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Organizational capital and global value chain participation: strengthening productivity growth in the digital age

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Widespread processes of globalization of value chains have impacted on productivity in advanced and emerging countries. Criscuolo and Timmis (2017) identify several channels through which GVCs can help enhancing productivity. First, there is the classical argument of gains from specialization: in a value chain firms can specialise in the activities (the analogous to product specialization in the classical literature on trade liberalization) in which they are relatively more efficient and outsource the others. A second channel through which participation in GVCs can affect productivity is by allowing firms to have access to a larger variety of cheaper and/or higher quality and/or higher technology imported inputs. Third, GVCs can facilitate knowledge spillovers allowing interaction of domestic firms with foreign multinational firms. Finally, similarly to the case of international trade, GVCs can give firms access to larger markets and increase competition, thus favoring the development of the most productive firms and inducing the exit of the least productive ones.

Empirical research in support of the theoretical predictions linking GVCs to productivity is however limited. Contributions include older strands of work focusing on benefits to countries that initiate offshoring (Feenstra and Hanson 1996; Egger and Egger 2006; Daveri and Jona-Lasinio 2008; Amiti and Wei 2009; Winkler 2010), but also recent efforts that analyze the impact of vertical specialization on countries participating in GVCs (Formai and Vergara Caffarelli 2016, Kummritz 2016, Taglioni and Winkler 2016; Constantinescu et al., 2017). Despite the numerous channels identified in the literature by which GVC participation can positively affect productivity growth, the empirical evidence is mixed.

But under which conditions GVC involvement increases productivity? And are there differences in the impact based on the extent of sectoral digitalization?

In this paper we argue that the gains in participation from GVC will be highly asymmetric between countries and sectors depending on investment in organizational capital and the extent of industry digital intensity.

We build our hypotheses referring to an extensive theoretical and empirical literature documenting that the adoption of information technologies (IT) requires changes in firms’ organization (Brynjolfsson and Hitt, 2000), and that it induces higher productivity gains in better-managed firms (Garicano and Heaton 2010, Bloom et al. 2018), as management practices and IT are complements. We extend this literature to the study of the productivity impact of GVC participation by testing

whether higher investment in organizational capital magnifies the productivity gains from backward participation in GVC and whether, due to the complementarity between organizational capital and IT, the gains are larger in high digital intensive industries.
The empirical analysis is developed adopting an augmented production function framework and testing our model using industry data from EUKLEMS, WIOD and INTAN-Invest on a sample of eleven European economies plus the US over the period 1998-2017. .
Our main findings support the existence of a significant impact of backward participation in GVCs on productivity growth which varies with the extent of investment in organizational capital and industry digital intensity. More specifically, our results suggest that managerial capabilities are strategic factors to extract value from participation in global value chains, especially in high digital intensive sectors.

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