

Global value chains and skill complexity: Demand for skills by foreign and domestic firms in the integrated periphery

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The views and results presented are those of the author and do not necessarily represent the official opinions of the National Bank of Slovakia.

Things to cover

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Global Production Networks

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Globalization and digitalization has led to intensification of international division of labor, chiefly driven by multinational corporations (MNCs) through the global production networks (GPNs) (Henderson et al. 2002)

Following the collapse of the CONECON block, the Central and Eastern European countries (CEECs) have reintegrated into global economy through GPNs

Specializing in the low value-added stages of the respective value chains, the nature of integration into GVCs has turned CEECs into an 'integrated periphery'. (Pavlínek, 2018)

The integrated periphery

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CEECs have developed dual economic structures with large gaps between domestic and foreign sectors. Foreign-controlled companies generate much higher value added than domestic companies.

Furthermore, foreign-controlled companies are technology leaders with most of the innovation, and research and development (RD), concentrated in foreign-controlled sectors (Knell, 2017).

The importance of the links between foreign-controlled innovation leaders, domestic companies and institutions in bringing industries and countries closer to innovation frontiers has been recognized also in the economics of innovation and learning (Kravtsova and Radosevic, 2012).

CEECs in the integrated periphery

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Foreign control and integration into value chains

	Import content of exports	FDI stock		Foreign control of enterprises	
		Inward	Outward	Value added	Employment
Slovakia	48.19	54.9	3.3	48.1	28.5
Czechia	46.61	65.1	11.6	43.3	27.6
Hungary	47.31	61.2	20.0	51.4	25.7
Poland	32.98	42.9	5.4	36.8	29.3
Germany	25.35	24.2	40.9	24.8	11.2
UK	21.87	57.5	58.1	28.0	19.0
France	26.27	31.8	52.8	16.4	11.0

Gaps in the literature

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However, despite their importance in the theoretical frameworks linking GPNs with development, empirical evidence on differences in skill use in companies remains weak.

Research on GPNs in integrated peripheries tends to focus on (the lack of) the transfer of skills and know-how and the linkages between firms, but there is little evidence on what can be transferred as far as the skills used in companies are concerned (i.e. the skill gap).

Empirical strategy

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$$P(y_{si}) = f(\text{capitalcity}, \text{ownership}, \text{companysize}, \text{ownershipcompany.size}, \text{education}, \text{sector}, \text{year})$$

Data: Complete dataset of job vacancies posted on the Profesia portal 2011-2017

Unit of analysis: Job vacancy

Method: Multivariate logistic regression (LOGIT)

Dataset

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Profesia is clearly the dominant job board on the market, over 70 per cent share, used in several published papers (e.g. Kureková-Mýtna et al., 2016; Fabo et al. 2017)

For each vacancy we have:

- Occupation in own classification (which we recoded to ISCO)

- Sector (which we recoded to NACE rev. 2)

- Education requirement

- Location

- Skill requirements selected by the employer from a list of 100 + skills, which we recode to basic digital skills (work with computer), office digital skills and advanced (programming, databases...)

- Firm identifier (IČO) from which we determine firm size and ownership using admin data

Dataset

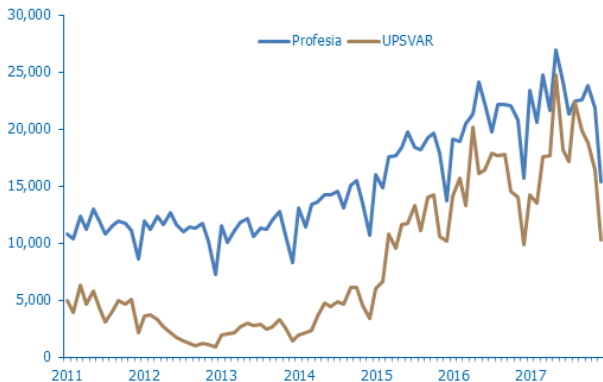
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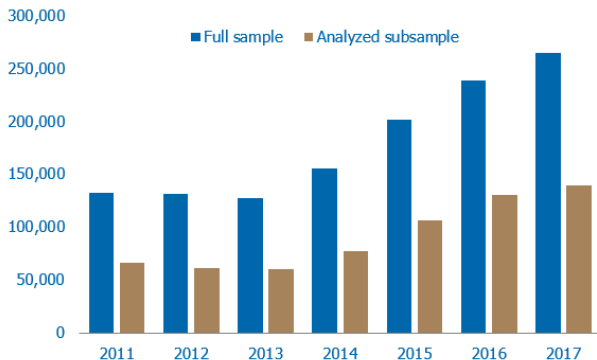
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Dataset

Altogether we have 1.2 million observations but use only half. Removed jobs advertised by recruitment agencies and public sector jobs.



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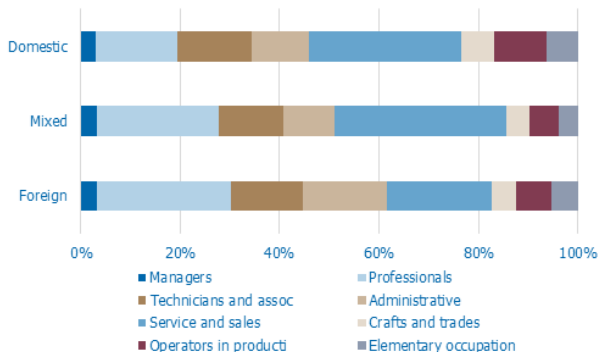
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Job complexity

Foreign-owned companies tend to offer more complex jobs than domestic owned ones



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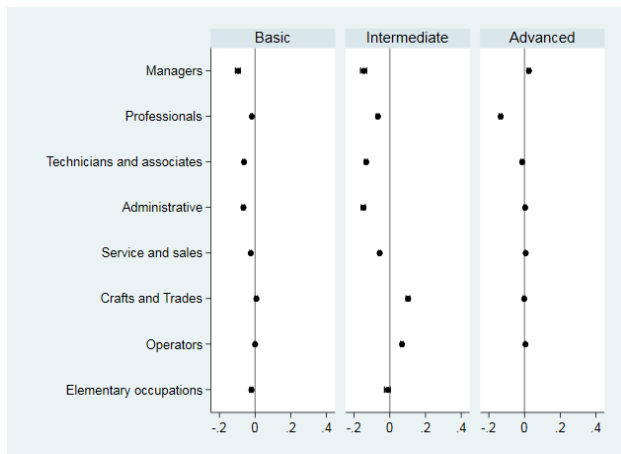
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Digital skills requirements

Marginal effect at the mean for vacancies posted by foreign owned companies compared to domestic companies



Time dimension

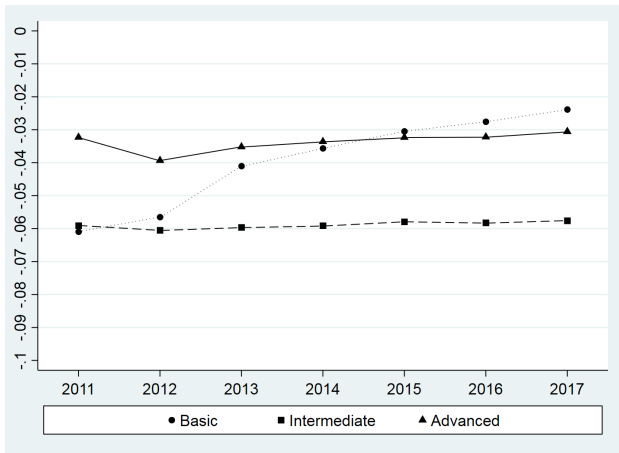
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Findings

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Foreign-owned firms are the ones which generate more complex and skill-demanding jobs (expressed via the ISCO classification) and thus, presumably, also create greater values added

At the same time, for comparable jobs, domestic firms are the ones more likely to seek digitally-skilled workers. This possibly reflects the limited set of activities being performed in local branches of MNCs

An exception to this rule are blue collar jobs, in which foreign-owned companies are the ones that are more prone to require digital skills. This is specifically the case for skilled blue collar work (craft and trades occupations). This potentially suggests some technology transfer at the level of production itself.

Results stable in time

Policy implications

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Firstly, the considerable public resources invested in attracting FDI to Slovakia might lead to some modern manufacturing jobs, but they are unlikely to contribute much to the digitalization of the Slovak economy. It might be prudent to consider shifting some resources to supporting the domestic RD sector.

Secondly, the co-existence of higher wages paid by foreign-owned companies, with the digital skill acquisition being concentrated in domestic firms, might result in a misallocation of human capital.

Thirdly, the concentration of the most gifted workers in MNCs, where their engagement with digital technologies might be limited, means that these workers might not be accessible for digitally more advanced domestic companies