic: Classical IO applications: Trade and GVCs

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In this paper we identify the industries where the higher usage of industrial robots in the production process may trigger reshoring activities. Backer et al. (2018) stated that there is a tendency that the pace of the growth rate of global value chains is slowing down in the last few years. This is caused by reshoring activities which are triggered by the increased automation. Krenz-Prettner-Strulik (2018) found a relationship between reshoring and automation. Based on their estimates, an increase by one robot per 1000 workers is associated with a 3.5 % increase in reshoring activities within the manufacturing industry. The main aim of the paper is to identify the effect of automation on reshoring activities in manufacturing industries controlling for other potential sources of reshoring. The analysis is based on World Input-Output Database, KLEMS 2017 Database, and data on the operational stock of industrial robots from International Federation of Robotics (IFR). IFR database contains data provided by nearly all industrial suppliers worldwide that cover production, import, export and domestic installations or shipments of industrial robots by industries. WIOD covers 43 countries and 56 sectors for the years from 2000 until 2014. The newest data were released in 2016. Socio-economic accounts complementing these data were released in 2018. These data provide appropriate information about the compensation of employees, number of employees, labor and capital compensation and other indicators that will be used as covariates in regression analysis. KLEMS database contains more detailed data about socio-economic accounts for European countries. It involves data about output, capital flows that are broken down into values, volumes and it also covers data about growth rate of value added and labor productivity (value-added per hour worked and per person employed).