Economic restructuring and foreign direct investments as drivers of regional labour productivity growth in the Visegrad countries

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Extended abstract

Abstract

The economic development model of Central and Eastern European countries has faced significant challenges, particularly after the COVID-19 crisis and subsequent energy and supply chain disruptions of the early 2020s. However, early warning signs of stagnating labour productivity in specific regions were already evident in the preceding decade. These challenges vary not only between countries but also among sub-national territorial units, strongly influenced by sectoral specialization.

Through an empirical analysis of sub-national labour productivity growth and its sectoral decomposition, this study finds that increasing reliance on foreign direct investment alone cannot resolve efficiency issues. While economic restructuring played a key role in driving labour productivity growth in the early 2010s, its broader positive effects have diminished over time. Our findings highlight a fundamental trade-off faced by non-metropolitan regions: improving labour productivity often comes at the cost of reduced domestic value-added content. Addressing this challenge requires targeted investment policies and human capital strategies that foster both productivity growth and higher local economic integration.

Keywords: FDI, Labour productivity, Central and Eastern Europe, Economic catching-up, Gross value added

JEL codes: R11, R58, F21, O25, P52

1. Introduction

In the early 2020s, multiple global crises have unfolded, affecting European economies to varying degrees. Beyond the core economies struggling with stagnation, peripheral economies are also prone to these adverse effects because of their vulnerability due to their high external dependence. Central and Eastern European (CEE) economies can be described as dependent market economies (Nölke and Vliegenthart 2009), which is a distinct, specific variety of capitalism, because their economic transition led to strong FDI-dependency, foreign bank dominance and external control (see Gál and Lux 2022). A part of this higher exposure might stem from the economic structure of the CEE economies, which are part of the so-called Central

European Manufacturing Core, i.e., an area where Europe's manufacturing activity is increasingly concentrated (Stehrer and Stöllinger 2015). Although a remarkable economic convergence has taken place over the past two decades in this area, these countries are still not exempt from the challenges of the middle-income trap (Győrffy 2022), and the regional development trap (Diemer et al. 2022). This paper focuses on the regional aspects of economic restructuring in the Visegrad countries and intends to reveal the factors that contributed most to the labour productivity performance in a regional disaggregation.

Since the mid-2010s, demographic challenges, including population ageing and skilled labour migration from East to West have made labour markets tight, especially in CEE countries. As a consequence, the extensive increase of labour supply can no longer be a source of economic growth. Both labour and raw materials have become scarce and expensive, but, unfortunately, the growth model followed by CEE countries has led to specialisation in economic sectors that are highly dependent on these resources. In order to bring these economies onto a sustainable growth path, more emphasis should be placed on the intensive growth, i.e., the increase of labour productivity, together with increasing domestic value added of production. This lies upon innovation and human capital investments, for which the availability of skilled labour and high-quality jobs are key factors. There is also a need for a developed entrepreneurial ecosystem (Komlósi et al. 2019; Márkus, Rideg 2021) that makes the use of human resources more effective thereby contributing to productivity improvement.

Based on these considerations, our study investigates the following research questions: How did labour productivity change as a result of structural change in the different regions in the Visegrad countries? What was the productivity effect of FDI inflow on the sub-national level?

2. Data and empirical strategy

The aim of the research is twofold: first, we investigate the changes of economic structure in the four Visegrad countries in a comparative manner at the sub-national level over the period after 2010 with the help of exploratory statistics. Second, we investigate the relationship between FDI and labour productivity change in a regional disaggregation. (In this preliminary version of the paper, we use the share of the manufacturing sector as a proxy for the FDI investments.)

Our research questions are to be answered on the basis of an empirical analysis of NUTS3 regional economic data for the Visegrad countries. To this end, we use sectoral employment and gross value added (GVA) data collected from Eurostat's database. In the case of Poland, GVA data are only available in less detailed sectoral aggregates at NUTS3 level, but detailed sectoral breakdowns are reported at the NUTS2 level. Therefore, we follow the approach of Dobrzanski et al. (2024) and consider NUTS2 level data for Poland and NUTS3 data in the other three Visegrad countries. For Poland and Slovakia, data are only available until 2021, so the time horizon of the analysis is 2019 - this gives us a picture of how the Visegrad region's catching-up process has evolved between 2010 and 2019, in a period of a favourable global economic environment.

We measure the catching-up of the regions primarily in terms of the evolution of GVA, and decompose the change in GVA into its different components: we examine to what extent the regional increase in GVA over the period was due to an improvement in employment and to what extent to an improvement in the labour productivity of the employed.

Changes in labour productivity can also be broken down into components according to whether the improvement in labour productivity in a given region occurred because labour productivity within different sectors improved or because labour flowed to sectors of higher productivity or increasing productivity with unchanged labour productivity. This question can be answered by shift-share analysis, during which we follow the procedure outlined in OECD

(2018, p.28). The first part in the decomposition represents the effect of the change in labour productivity within each sector, the second element represents the static effect of the structural change in the economy, and the last element represents the dynamic effect of the structural change.

3. Preliminary empirical results

The regional distribution of foreign direct investments is highly concentrated in the capital cities in Poland, Czechia and Slovakia, non-capital areas having a minor share. The capital city concentrated 64%, 47%, 42% and 68% of the total domestic FDI volume in Czechia, Hungary, Poland and Slovakia, respectively. Concentration is on an increasing trend in Czechia, a decreasing trend in Hungary and it is stagnating at a high level in Slovakia. In Poland, we cannot see a clear trend. The structural composition of FDI also shows marked regional differences, because knowledge-intensive service-oriented investments are concentrated almost exclusively in the metropolitan areas, while in non-metropolitan regions the manufacturing investments dominate.

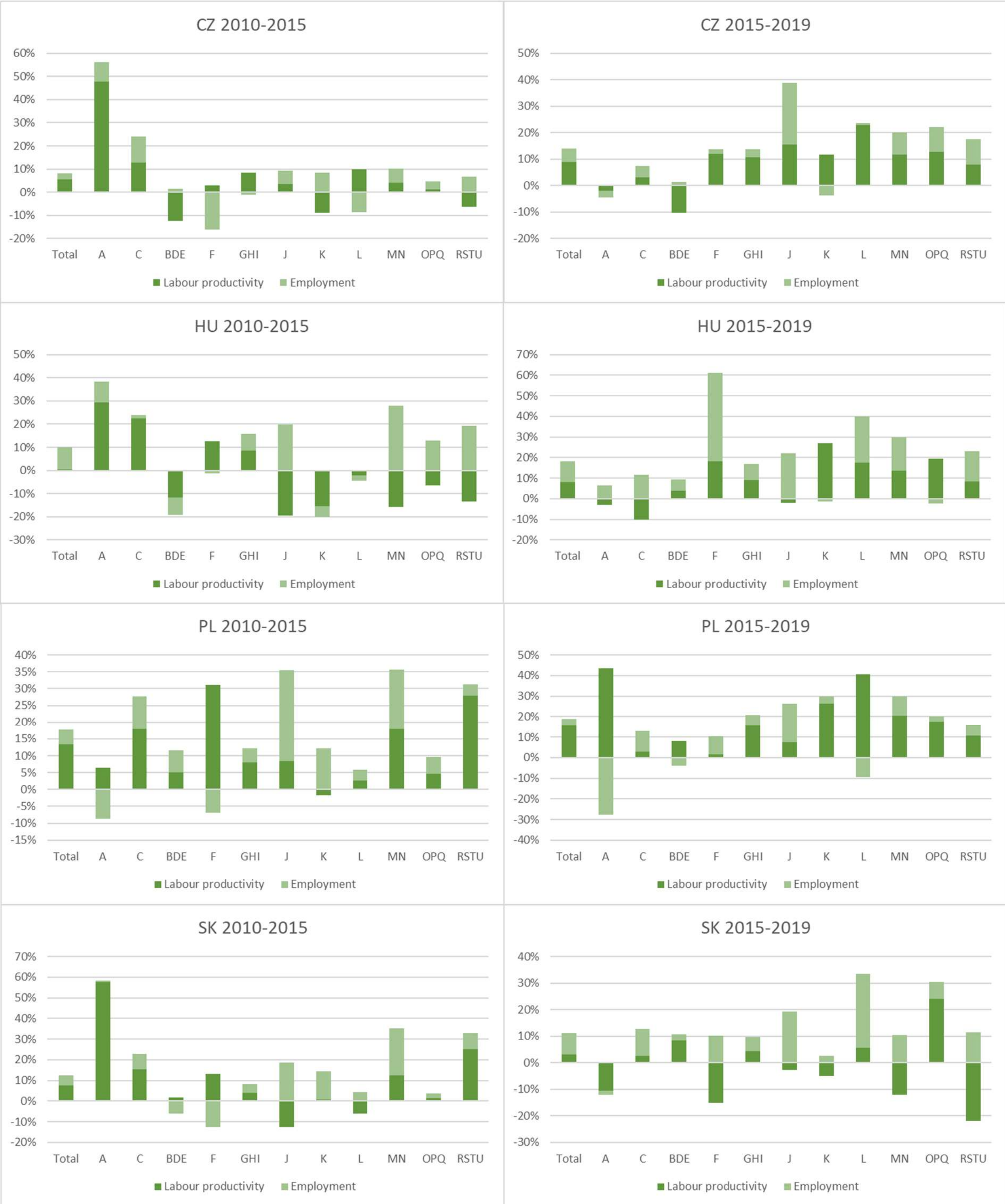
After the crisis, the growing emergence of services in global foreign trade became a general phenomenon with IT and other financial and business services increasingly entering international trade alongside traditional services (tourism, contract work, transport). The growth rate of services exports has recently been more stable than that of goods exports, as demand for services is less dependent on the cyclicality of the economy. The Visegrad countries' economy as developed economies have a high degree of tertiarization, but the share of the industry sector (dominantly manufacturing) in GVA and employment is high (between 20 to 30 percent) compared to the Western European countries, where it is mostly below 20%.

The export of goods was between 41 and 80 percent of the GDP in 2019 in the Visegrad countries (the lowest in Poland and the highest in Slovakia), the import of goods was comparably high, therefore, the trade balance of goods could not contribute positively to the aggregate GDP growth in these countries excepting Czechia. However, the export of services exceeded the import of services in all countries, therefore, the trade balance of services is positive, and so is their contribution to GDP growth. Based on these facts, our perception is that the manufacturing export-oriented economic structure is not beneficial for long-term, sustainable economic growth. However, a specialisation on higher value-added services would require targeted policy efforts to increase human capital endowment.

The decomposition of GVA change to the contribution of employment change and labour productivity change

The growth of gross value added (GVA) can be decomposed into the growth of employment and the growth of GVA per employee. Between 2010 and 2015 the GVA change was almost entirely attributable to the growth of employment in Hungary, while the contribution of employment and productivity growth was more balanced in the other three countries. Poland advanced in productivity during both periods. Between 2015 and 2019, the contribution of the productivity growth started to increase, but it has still remained lower in Slovakia and Hungary. With a focus on sectoral differences, our calculations show that while the productivity improvement was observed in the manufacturing sector between 2010 and 2015, it was the sector where it decreased the most between 2015 and 2019. Presumably as a result of the large-scale investments, the highest growth performance was measured in construction and in real estate activities.

Figure 1. The contribution of employment change and labour productivity change to GVA growth in the Visegrad countries in a sectoral breakdown



Source: own elaboration based on Eurostat data

A shift-share analysis of labour productivity change

Next, we focus only on the change of labour productivity and the decomposition thereof based on a shift-share method as presented by OECD (2018). The results of our calculations show that between 2010 and 2015, the structural effect was relatively minor and even negative in certain regions, while the dominant source of labour productivity change was the within-sector change. This means that the economic restructuring was unfavourable for productivity improvement in almost all regions.

After 2015, the structural change effect has turned into positive in the majority of regions, but the intra-branch effect still dominated. Our opinion is that the long-run potential of intra-branch labour productivity growth is weaker compared to the potential of the structural effect, therefore, more emphasis should be placed on those FDI that contribute to the domestic value added of production.

Figure 2. The contribution of within-sector productivity growth and structural change to overall labour productivity growth in the Visegrad countries' regions between 2010 and 2019

Source: own elaboration based on Eurostat data

4. Conclusion

Our research arrived at the conclusion that large-scale FDI in the manufacturing sector proved to be a driver of labour productivity after the global financial and economic crisis, but the benefits of it were much weaker in the second half of the decade. Economic growth were stronger in those areas that were specialised on higher value-added sectors. The dominant part of labour productivity growth occurred in the form of within-sector growth, at the same time, the growth effect of structural reallocation was weak in the majority of regions. Poland is an outlier in the sense that it could maintain a steady labour productivity growth throughout the whole period and in all regions. We conclude that the manufacturing export-oriented economic model in its present form is not suitable to keep the economy's internal income-generating capacity on a sustainable path.

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References

Diemer, A., Iammarino, S., Rodríguez-Pose, A., Storper, M. (2022) The Regional Development Trap in Europe, Economic Geography, 98(5), 487-509, DOI: 10.1080/00130095.2022.2080655

Dobrzanski, P., Bobowski, S., Clare, K. (2024) Left-behind places in central and eastern Europe—labour productivity aspect, Cambridge Journal of Regions, Economy and Society, 17(1), 137–162, https://doi.org/10.1093/cjres/rsae001

Gál, Z., Lux, G. (2022) FDI-based regional development in Central and Eastern Europe: A review and an agenda, Tér és Társadalom, 36(3), 68–98. https://doi.org/10.17649/TET.36.3.3439

Győrffy, D. (2022) The middle-income trap in Central and Eastern Europe in the 2010s: institutions and divergent growth models. Comparative European Politics, 20, pp. 90–113.

Komlósi, É., Páger, B., Márkus, G. (2019) Entrepreneurial Innovations in Countries at Different Stages of Development Foresight and STI Governance 13(4): 23–34. https://doi.org/10.17323/2500-2597.2019.4.23.34

Márkus, G., Rideg, A. (2021) Understanding the connection between SMEs' competitiveness and cash flow generation: an empirical analysis from Hungary, Competitiveness Review, Vol. 31 No. 3, pp. 397-419. https://doi.org/10.1108/CR-01-2020-0019

Nölke, A., Vliegenthart, A. (2009) Enlarging the varieties of capitalism. The emergence of dependent market economies in East Central Europe. World Politics, 4., 670–702. doi:10.1017/S0043887109990098

OECD (2018) Compendium of Productivity Indicators 2018. OECD, Paris, https://doi.org/10.1787/pdtvy-2018-en

Stehrer, R., Stöllinger, R. (2015) The Central European Manufacturing Core: What is Driving Regional Production Sharing? FIW-Research Reports 2014/15 N° 02, February 2015