

# Exploring firm performance in Central and Eastern European regions: a foundational approach

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## Abstract

Economic development in post-transition countries is dominated by the performance of capital cities, although second-tier cities are also important drivers of development. However, peripheral regions struggle with problems of adaptation and response, often leading to brain drain and economic decline. Industrial strategies highlight those tradable sectors of the economy that favour leading edge KIBS firms and advanced manufacturing, while neglecting the residentiary economy that is more sheltered from competition and provides jobs in local production and services sectors. Our research is inspired by the burgeoning literature of the ‘foundational economy’ approach to economic development, focusing on mundane economic activities providing essential goods and services, and we investigate the differences of economic performance across the NUTS3 regions in selected CEE countries. We study regionally aggregated, firm-level financial and employment data including sectoral classification of the companies with 10+ employees. Our position is that a well-functioning foundational economy is necessary for the whole local economy to work efficiently in the long run. Moreover, increasing productivity in the foundational economy should lead to more regionally balanced growth than an exclusive focus on the ‘frontier firms’ that are highly concentrated spatially as the regional productivity gap in the case of certain foundational activities is not necessarily large.

**Keywords:** foundational economy, regional policy, firm-level data, labour productivity, Central and Eastern Europe

Received June 2023, accepted August 2023.

## Introduction

The decade after the global financial crisis and recession has brought new economic development challenges for Central and Eastern European (CEE) countries and their sub-national territorial units. The slow growth of the post-crisis recovery period was replaced by a high-pressure economy in the mid-2010s, which was brought to a halt by the 2020 coronavirus crisis. Against the backdrop of adverse demographic trends, including a shrinking and ageing population and the ensuing labour market tightness, CEE countries can no longer rely on extensive employment growth as a prerequisite for long-term economic growth, instead, productivity improvement should be a priority. Despite the fundamental role of foreign investments in the market

and global value chain integration of the CEE macro-region and the associated economic growth and productivity gains, FDI by itself is insufficient to ensure sustained catching up (GÁL, Z. and Lux, G. 2022). The CEE region is not homogeneous in this respect, since the Baltic States, Slovenia and Czechia have shown a solid convergence performance in terms of per capita GDP relative to the EU average and the Human Development Index. This heterogeneity is partly explained by the different institutional environment and the divergent growth models followed by the countries of the macro-region. As a result, the countries are not at the same stage of progress towards the ‘high road’ of competitiveness (MOLNÁR, E. *et al.* 2020), while some of them may overcome the so-called middle-income trap (see GYÓRFFY, D. 2022; MÁTYÁS, L. 2022).

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Due to the post-1989 privatization or dissolution of potential national champions and the weakness of home-grown mid-sized firms, the FDI-driven model of so-called dependent market economies has no viable alternatives (NÖLKE, A. and Vliegenthart, A. 2009). Foreign multinational enterprises are at the forefront of market-driven reindustrialization, the patterns of which are highly heterogeneous across the regions (NAGY, B. *et al.* 2020). The weaknesses of FDI-driven models (relying on low labour costs, skilled labour, tax advantages and proximity to the West) are manifest in the absence of domestic innovation-leading companies and headquarters, compounded by a shrinking working-age population (BODNÁR, G. *et al.* 2022). The economic development of post-transition countries is heavily dominated by the performance of their capital cities, although second-tier cities, as growth poles, are also important drivers of development. The presence of high-quality residential environments, improved connectivity, high-skilled occupations and increasing populations exert a positive impact on the employment dynamism of regions and cities outside the capital. However, regions left behind by economic transformation (WERESA, M.A. 2017) often struggle with problems of adaptation and response, leading to brain drain, population outmigration and economic decline. This tendency is reinforced by industrial strategies' overwhelming focus on the tradable sectors of the economy, favouring leading edge KIBS firms and advanced manufacturing, while conspicuously neglecting the residentiary economy (see LEAVER, A. and WILLIAMS, K. 2014), a sector relatively sheltered from competition and a source of locally anchored production and services jobs acting as important 'stabilizers'.

Our research is inspired by the burgeoning literature on the 'foundational economy' approach to economic development (RUSSELL, B. *et al.* 2022), i.e., mundane economic activities providing essential goods and services (see BENTHAM, J. *et al.* 2013), focusing on economic performance across NUTS3 regions in four CEE countries, namely, the Visegrád

Four (SCOTT, J. 2021) with Czechia, Hungary, Slovakia and Poland. We consider the inclusion of a foundational approach in development policy to be highly beneficial in the CEE economic context, which is burdened by a dualistic economic structure (NAGY, Cs. *et al.* 2020), excessive spatial disparities and increasingly left-behind places, with no apparent signs of improvement in this respect over the last few decades. The foundational approach breaks with the singular notion of 'the economy', operating with multiple economies and zones of activities that show very different features. In line with the literature, our article starts from the view that a strong foundational economy can strengthen the cohesion of urban and local economies, furthermore, it can have a higher relevance for peripheral, disadvantaged regions, saving them from the circular and mutually reinforcing spiral of deterioration (BOSÁK, V. *et al.* 2023; MARTYNOVICH, M. *et al.* 2023).

The novelty of our research lies in exploring the role of the foundational economy in the CEE region based on firm-level data in a regional aggregation, as these aspects have not been scrutinized in the CEE regional science literature before. Given that the Visegrád countries are part of the Central European manufacturing core, the macro-region follows a different path towards the tertiarization of the economy relative to the Western European economies. Consequently, the weight and role of the foundational economy in the CEE region might show some specific features compared to those identified in the existing literature. In the next section we summarize the theoretical considerations underlying the research, then the empirical strategy will be introduced. In the fourth section empirical results and the discussion are presented and the last section concludes.

### Theoretical considerations

In their Manifesto for the foundational economy published in the mid-2010s, the Foundational Economy Collective, a group of

Manchester-based researchers advocated for a fundamental renewal of economic policy, refocusing it from the coveted frontier high-tech sectors to the less glamorous zone of the *foundational economy* (FE), which provides existential goods and services designed to ‘keep us safe, sound and civilized’ (FE Collective, 2020). Inspired by the works of POLÁNYI, K. (1944), and BRAUDEL, F. (1981) the FE Collective militates for re-embedding the economy into social and environmental contexts, on the grounds that capitalism has been allowed to expand into areas of society where markets should not belong (REEVES, R. 2018, 25). Breaking with the GDP-oriented singular notion of the economy that emerged with the rise of national income accounting in the mid-20<sup>th</sup> century, the FE reframes the economy as diverse, composed of multiple zones of activities (Table 1) that show very different features and consumption patterns, and can be guided by economic principles other than market exchange (FE Collective, 2020).

Operating outside the sphere of market exchange and public provisioning, the unpaid sector of the *core economy* (family and community) comprises 40 percent of working time and is dominated by women; it is analogous to the Braudelian ‘infra-economy of everyday life’ where the majority of the world’s population lived in the early modern period. Together with the core economy, the foundational zone emphasizes collective liveability and belonging, and is an important source of place attachment (MACKINNON, D. *et al.* 2022). The foundational zone encompasses the sphere of infrastructure-based collective consumption through locally grounded provisioning systems and services described as low risk, low return activities. Covered only partly by major databases yet a source of roughly 40 percent of jobs in European countries (nearly 70% when considering the overlooked economy), the FE produces mundane and sometimes taken for granted goods and services that are vital for everyday life and the satisfaction of human needs (BARNTHALER, R. and GOUGH, I. 2023). As defined by BOWMAN, A. *et al.* (2014), FE goods

Table 1. *The zonal view of the economy in a foundational perspective*

Economy	Form of consumption	Examples	Business model	Source of revenue	Organisational mobility and mortality	Post-1980s public policy
Core Economy	Non-economic	Parenting (voluntary action, etc.)	Gifting: no charging or recovery of cost	Goodwill	Re-invented forms (e.g. divorce and marriage)	Volunteers
Foundational Economy	Daily essentials distributed via infrastructure of networks and branches	Material (e.g. food, utilities); Providential (e.g. health, care, social housing)	Was low risk, low return, long time horizon for public and private providers	Tax revenue for free at point of use or subsidised; or regulated private purchase	Low mobility and mortality as networks and branches ‘ground’ firms, stable demand	Privatisation, outsourcing, shareholder value
Overlooked Economy	Occasional purchases of mundane, cultural necessities	Holidays (a meal out, haircuts, etc.)	Financialised corporates vs SME and micro pro lifestyle and getting by	Discretionary from market income	High mortality in small firms and structural shifts	Below the policy radar if firms too small to take outside capital
Tradable Economy	(Aspirational) private purchase	Cars, electronics, private housing	high risk, high return, short time horizon	Market income from wages (state subsidy for R & D, training, etc.)	High mobility as foot-loose under free trade; cyclical demand	Business friendly, structural reform

Source: The Foundational Economy Collective, 2020.

and services are partly non-market, they are consumed by all citizens regardless of income, geographically distributed, and typically sheltered by local monopoly or politically franchised. While the *providential foundational economy* is about human interaction and essentially represents the modern welfare state (health and social care, education, police, public administration), the *material foundational economy* is more concerned with things, delivering ‘essential need satisfiers’, e.g., pipe and cable utilities, public transport, telecommunications, food distribution, housing or banking services. The FE is surrounded by an external zone of non-essential provisioning labelled as the ‘*overlooked economy*’, which provides occasionally purchased comfort goods and services (e.g., haircuts, house repairs, holidays from work or a meal out) that are important to well-being.

The *export-oriented tradable economy*, described as the least welfare-critical zone, is associated with competitive success and economic growth-focused strategies, which either downplay the importance of sheltered and low-productivity FE sectors or present them as levers for increased productivity, with a view to increment GDP. FE theorists note how the overrated high-tech and R&D intensive industries have failed to deliver wealth and well-being for the majority of the population, employing around 4 percent of the workforce in European countries (FE Collective, 2018). The preoccupation of economic policy makers with high-tech and next generation industries follows from their depiction of the economy as an iceberg, giving visibility to the narrow zone of the tradeable economy, while a large part of the economy, despite its strategic importance for national prosperity, remains hidden from view (Ibid.). Whereas the building of the foundational economy in Western Europe was a century-long achievement dating back to the 1870s, its dismantling through neoliberal reforms from the 1980s has undermined both the material and moral basis of foundational provision, which is inherently normative, as stressed by the FE Collective. Neoliberal

business-friendly regimes encouraged extractive corporates in FE sectors (such as transport, energy, telecommunications, or retail) that fail to adequately provide FE goods and services, without imposing any duties on them (BENTHAM, J. *et al.* 2013; GOUGH, I. 2020). To challenge the dominance of investment-averse, financialized and shareholder value-driven business models in the market-provided FE, there is a need for the remunicipalization of some commodified essential services, increasing the local accountability of economic actors and the reform of top-down, centralized policymaking (FE Collective, 2018; HANSEN, T. 2022).

Another policy recommendation concerns implementing *social licensing* whereby the local state could subject FE businesses that provide welfare-critical services to various eco-social obligations (payment of living wages, fair treatment of suppliers, distribution of economic benefits, support for community activities, building local value chains, etc.) in exchange for their right to trade in partially sheltered sectors, on grounds that it is citizen tax revenues and direct household expenditure that sustain foundational activity (FROUD, J. and WILLIAMS, K. 2019). A new social contract with the private sector, as argued by MARQUES, P. *et al.* (2018) would allow deprived areas to negotiate better deals for their communities. Social licensing proposals rest on the principle that regardless of ownership, all FE businesses should be treated as in the public domain, not by the means of renationalisation, which only changes ownership, but constitutional reforms (FE Collective, 2018; GOUGH, I. 2020). Accordingly, their primary focus should not be profitability, which always involves value extraction from the public realm but rather to ensure that wealth creation is generative and rooted (BERRY, C. 2018; EVENHUIS, E. *et al.* 2021). In this regard, the FE has many parallels with the Community Wealth Building movement, which stresses the key role of local anchor institutions in local wealth retention and fosters the creation of local cooperatives and locally owned firms with social value embedded in their practices (CRISP, R. 2022).

The literature on diverse economies that seeks to explore economic spaces of alterity and, more recently, well-being economies that encourages well-being-driven businesses with social and environmental goals, is similarly critical of exploitative and extractive business practices whose alliance with various forms of concentrated power can exert undue influence on trajectories of change (GIBSON-GRAHAM, J.K. and DOMBROSKI, K. 2020; FIORAMONTI, L. *et al.* 2022). The FE's zonal view of the economy fits well with the *diverse economy* (DE) concept developed by GIBSON-GRAHAM, J.K. (2008) as a critique of capitalocentric models downplaying the role of non-market transactions and unpaid household work in the economy, and showing a blindness to alternative development paths pursued by places where waged economy is not the primary source of well-being to people. In post-socialist CEE countries, for instance, the survival of diverse economic activities plays a significant role in the social reproduction of households (FABULA, S. *et al.* 2021; VIGVÁRI, A. 2023). GIBSON-GRAHAM's representation of the economy as an iceberg intends to unsettle the hegemony of capitalist practices by bringing visibility to multiple forms of labour and economic activities beneath the waterline that are usually hidden from view. For NOVY, A. (2022), FE represents a promising new development vision contrasted with the short-term strategies of liberal globalism and nationalistic capitalism, both ill-equipped to provide adequate responses to the current social-ecological crisis. BÄRNTHALER, R. *et al.* (2021) interrogate the potential of FE to instigate a social-ecological transformation that may overhaul capitalist nature-society relations guided by an extractive logic, in favour of a good life within the planetary feasible.

The FE perspective seeks to refocus industrial policy from narrowly defined manufacturing sectors producing tradable and exportable goods and services to the foundational sectors that are key to rebalancing regional economic growth. AIGINGER, K. (2015) claims that welfare increases in high income coun-

tries require industrial policy that is based on high road competitiveness, defined as the ability to promote beyond GDP goals while focusing on developed countries' comparative advantages. Low and high road strategies to regional development co-exist to this day, the former (neoliberal approach) centred on lowering costs (wages, taxes, energy), labour and environmental standards; the latter (mainstream progressive approach) relying on higher wages and productivity, boosting capabilities in education, innovation, ICT, and ecological excellence (Scandinavian style). As suggested by BERRY, C. (2018), the subject of industrial policy should be conceived as a multi-layered economy, with the foundational sector representing a new economic entity in its own right. An FE-informed industrial policy (see BOWMAN, A. *et al.* 2015) that delivers social value would prioritize the essential needs of society and workers, such as access to universal basic infrastructure, alongside the advancement of early-stage research, energy supply, KIBS, and industrial growth, with the latter always generating conflict between winners and losers. This highlights the non-neutrality of state agency, which is always selective, empowering some actors or groups, identifying lead firms or key segments of value chains as the main drivers of capital accumulation, privileging certain spatial and temporal horizons, strategies, paths, and identities over others (JESSOP, B. 2014; TEIXEIRA, T. 2023).

Linking spatially uneven economic development to the neoliberal restructuring of capitalist production, WIGGER, A. (2023) defines the state's role as a facilitator of business-driven industrial upscaling processes, subordinating the interests of research institutes, labour and society to large private interests. Before the pandemic, debates on new industrial policy and strategic autonomy brought into sharp focus the EU's strategic selectivity, its commitment to support advanced economies in developing frontier technologies at the expense of left-behind places, i.e. regions and cities outside the narrow scope of mission-oriented indus-

trial policies, which rely on R&D expenditure as the main driver of innovation-led growth. MORGAN, K. (2021) claims that it is in this very space that the FE, due to its spatial and social inclusivity, makes its most important contribution. Left-behind places, as the contemporary manifestation of persistent geographically uneven development (IAMMARINO, S. *et al.* 2019; MACKINNON *et al.* 2022), are low or slow growth places where popular discontent and support for populist political forces, below average pay, employment and productivity, lower levels of educational qualifications and skills, higher levels of poverty and economic disadvantage coalesce (RODRÍGUEZ-POSE, A. 2018; BERTUS, Z. and KOVÁCS, Z. 2022).

As the FE is the part of the economy that is place-based, the theory fits well with the framework of progressive (if not radical) place-based policies targeting the reduction of territorial inequalities by promoting economic, social and institutional innovation, as it seeks to disrupt conventional growth-oriented local and regional development strategies that prioritise the inward attraction of firms and jobs. A report by the Heseltine Institute acknowledges that alongside the centrality of the tradable or commodity economy, the foundational economy and the social economy have an important role in the renaissance of lagging places (BOYLE, M. *et al.* 2019). Given the increasing disconnect between growth and wages/living standards, the FE approach focuses on factors that directly enhance quality of life and liveability for citizens, i.e., public services, social capital, social infrastructure and environmental assets. As FROUD, J. *et al.* (2020) note, productivity-enhancing regional or industrial policies are of little relevance in the context of low skills/low productivity foundational or mundane activities. In the case of some low pay activities, there is no automatic link between increased productivity and higher wages, nor is the policy goal of raising productivity in the FE sectors (such as health) necessarily meaningful. Rather than producing more competitive industries, the main purpose of

the FE is to directly contribute to raising social standards in a region via the provision of stable, high-quality, sustainable, resilient, and low-cost foundational services (EVENHUIS, E. *et al.* 2021; ESSLETTZBICHLER, J. 2022). The FE takes up an estimated 30 percent of average household consumption expenditure, making all households essentially foundational consumers (BOWMAN, A. *et al.* 2014). Joining the long-evolving debate on the inadequacy of GDP/GVA metrics to reflect welfare and citizen well-being (see CALAFATI, L. *et al.* 2021), FE theorists argue that the metrics of foundational liveability – defined as household residual income after housing, utilities and transportation costs – should be the primary concern of economic policy rather than private consumption-driven economic growth. In a foundational perspective, citizen welfare depends less on tradables purchased through individual private income and more on collectively provided essential daily services, like energy, medical care, mobility infrastructure, education and social infrastructure, such as libraries and parks (FROUD, J. *et al.* 2018).

Essentially, what distinguishes the FE from the competitive sectors is its overwhelming reliance on locally derived demand and incomes. Offering mostly locally anchored jobs, it acts as a major ‘stabilizer’ of local economies in periods of crisis, providing an important source of localized resilience (MARTYNOVICH, M. *et al.* 2023). By emphasizing the social use value of labour and the tacit skills of citizens, particularly those employed in low value, unpaid or underpaid sectors, the FE offers a novel approach to employment creation aimed at enhancing the quality of jobs, not simply their numerical increase (BENTHAM, J. *et al.* 2013; FE Collective, 2018; FORTH, J. and RINCON AZNAR, A. 2018). Given that future economic development is increasingly reliant on the qualitative contribution of production factors instead of extensive growth, we do not believe that the public sector has a crowding-out effect on private sector economic performance (BIRCH, K. and CUMBERS, A. 2007), rather, a well-functioning public sector or broadly defined FE is necessary for the whole

regional and local economy to work efficiently. Moreover, as empirical evidence suggests (Bosák, V. *et al.* 2023), in the long run, an underdeveloped FE can undermine the further expansion of the competitive economy.

The FE as a moral enterprise (FE Collective, 2018) emphasizes universal entitlement to foundational goods and services that are essential to citizens' well-being and participation in society as a means to reducing inequalities, partially through taxing wealth and conspicuous (non-essential) consumption. This clearly resonates with the social equity argument for regional policy whereby no individual should be disadvantaged with respect to job opportunities, access to public services and affordable housing by virtue of living in one region rather than another. BARBERA, F. *et al.* (2018) draw an analogy between the local commons and the civic infrastructure of goods and services that serve everyday needs, stressing the need for their de-commodification. FE theorists interpret foundational provision and entitlement as the practical application of the theory on human needs and human capabilities. The FE approach has informed recent UK-wide proposals for universal basic services (UBS), arguing that everyone should have access to life's essentials as a right not a privilege (see COOTE, A. and PERCY, A. 2020; GOUGH, I. 2020). The collective provision of UBS in areas such as childcare, adult social care, housing, transport and access to the Internet can be justified on equity, efficiency, solidarity as well as sustainability grounds (see GOUGH, I. 2020). UBS rely on interventionist states to ensure their citizens unconditional access to essential services and infrastructure; as argued by GOUGH, I. (2021), the state has the power to expand the foundational at the expense of the rentier economy by taxing non-labour incomes, e.g., wealth, land, corporations, pollution, unhealthy consumption, etc. The delivery of need satisfiers, defined as the particular goods, services, activities and relationships required to meet specific needs in a given social setting (Ibid. pp. 7) requires collective responsibility and 'foundational renewal'.

For instance, the building of 'grounded cities' that emphasize the management of the mundane, sheltered activities of the FE for the benefit of all citizens, social innovations to meet basic needs over technical innovation geared at productivity growth, and the city's co-development with its hinterland (ENGELEN, E. *et al.* 2017). Foundational livability, underpinned by UBS, is instrumental in switching the economy from a fixation on economic growth to a concern for human well-being within planetary limits (COOTE, A. 2020), in order to support the transition to a low-carbon energy-services, well-being, and equity-oriented economy (IPCC 2022). To this end, national governments across the globe have subscribed to post-growth well-being economy agendas, particularly in high income countries, where further economic growth no longer drives increased human well-being, health, happiness or life satisfaction (WILKINSON, R. and PICKETT, K. 2022). Decentering GDP growth as a core economic and political target, well-being economies frame development as an increment in multidimensional well-being and consider industrial investments of positive value for the economy insofar as they produce desirable well-being outcomes, such as improvements in the quality of work or a better work-life balance. WE proponents, like FE theorists, have recommended focusing on collective well-being as the main goal of economic policy, and, therefore, the need to expand socially productive sectors (e.g. health, education, care, conviviality) in tandem with downscaling ecologically and socially harmful economic activities (see FIORAMONTI, L. *et al.* 2022).

In line with the literature (see BENTHAM, J. *et al.* 2013; FE Collective, 2018; NYGAARD, B. and HANSEN, T. 2020; HANSEN, T. 2022), we believe that the FE has a higher relevance for peripheral regions and cities where the economic and institutional conditions for highly productive ventures are lacking as the demand for FE services is non-cyclical; besides, organisations in the FE are territorially distributed by nature, likely to be present in

every municipality. Due to its social and spatial inclusivity, the FE approach, promising to build more grounded local and regional economies, has the potential to save left-behind places from the ‘circular and mutually reinforcing spiral of deterioration’ (MACKINNON, D. *et. al.* 2022; MARTYNOVICH, M. *et al.* 2023). In addition, policies improving the productivity of ordinary firms in the everyday economy (such as retail, hospitality, social care, tourism), can achieve more regionally balanced growth by creating a broader base of competitive firms than an exclusive focus on frontier firms with a high spatial concentration, as the regional productivity gap in the case of certain FE activities is not that significant. Integrating the FE approach into economic policy making would also increase the potential of peripheral/semi-peripheral CEE regions ‘locked into’ low value segments of GVCs to overcome the low innovation, low skills, low productivity trap (GALGÓCZI, B. *et al.* 2015), helping them to avoid race-to-the-bottom situations. With its marked social welfare orientation emphasizing human capital, social investments, and the social consumption of essential goods and services over individual private consumption, the FE approach is particularly well-suited to the needs of peripheral regions with demographic challenges and reduced economic opportunities, capable of alleviating poverty by providing decent wages and promoting a renewal of key provisioning sectors of the economy.

## Data and methods

Our empirical work utilises a database of firm-level financial data collected from four Central and Eastern European countries, the Visegrád Group, based on our institution’s access to the Bureau van Dijk’s Orbis Europe database. The covered period spans from 2016 to 2021 and the database consists of a total of 218,575 active firms from Czechia, Hungary, Slovakia and Poland having either over 10 employees or over 1,000,000 USD operating revenue.

The location information allows us to identify the NUTS3 region and the municipality in which the firms are headquartered. This information allows us to study the firms’ performance according to a variety of territorial aggregations, from which we will focus on the national and the NUTS3 level. Also, information on the firms’ sector of operation according to the NACE Rev.2 classification (4-digit codes) enables us to analyse the data in a detailed sectoral disaggregation. The set of variables collected from the Orbis Europe database were chosen to be relevant to the calculation of the firm-level labour productivity following the widely recognised guidance of GAL, P.N. (2013). Nonetheless, data availability issues highly constrain the pool of firms available for analysis. The results might not be fully representative for all of the regions. To overcome these shortcomings, we kept the level of regional disaggregation at the NUTS3 level and computed averages over the six years that were covered in our data set. For the sake of greater coverage, we omit dynamic analysis.

In order to study the functioning of the foundational economy in each region, we need to identify those economic activities that belong to the different ‘zones’ of the economy. A detailed classification published by The Foundational Economy Collective (FE Collective, 2019) will help us to do this. The classification assigns to each economic activity identified by the NACE codes their type according to which part (zone) of the economy they belong (*Table 2*). The two categories within the foundational economy, as explained in previous sections, are the material activities and the providential activities, and similar in nature is the overlooked economy, which are supplemented by the tradable economy (called ‘other activities’). This way we are able to identify the divergent economic structures and the associated development patterns among the regions of the CEE area.

The importance of the foundational economy is mostly evaluated with the distribution of economic performance between the different economic zones. For this reason, we compute some baseline distribution in-

Table 2. NACE Rev. 2 industry classification with respect to economic zones

Zone	Number of industries	Percentage of industry codes, %
Material	182	23.2
Providential	44	5.6
Overlooked	183	23.3
Tradable (other)	377	48.0
<i>All industries</i>	<i>786</i>	<i>100.0</i>

Note: A detailed list of industry classification is available in MARTYNOVICH, M. *et al.* (2023) online supplement (pp. 10–21), and The Foundational Economy Collective (2019). Source: Authors' own elaboration based on MARTYNOVICH, M. *et al.* (2023) online supplement.

indicators regarding the number of firms, the number of employees and the total operating revenues in a regional aggregation. This is the information available in the database for the widest range of companies. We supplement this with the evaluation of average income and employment that inform about the relative strength of the types of economic activity in each region. The location information and the sector of operation is available for almost all firms, but the coverage of employment and operating revenue data is only around 90 percent at an average (Table 3). For Czechia and Slovakia, the lower coverage is attributable to the reporting practices of public sector firms and institutions, as data in many cases are available only at a class level or as an estimation. When com-

puting firm-level productivity measures, we sort out those firms (institutions) that report 'limited financials' (Figure 1 and 2).

A U-shaped relationship is observable between the relative development of the regions and the share of the manufacturing sectors within their total economy (Figure 3). In fact, the values exceeding 20 percent are regarded as high in a Europe-wide comparison. On the basis of this, and also considering the population size, we have grouped the 115 regions into five categories according to their level of development based on their per capita GDP level (in PPS) relative to the EU average in 2019 (see Figure 1). The capital regions are a distinct category, reaching 152 percent (Budapest), 163 percent (Bratislava), 206 percent (Prague) and 216 percent (Warsaw) of the average per capita GDP in the EU and having a low relative share of manufacturing within their economy. The second development category consists of 9 metropolitan regions with large non-capital cities, of which one is in Czechia (Jihomoravský kraj with Brno) and 8 in Poland (Miasto Kraków, Katowicki, Miasto Poznan, Miasto Szczecin, Miasto Wrocław, Trojmiejski, Miasto Łódź and Warszawski zachodni), having above-EU average development and relatively low manufacturing sector. The third category represents the relatively developed non-capital regions (altogether 22), hereby referred to as 'intermediate' regions, with per capita GDP levels exceeding 70 percent of the EU average. They are mostly manufacturing regions with medium-sized

Table 3. The coverage of the firm-level database

Country	Number of			Total operating revenue, million USD	Coverage of	
	NUTS3 regions	firms	employees		employment data*, %	revenue data*, %
Czechia	14	60,083	3,324,593	603,794	80.6	92.0
Hungary	20	57,412	2,785,495	470,866	95.6	99.7
Slovakia	8	29,518	1,133,455	247,406	80.3	80.0
Poland	73	71,562	6,056,176	1,038,711	95.3	92.7
<i>Total</i>	<i>115</i>	<i>218,575</i>	<i>13,299,719</i>	<i>2,360,776</i>	<i>89.3</i>	<i>92.6</i>

\*The column reports the proportion of companies for which data are available for at least one year.

Source: Authors' own elaboration based on Orbis data.

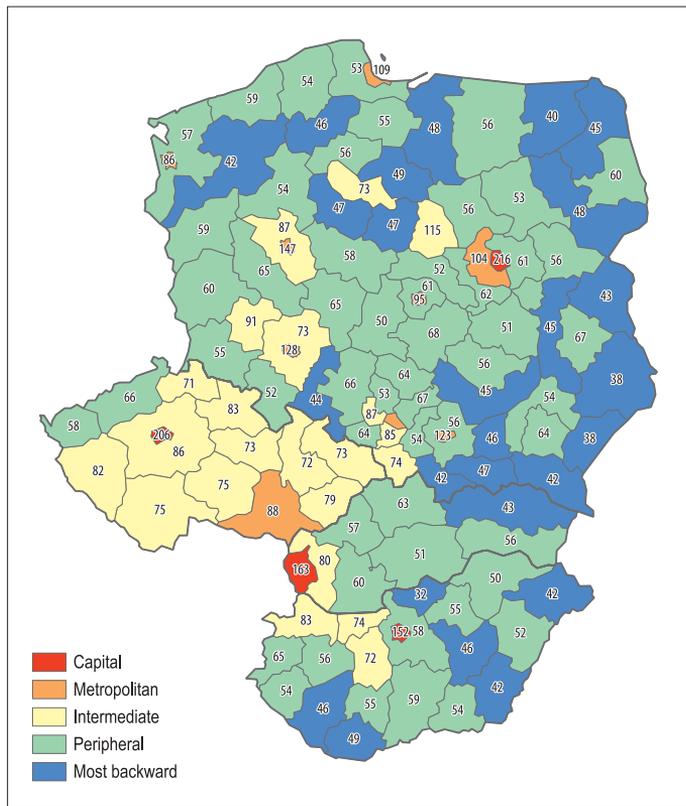


Fig. 1. Relative economic development of the NUTS3 regions in the Visegrád countries (per capita GDP in PPS, as a percentage of the EU-27 average), 2019. *Source:* Authors’ own elaboration based on Orbis data.

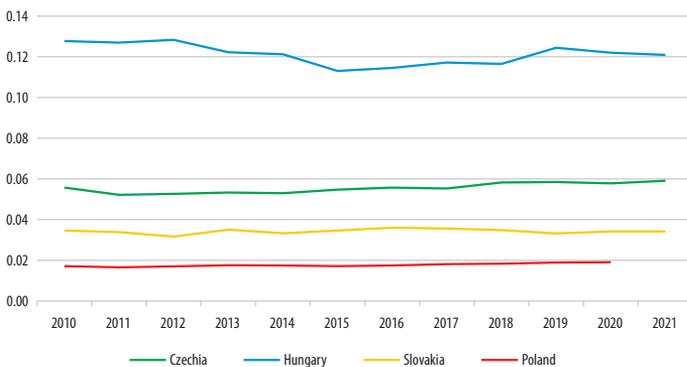


Fig. 2. The normalised Hirschmann-Herfindahl index of GDP concentration in the Visegrád countries, 2010–2021. *Source:* Authors’ own elaboration based on Eurostat data (nama\_10r\_3gdp).

centres. Apart from Plocki and Legnicko-Glogowski regions in Poland, none of these exceed 90 percent of the EU per capita GDP, nevertheless, they are developed compared to other parts of their respective countries. The less developed regions were divided into two categories: ‘peripheral’ regions reaching between 50 and 70 percent and having remarkable manufacturing sector (altogether 54 regions); and the ‘most backward’ regions which are below 50 percent of the EU average per capita GDP and the weight of their manufacturing sector is moderate (altogether 26 regions, none of which are in Czechia).

To evaluate firm performance, we calculate employment, revenue and productivity indicators. GAL, P.N. (2013) considers total revenue-based labour productivity as the most widely available measure, whose major weakness is that it does not control for intermediate input usage. Value added based labour productivity takes care of this problem, as value added is the difference between output (sales, revenue) and intermediate inputs (including resold goods). However, labour productivity does not control for differences in capital intensity across firms, therefore, to control for capital intensity, total factor productivity (TFP) should be calculated.

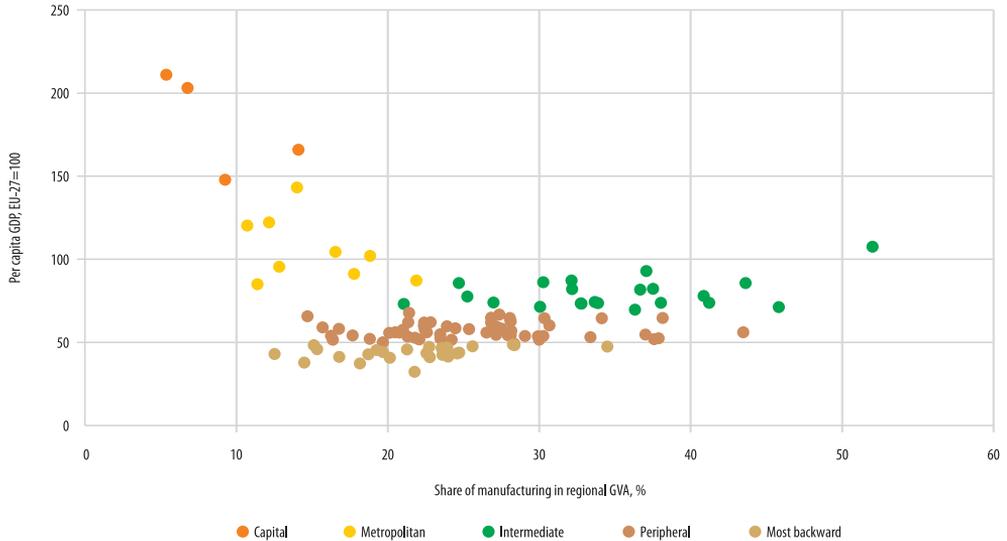


Fig. 3. The relationship between the share of manufacturing in GVA and relative development in the NUTS3 regions of the Visegrád countries (2016–2021) by region types. *Source:* Authors' own elaboration based on Eurostat [nama\_10r\_3gdp] and [nama\_10r\_3gva].

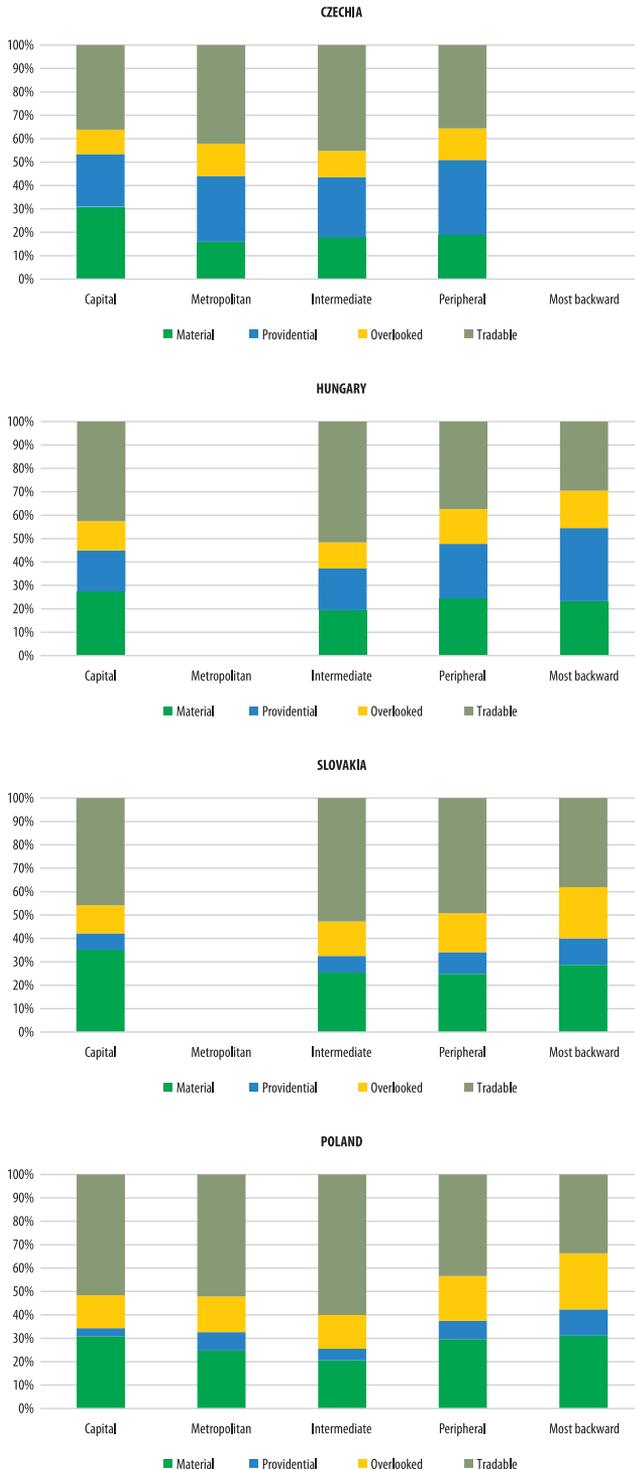
In this research we compute four kinds of measures for firm-level productivity. First, turnover-based labour productivity, which is the operating revenue divided by the number of employees. Likewise, a more accurate measure is value-added-based labour productivity, which is the value added divided by the number of employees. Nevertheless, the coverage of the value added data varies among the countries, being the lowest in Hungary (18%) and the highest in Poland (91%). Thirdly, value added is estimated by simply using its definition based on factor incomes as described by GAL, P.N. (2013), that is, the sum of the cost of employees and EBITDA. Fourthly, value added is calculated as the difference between total turnover and intermediate inputs, where the latter is approximated by the material costs. These indicators all measure labour productivity. Partly due to the different focus of our research and to data availability issues, TFP calculations will not be included at this stage of the research.

## Results

In this chapter we first present a bunch of descriptive statistics about the weight and performance of the various types of economic activities according to the foundational approach in the regions of the selected CEE countries. Then, we analyse the efficiency of production according to multiple labour productivity measures across the regions.

### *Exploring the performance of different economic activity types in the CEE regions*

The basic distribution measures mostly confirm our expectations about the weight of foundational activities (identified by the firms' NACE codes) in the different types of regions based on their relative development (Figure 4, and Figure A1 and A2 in the Appendix). Regarding the number of firms, tradable activities are most concentrated in the capitals



and metropolitan regions, but in terms of employment and, especially revenues, they are more represented in the intermediate regions in all four countries. The weight of material activities is relatively small in terms of the number of firms, but they represent the second largest category in terms of employment and revenues, especially in the capital regions. This is due to the centralised nature of material services provision and to the fact that a large part of the employment and revenues are recorded in the capital-based headquarters of the firms in the material sectors. In less developed regions, particularly in the most backward ones, providential and overlooked activities gain more importance, notably in terms of employment, and to a less extent in terms of revenues. While bearing in mind that the significant differences in the share of providential activities may arise from the different reporting practices of public institutions in the four countries, within-country, inter-regional differentials are still considered informative.

Interregional differences, based on the cross-sectional relative standard deviation (Table 4) are, generally, the highest in Poland, followed by Hungary and are the lowest in Czechia. Out of the four activity types, the spatial variation is relatively high in the providential and overlooked activities and it is the lowest in the trad-

Fig. 4. The distribution of employment between economic activities by region type, averages between 2016 and 2021. Source: Authors' own elaboration based on Orbis data.

Table 4. The relative interregional standard deviation of the share of FE and non-FE activities within the total economy

Country	Material	Providential	Overlooked	Tradable
Relative s.d. – the share of employees, %				
Czechia	25.8	13.3	17.4	13.2
Hungary	23.6	27.0	21.4	24.8
Slovakia	24.2	28.8	22.1	18.0
Poland	35.7	49.9	44.5	31.5
Relative s.d. – the share of firms, %				
Czechia	14.3	22.6	9.9	18.3
Hungary	20.7	27.4	10.1	21.6
Slovakia	21.4	40.8	13.4	13.0
Poland	27.9	28.4	17.2	22.0
Relative s.d. – the share of revenues, %				
Czechia	30.1	28.6	45.4	16.4
Hungary	35.4	39.8	50.4	29.2
Slovakia	25.7	29.4	46.8	14.0
Poland	41.2	58.0	78.8	36.1

Source: Author's own elaboration based on Orbis data.

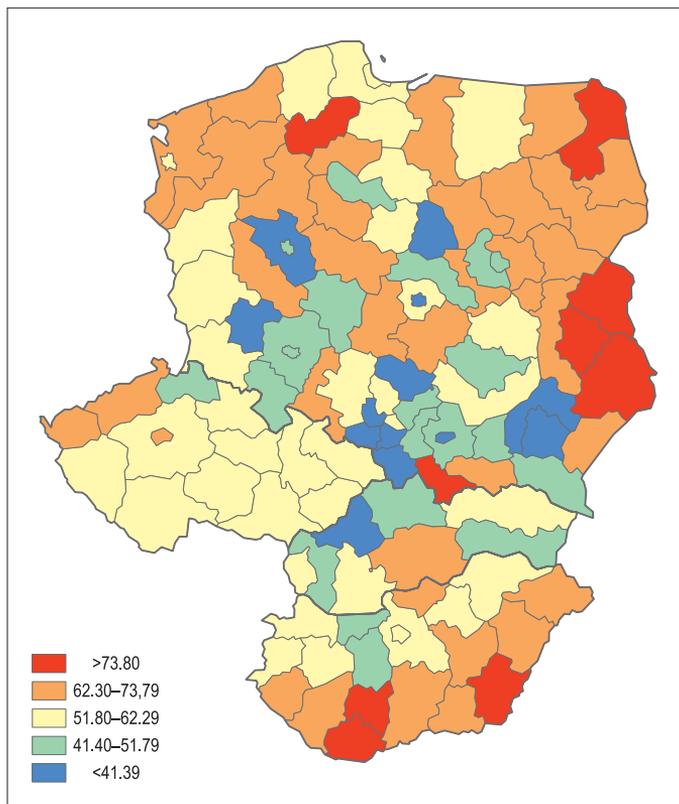


Fig. 5. The share of employees in foundational activities by NUTS3 regions in the Visegrád countries, averages between 2016 and 2021, in percent.

Source: Authors' own elaboration based on Orbis data.

able activities. Concerning the three types of indicators, the highest interregional variation is observed in terms of the revenues and the number of employees.

The geographical differences regarding the share of employment in foundational activities within total employment significantly overlap with the differences of overall economic development measured by per capita GDP (see Figure 1), as confirmed by Figure 5 below.

To gain deeper insights, we plot this relationship (Figure 6) and evaluate it with an OLS-regression between the share of employees in the foundational activities and the relative development of regions. Analogous regressions were also computed for revenues and the number of firms in the FE activities as a share of those in the total economy.

Due to their high level of development and the bal-

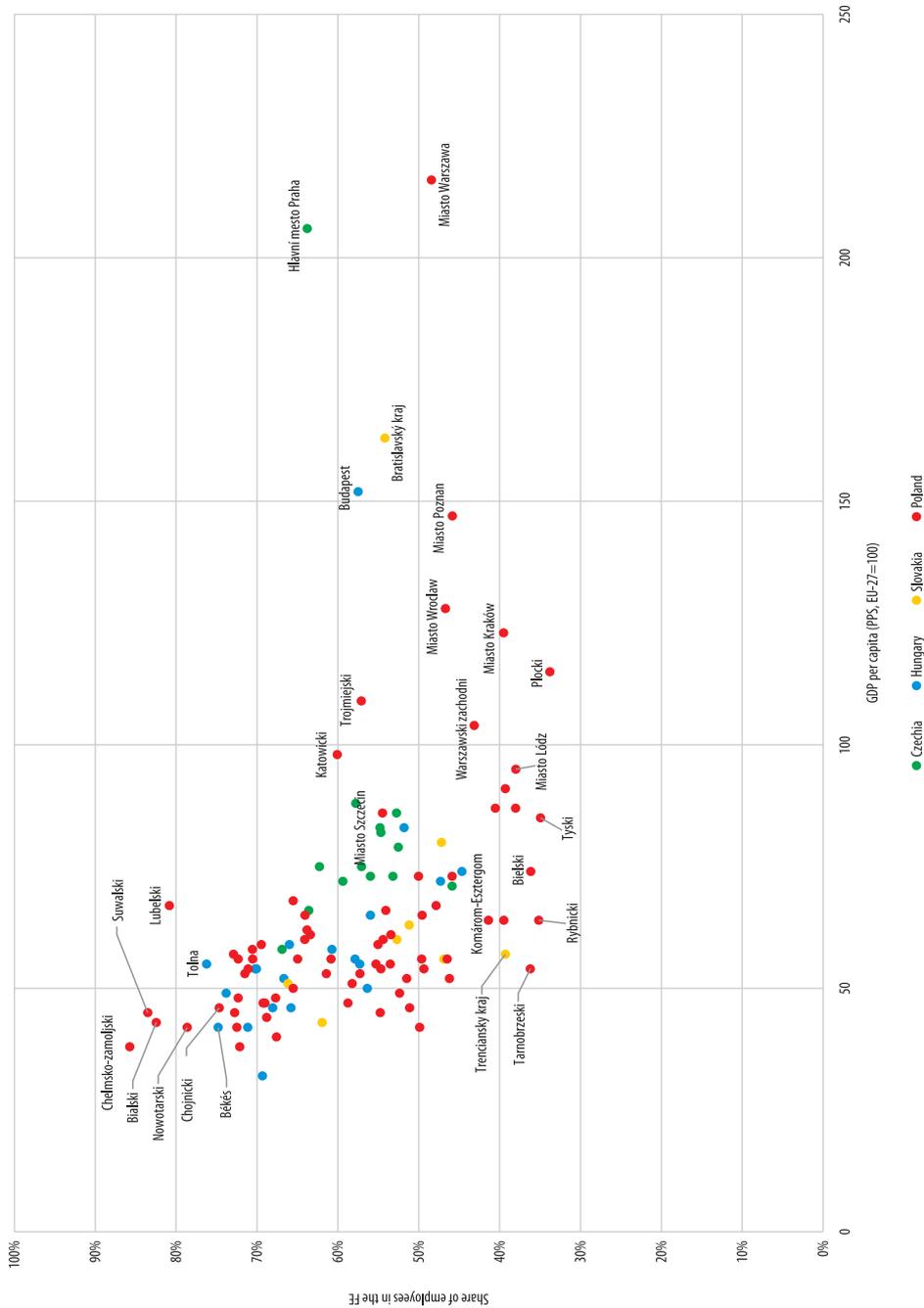


Fig. 6. The relationship between the share of employees in FE (averages between 2016 and 2021) and the relative per capita GDP in 2019 (PPS, EU-27 = 100). Source: Authors' own elaboration based on Orbis data.

anced distribution of tradable and foundational activities within their economies, the four capital cities and a couple of Polish metropolitan regions emerge as outliers within the regions. This holds for the weight of FE in terms of employment and revenues, but not for the number of firms as the share of firms in FE activities relative to the total economy is the lowest in the capitals and metropolitan regions among the regions in each country, i.e., they do not depart from the general tendency described by the regression in this respect (see *Figure A1* in the Appendix). This result is in line with those of MARTYNOVICH, M. *et al.* (2023), who highlighted that the weight of FE, by its very nature, is in a strong, positive relationship with the population density. It is reasonable to assume that this additional factor causes the specialties of the capital and metropolitan regions. The overall correlation between the level of development and the weight of the foundational sectors is better captured if we exclude the capital cities from our computations. The relationship between the share of employees in FE and the relative per capita GDP is significantly negative in the regions outside the capital cities, as confirmed by the results of the regression analysis (see *Table 5*). The relationship between relative regional development and the share of revenues in the FE is weaker, but significantly negative nonetheless. At the same time, the regression shows the strongest negative association if

we relate the regions' relative development to the number of firms in FE within their number in the total economy.

There are some notable differences within the Visegrád Group regarding the regional-level distribution of the share of foundational activities in terms of employment. Expectedly, the extent of the variation between the individual regional values follows the number of regions within each country. In Czechia, the weight of foundational activities within total employment varies between 46 percent (Liberecký kraj) and 67 percent (Karlovarský kraj). In Hungary, the lowest share of FE employment, 45 percent, was measured in Komárom-Esztergom county, and the highest, 76 percent in Tolna county. In Slovakia, the share of FE employment varied between 39 percent (Trenciansky kraj) and 66 percent (Banskobystrický kraj). The highest dispersion in this respect was observed in Poland, where the share of FE employment was the lowest in Plocki region (34%), and the highest in Chelmsko-zamojski region (86%).

Measures of the average size of firms in terms of employment and revenues in the different sectors and regions are also informative and help us to make a distinction between the general development level and the relative importance of the FE sectors. *Figure 7* indicates the average number of employees and the average turnover by NUTS3 regions relative to the total economy in a combined way. When the points

*Table 5. The relationship between the weight of FE and relative development in the NUTS3 regions of the Visegrad countries (2016–2021)*

Dependent variable	Share of employees	Share of revenues	Share of firms
	in the FE within total		
	employees	revenues	firms
Constant	79.9650* (3.1774)	72.6497* (4.6434)	78.8797* (1.9332)
Per capita GDP, EU-27 = 100	-0.3455* (0.0481)	-0.3429* (0.0702)	-0.2895* (0.0292)
Adj. R-squared	0.3155	0.1720	0.4687
S.E. of regression	9.9862	14.5938	6.0759
F-statistic	51.6971	23.8433	98.0219
Prob.(F)	0.0000	0.0000	0.0000
Obs.	111	111	111

Note: Standard errors are in parentheses. \* Indicates significance at the 99 percent level. Source: Authors' own elaboration based on Orbis and Eurostat data.

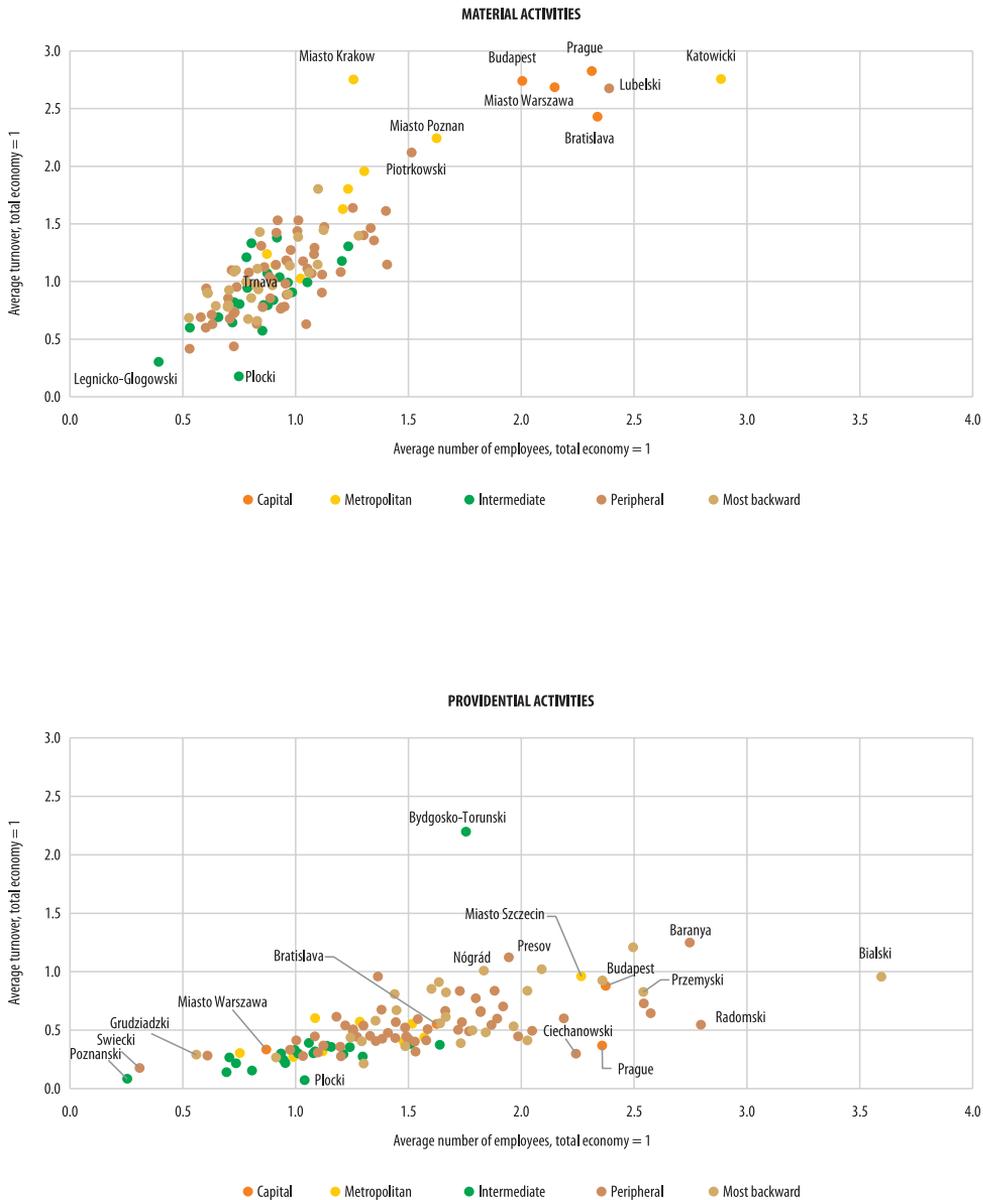


Fig. 7. Average number of employees and average turnover by region types and by activity types in the NUTS3 regions of the Visegrád countries (total economy = 1). Source: Authors' own elaboration based on Orbis data.

representing the NUTS3 regions are closer to the vertical axis, it suggests that the relative average turnover of firms is generally higher

compared to the total economy, but the average employment of firms is relatively lower. This is the case in the material activities and, especial-

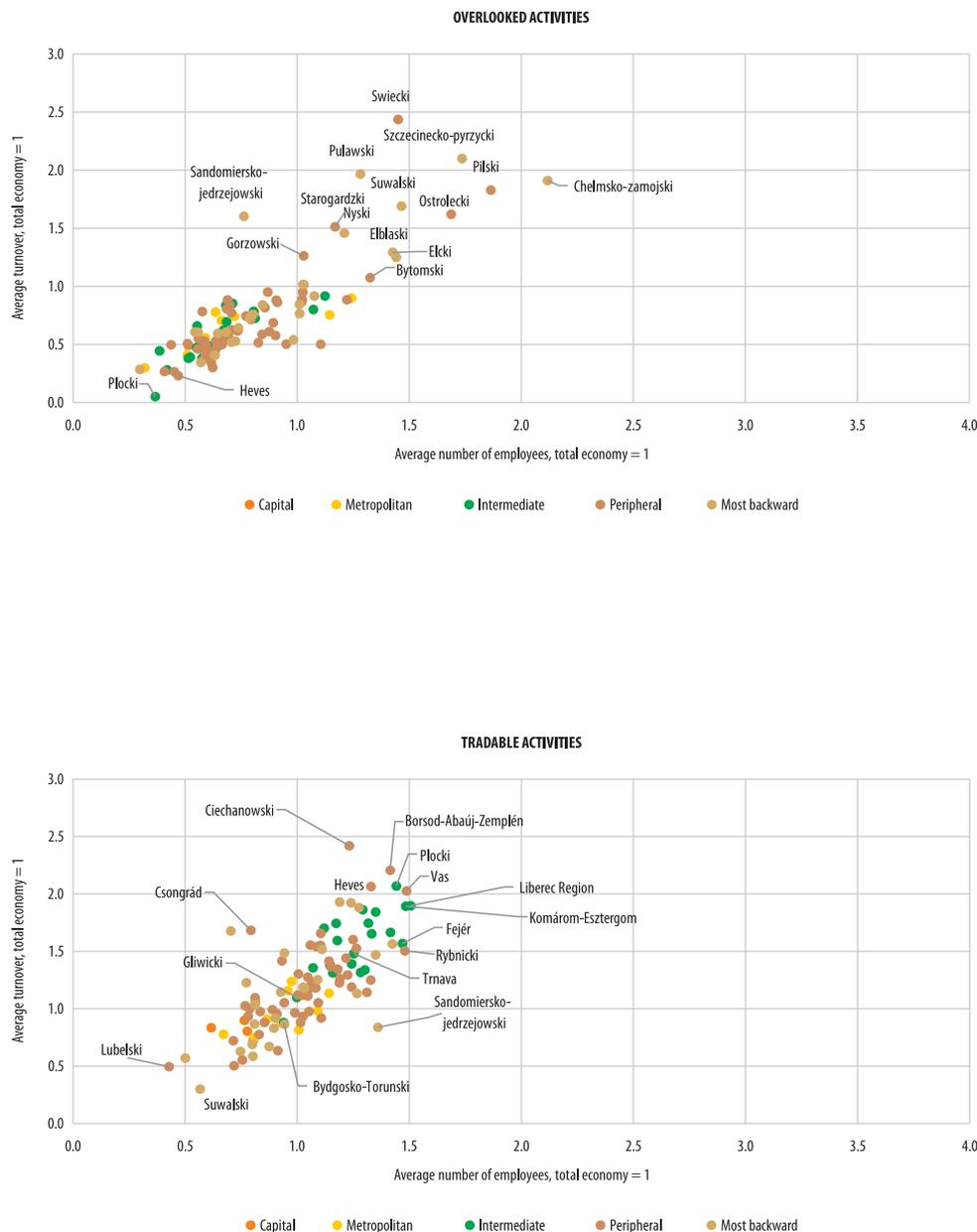


Fig. 7. Continued.

ly, in the tradable activities. In the overlooked activities, the firms' relative average employment is roughly proportional to their relative average turnover. However, in the providential

activities, the firms employ a relatively large number of people at an average, but their average turnover is unproportionately low. The highest average employment is observed in the

material and providential activities, especially in the capital regions (partly as a result of the special reporting practices). Average employment is generally the lowest in the overlooked activities. The tradable activities have a higher number of employees in the non-capital regions, especially in the intermediate regions, but the largest firms in terms of employees are found in the providential activities.

### Measures of firm-level productivity in the CEE regions

In what follows, we evaluate firm performance on the basis of labour productivity as described in the “Data and methods” section. Our perception is that the four types of labour productivity indicators show roughly similar tendencies, but they show some inconsistencies, therefore, we evaluate their evolution together (*Figure 8*, and *Figure A3* in the Appendix). The turnover-based productivity will be compared to the average of the other three, value-added-based productivity measures.

Based on the available measures of labour productivity, our results confirm the general expectations: in all types of regions tradable activities are more productive than other activities in many cases, but not always. Among FE activities, material activities have a comparably high or even higher labour productivity, especially in the capitals and Polish metropolitan regions. According to all measures of labour productivity, overlooked activities are less productive than material and tradable activities in each of the four Visegrád countries and each type of region, while the lowest efficiency was measured in the providential activities. A downward slope is observed for labour productivity performance according to the level of regional development (represented by the five region categories) across each activity type, which is most evident in Poland, and somewhat less visible in Slovakia. There is also a duality in terms of capital *versus* non-capital regions, especially in Slovakia and to a lesser extent in Hungary. In the case

of Czechia, the productivity gap between the capital and non-capital regions is not that large, and the differences between non-capital regions, including the metropolitan region, are not wide either. Productivity differentials among the five types of regions are smaller in the overlooked and the providential activities. Among the non-capital regions, the productivity advantage of intermediate regions over that of other, less developed (peripheral and most backward) regions is not always observable in the case of Czechia or Hungary.

*Figure 9* – and *Figure A4* in the Appendix – depicts labour productivity values for each NUTS3 regions by region types and compares them across the four types of activities in the Visegrád countries. The largest capital *versus* rest of the regions disparities are observable in the material industries (due to their highly centralised nature) and in the tradable activities. These are the largest in Slovakia and Hungary, but the distribution is much more balanced in Poland due to the high performance of the metropolitan regions. The most even distribution is observed for the overlooked activities and the providential activities everywhere, with the exception of Hungary. In the providential activities capital regions typically have a medium, or at least not outstanding performance.

### Discussion

Comprehensive empirical exploration of the FE is very scarce in the literature so far, therefore we can compare our results with only a few examples. The basic distribution measures that inform about the weight of FE are largely in line with those found in the literature. The most notable of them is MARTYNOVICH, M. *et al.* (2023) who investigated the role of FE in times of crisis. According to them, the blow of the crisis was milder in regions where the FE was better integrated with other economic activities. We think that this is similar to the case of CEE, since FE in itself is not stable enough to provide long-term stability because of its regrettably underfinanced nature. The authors propose that

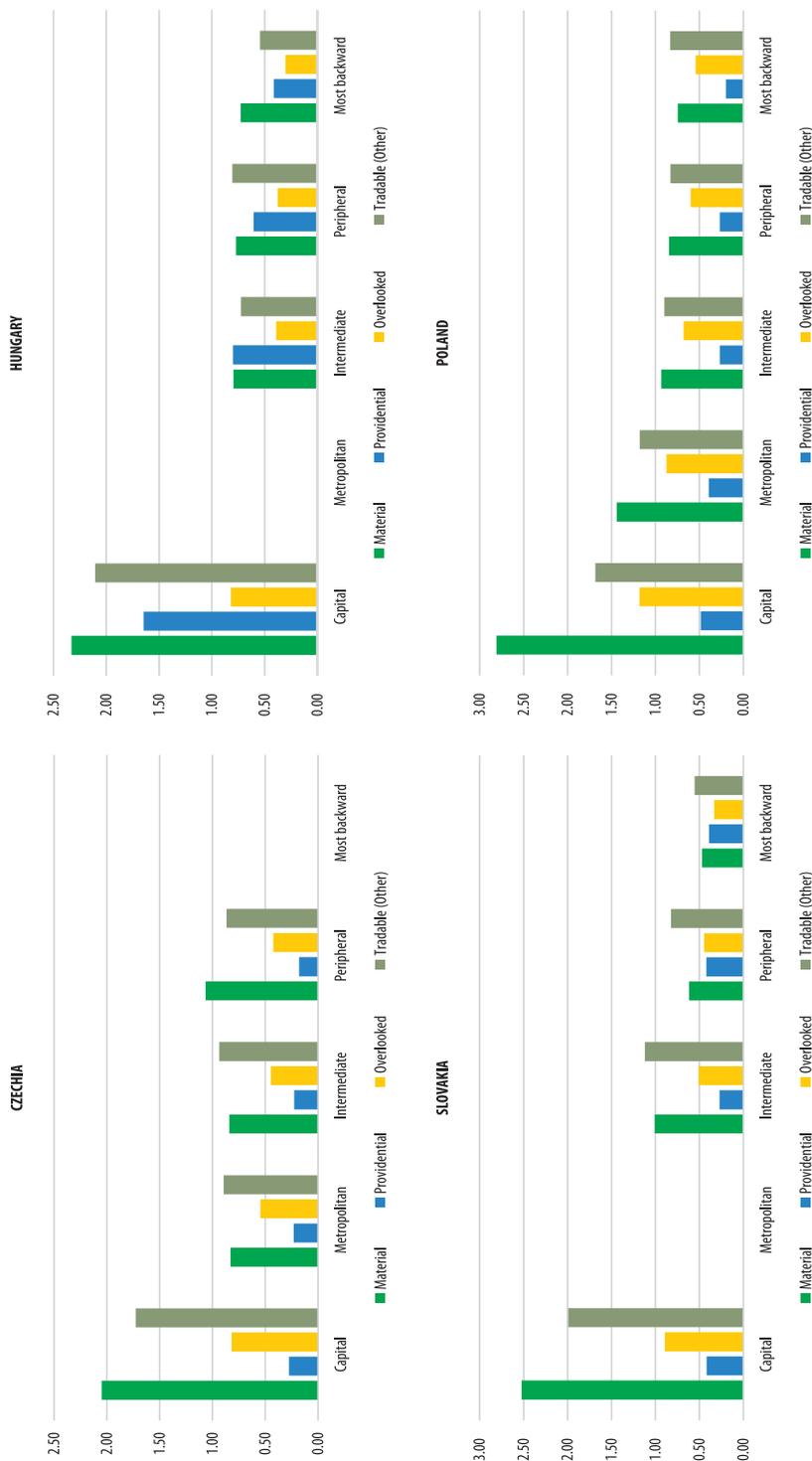


Fig. 8. Turnover-based labour productivity by economic activity types and NUTS types, averages between 2016 and 2021 (national average in the total economy = 1.00). *Source:* Authors' own elaboration based on Orbis and Eurostat data.

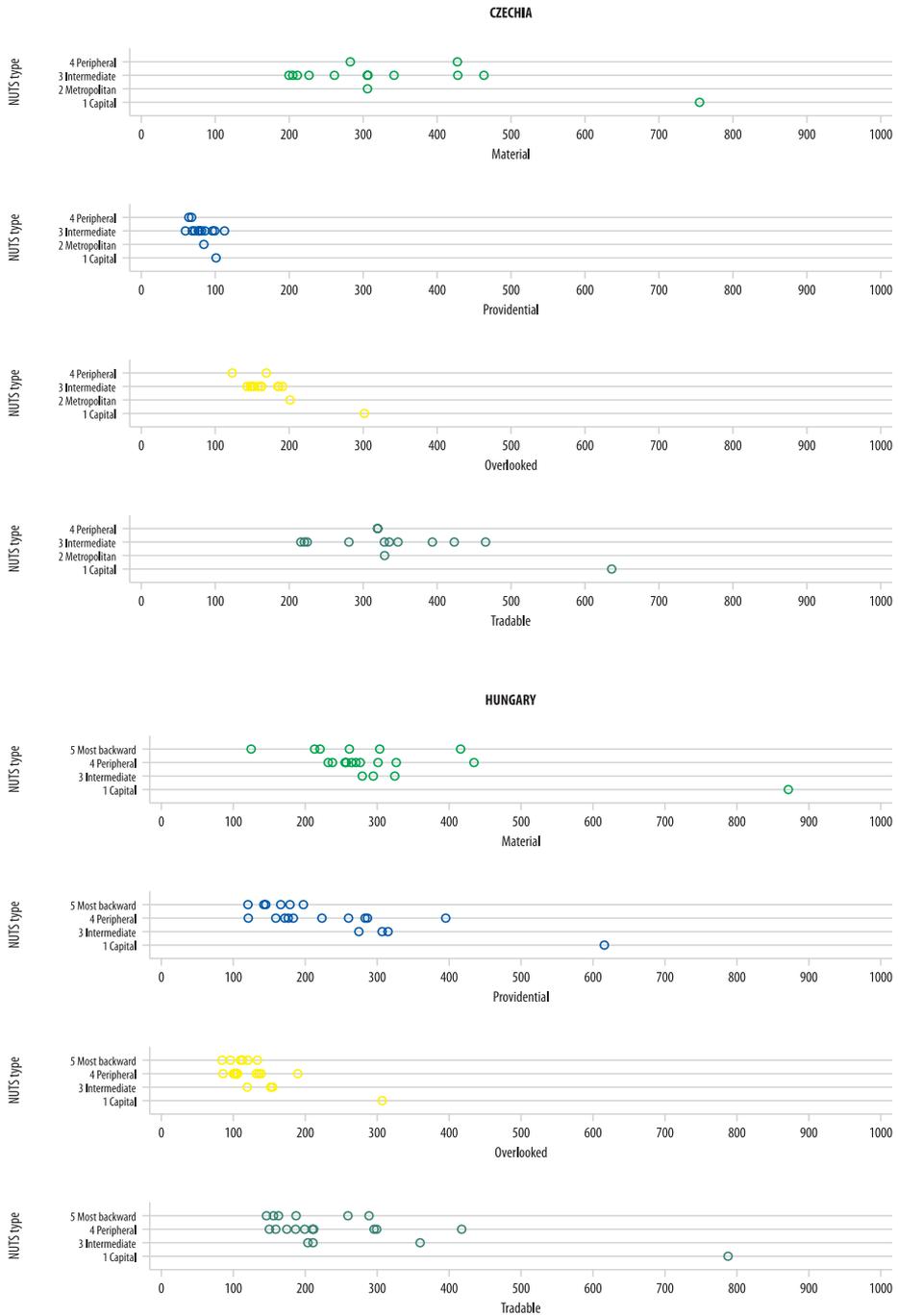


Fig. 9. Average turnover-based labour productivity of the NUTS3 regions by countries, region types and activity types (1,000 USD). Source: Authors' own elaboration based on Orbis and Eurostat data.

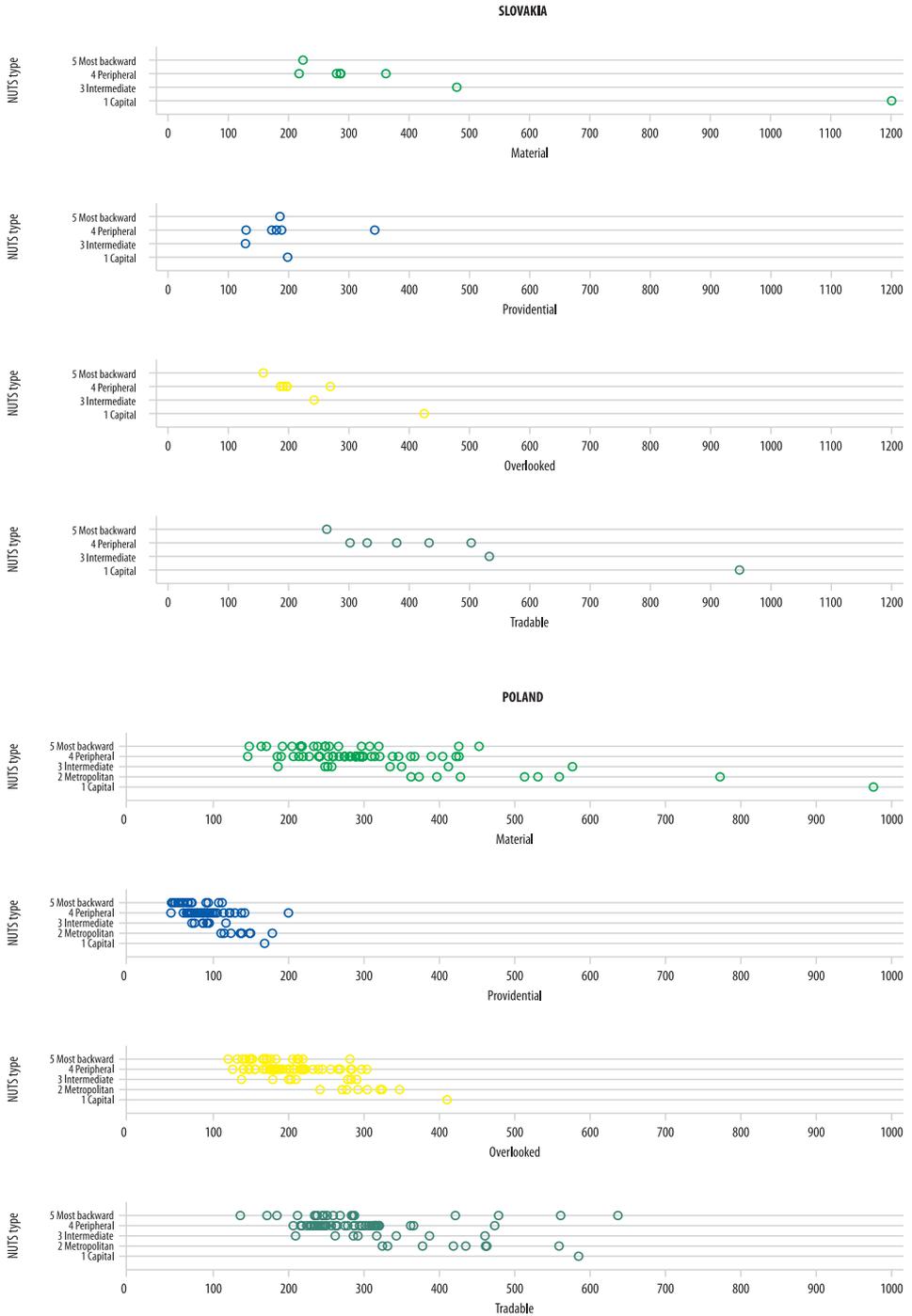


Fig. 9. Continued.

the different roles played by foundational and traded activities during crisis and recovery necessitate a more balanced approach, and more attention should be paid to the integration between these parts of the economy. Namely, to give particular attention to the interconnections between foundational and traded activities in regional policymaking and not to prioritize one over the other.

Our position is in accordance with the results of NYGAARD, B. and HANSEN, T. (2020) who state that foundational industries are often presented as levers for increased productivity, economic growth and job creation in other industries, thus, arguments for prioritizing them are not simply based on their positive contribution to citizens' welfare. The authors also found that local initiatives related to material services are most prominent, whereas providential services are less frequently prioritized in the municipal development strategies. Similarly, in CEE, material activities are often treated as strategic industries. The authors state that in Danish municipalities providential services are not considered part of the core of wealth production despite their central contribution to citizens' well-being. In general, foundational activities are regarded as unproductive consumption that municipalities can afford when exporting industries are thriving. According to NYGAARD, B. and HANSEN, T. (2020), it is capital and other metropolitan areas that emphasize initiatives to improve or invest in foundational industries, whereas rural and provincial municipalities are more likely to stress export-oriented industries in their planning strategies. We assume that it reflects the fact that foundational activities are often treated as residual, which is even more the case in CEE.

Bosák, V. *et al.* (2023) in a Czech municipal-level comparative analysis underline that the successful functioning of the tradable economy is conditioned by the FE, in the long-run, as it ensures social reproduction. Actually, an underdeveloped FE severely hinders local development overall, including further expansion of the tradable sectors.

In our research we also find that beyond tradable activities, only the well-financed material activities are able to bring prosperity to less developed areas, but there is no significant spill-over effect, since revenues in the overlooked activities largely depend on the local purchasing power, and revenues in the providential activities are dependent on public finances.

## Conclusions

In this article we provided an exploratory analysis of the distribution and performance of foundational activities within the regions of four CEE countries. Our findings show that foundational activities account for a significant proportion of employment, but they are considerably less important in terms of revenues. Also, the results confirmed our expectations that foundational activities are more represented in less developed regions, while tradable activities are more widespread in the so-called intermediate regions that form the most developed parts of their respective countries outside the capital cities. The relative economic development of capital cities outperforms their wider environment, nonetheless, the weight of the foundational and non-foundational activities is quite balanced in each of the four capitals of the Visegrád countries, at least in terms of employment and revenues. Among the different types of foundational activities, material activities have a similarly high labour productivity as compared to the tradable sector. Consequently, if we presume that tradable activities are less likely to appear robustly in less developed regions, the strengthening of the presence and performance of material activities might have positive impacts on their prosperity. The countries of the CEE region share many common features in terms of their economic development and geographies, but there also important differences between them. Slovakia and Czechia are characterized with a higher degree of 'capital *versus* rest of the country' duality

compared to Hungary, even though the latter shows wider spatial inequalities in GDP production, while economic development in Poland is the most deconcentrated based on both regional and firm-level data.

The most striking difference in the CEE countries with respect to their Western European counterparts is that the relative weight of manufacturing is significantly higher, but it reflects a weaker efficiency, i.e., the low road of development. Hence, a high reliance on the manufacturing sector cannot guarantee prosperity.

We suspect that in the CEE context, foundational activities might prosper in those regions where a relatively developed tradable sector is present, which is confirmed by the experience of the capital cities and metropolitan regions. Given that in some cases, especially in Hungary and Slovakia, the government's economic policy focuses more on industrial development and treats a large share of foundational activities as residual (excepting, e.g., the energy and financial sectors), the foundational economy could develop only in tandem with the tradable economy. Our impression is that good examples in this respect are found (apart from the highly developed capital cities) in the so-called 'intermediate' regions where a high level of industrialization and economic buoyancy can boost the growth of foundational activities and the services sector in general. Unfortunately, FE activities *per se* will not be able to deliver prosperity in the short run to otherwise underdeveloped CEE regions unless a greater, *deserved* focus is given by national economic policy. However, the opposite is also true, but mainly in the long run (which might explain policy neglect), i.e., regions will lose their attractiveness to investments in the tradable sectors if their foundational economy is underdeveloped.

**Acknowledgement:** This research has been made within the framework of Project No. 135185 with support from the National Research, Development and Innovation Fund of Hungary, financed under the K20 funding scheme and the János Bolyai Research Scholarship.

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## Appendix

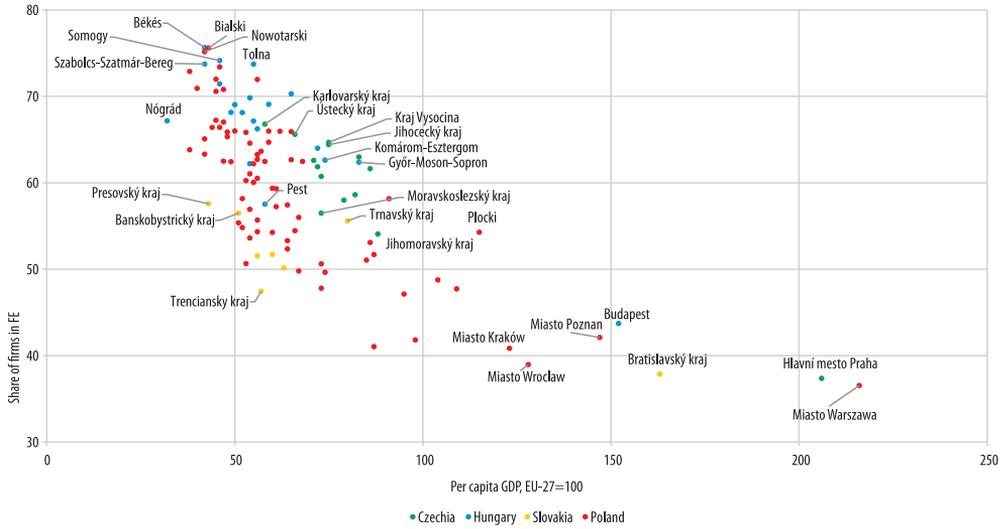


Fig. A1. The distribution of the number of firms among the economic activities by NUTS3 regions. *Source:* Authors’ own elaboration based on Orbis and Eurostat data.

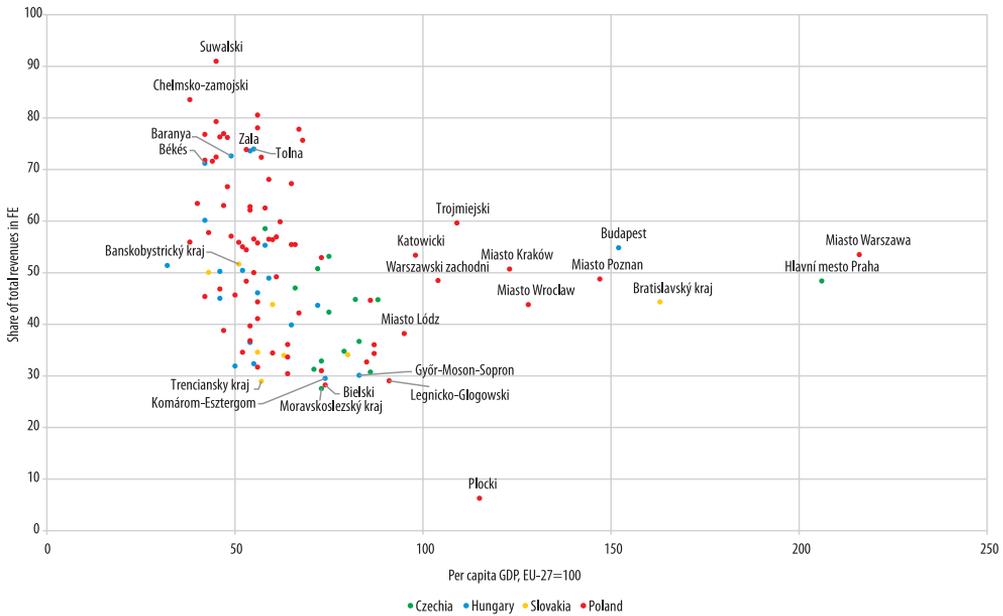


Fig. A2. The distribution of the revenues among the economic activities by region types. *Source:* Authors’ own elaboration based on Orbis and Eurostat data.

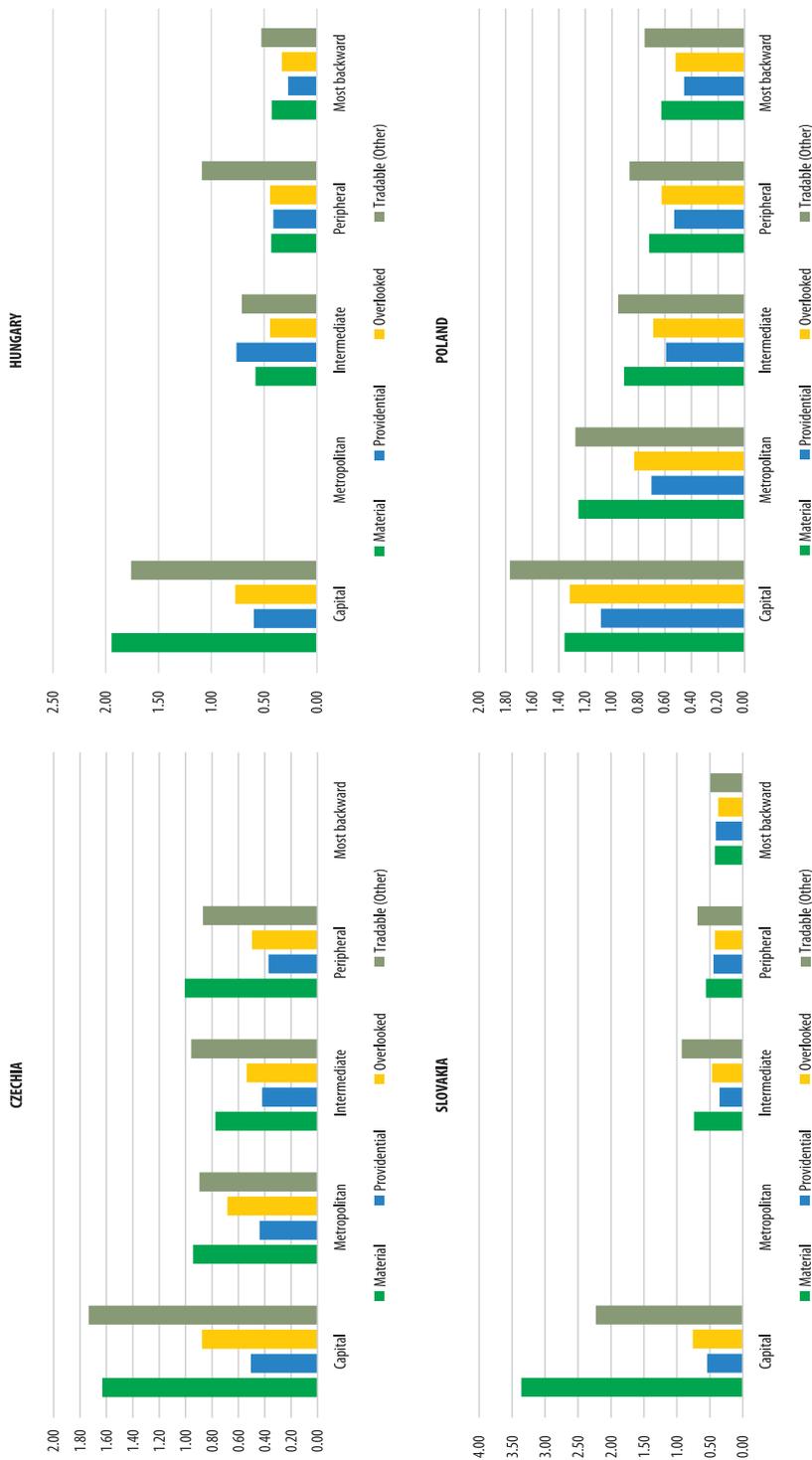


Fig. A3. Value-added-based labour productivity (average of three measures). Source: Authors' own elaboration based on Orbis and Eurostat data.

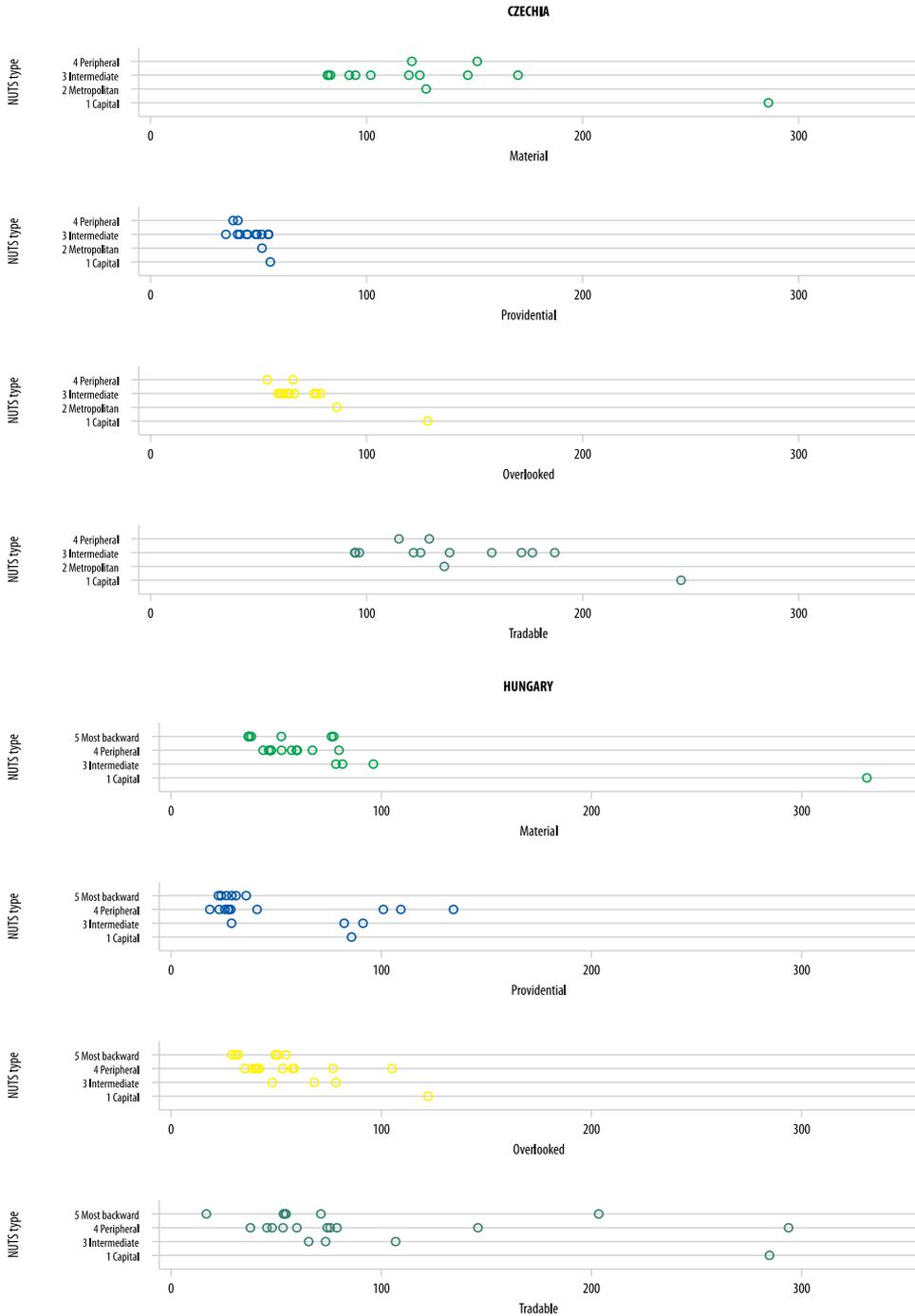


Fig. A4. Average value-added-based labour productivity of the NUTS3 regions by countries, region types and activity types (1,000 USD). *Source:* Authors' own elaboration based on Orbis and Eurostat data.

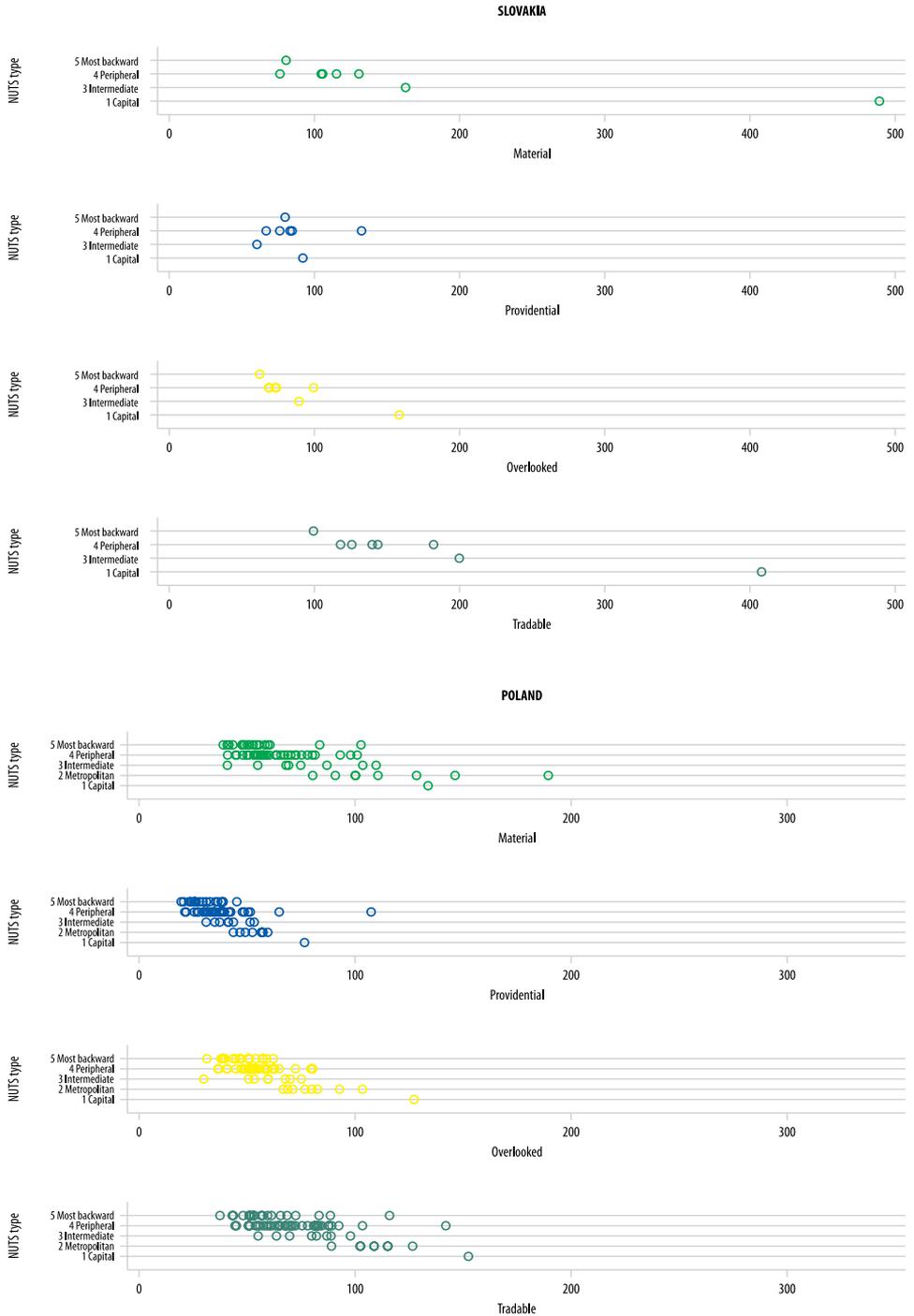


Fig. A4. Continued.

