

THE ROLE OF THE FOUNDATIONAL ECONOMY: THE CASE OF TWO REGIONAL CENTRES IN CENTRAL AND EASTERN EUROPE

Zsuzsanna ZSIBÓK^a, Ildikó EGYED^b

^aCentre for Economic and Regional Studies Institute for Regional Studies, zsibok.zsuzsanna@krtk.hu

^bCentre for Economic and Regional Studies Institute for Regional Studies, egyed.ildiko@krtk.hu

Cite this article: Zsibók, Z., Egyed, I. (2022). The role of the foundational economy: The case of two regional centres in Central and Eastern Europe. *Deturope*, 14(3), 34-64.

Abstract

Our comparative research examines the changes in the economic position of two rural regional centres, Cluj-Napoca and Pécs, in the post-crisis period. The focus of our interest is the sectoral structure of the local economies in the light of the concept of 'foundational economy'. Our empirical research covers data from the largest local firms in each of the two cities, as well as regionally aggregated data, analysed from a labour productivity perspective with exploratory statistical methods. The source of our data is the Orbis Europe enterprise database, supplemented by EuroStat data at regional level. Our results suggest that due to the large weight of the foundational economy in both cities, it should be considered an important driver of long-term territorial development and local well-being. There are several sectors in the local economy of the two cities where some activities of the foundational economy excel in productivity, thus we cannot establish a direct contradiction between the high weight of the foundational economy and lower efficiency.

Keywords: labour productivity, foundational economy, regional growth, urban dynamics, Central and Eastern Europe

INTRODUCTION

The decade after the financial and economic crisis has brought new economic development challenges for Central and Eastern European 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 middle of the 2010s (NBH, 2016), which was brought to an end by the coronavirus crisis. Capital regions have been the uncontested winners of this process, but non-capital regions have also been able to gain strength, albeit to a lesser extent. Territorial disparities peaked right after the global financial and economic crisis (in 2009 in Hungary and in 2011 in Romania), but their decline came to a halt after 2015.

An important change occurred during the 2010s, namely, that the unemployment problem in the Central and Eastern European countries, prevalent after the transition and the global financial and economic crisis, has turned into the reverse, with labour shortage becoming an increasing hindrance to growth. In addition to intensive job-creating investments (especially in the lower value-added segments), there has been an overall improvement in labour market

indicators across the regions, triggering remarkable inter-regional convergence in this respect. As a result, this situation leaves limited scope for further economic development and territorial rebalancing relying on labour market expansion (see Győri, 2021), and it necessitates a more focussed implementation of efficiency-oriented territorial development policies (NBH, 2022). Increasing productivity is crucial for the development of a region from the point of view of income generation and the well-being of its population. Unfortunately, evidence of the widening gap between frontier firms and the rest indicates that knowledge diffusion, especially in the services sector, cannot be taken for granted. The OECD's (2015, 3) document states that "Future growth will largely depend on our ability to revive the diffusion machine, both within and across countries [...] by more effectively allocating human talent to jobs". Evidently, urban dynamics play a pivotal role in the economic performance of regions, whereas second-tier or smaller cities could attempt to attain agglomeration advantages while mitigating the disadvantages through a different spatial structure in which their efforts and sizes are bundled (Ouwehand et al., 2022; Rechnitzer & Berkes, 2021; Tache et al., 2016).

Whereas the productivity challenges that appeared after the global financial and economic crisis (Askenazy et al., 2016) have a clear regional dimension (Tsvetkova et al., 2020), the corporate sector has an ultimate role in determining regional productivity. Proximity and granularity (Altomonte & Békés, 2016) mean that the economic fortune of regions and nations is increasingly driven by a handful of large firms. The privatization or dissolution of potential national champions after the regime change and the weakness of domestic mid-sized firms (Lux, 2020) leave scant alternatives for reindustrialization other than the FDI-driven model of the so-called "dependent market economies" (Bohle & Greskovits, 2006; Rácz, 2019). Foreign multinational enterprises are at the forefront of market-driven reindustrialization, the pattern of which is highly heterogenous across the regions (Lengyel et al., 2016).

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 (Galgóczi et al., 2015; Nick et al., 2019; Egyed & Rácz, 2020). The contribution of foreign affiliates to value added exceeded 50 percent in Romania and around 40 percent in Hungary in 2018 (Grieverson et al., 2021). However, compared to other urban centres in Romania, Cluj maintains a favorable balance between the corporate sector of foreign-owned firms (approx. 20%) and the local entrepreneurial sector (80%). Thus, the entrepreneurial environment relies significantly on local entrepreneurs, boosting the creation of 102 startups annually (SIDU Cluj 2021-2030). The dominance of manufacturing production by the automotive sector, accounting

for 15 percent of jobs in Romania and 13 percent in Hungary, places industrial diversification at the top of the agenda of domestic industrial policy. Muraközy et al. (2018) warn that not only the large productivity gap between the frontier firms (defined as the top 5% firms in terms of productivity performance) and the rest (i.e. the long tail of laggard firms) is a problem for the aggregate economic performance in Hungary, but also the generally weak productivity of the frontiers itself. A well-developed diffusion infrastructure (such as the much vaunted Fraunhofer Institutes in Germany) to help non-frontiers adopt innovation could prevent this gap from growing wider.

Monfort (2020) shows that in most European countries the contribution of labour productivity disparities to per capita GDP dispersion is above 90 per cent, because regional disparities in terms of labour productivity have increased while disparities in regional labour markets have decreased. Actually, Romania and Hungary are among the top countries in this respect (with well above 95 percent contribution of labour productivity to total per capita GDP disparities). From this it follows that in a labour-scarce environment labour market policies play a marginal role in further reducing regional disparities, while rebalancing labour productivity is of key importance. A large part of labour productivity disparities can be explained by structural effects, namely, that companies of larger size and foreign ownership have a significant productivity advantage over smaller, local companies (Muraközy et al., 2018). Domestic SMEs in Romania have an average productivity three times below the EU average, and display a lower capacity to absorb technology relative to foreign-owned firms, as highlighted by the EC (2022). The low level of immaterial investments by European standards, especially in manufacturing and ICT, undermines domestic firms' ability to access knowledge and skills vital for increasing their productivity. Furthermore, local productivity spillovers are weak due to the absence of local capacity for technology adoption (Éltető & Alguacil, 2020). Foreign-controlled companies accounted for 47.4% and 44.7% of gross value added in Hungary and Romania, respectively, in 2018, and foreign-owned firms have a productivity advantage of twofold over domestic firms regarding the value added per employee (HCSO, 2020). The distribution of foreign-owned, larger companies is highly concentrated in space in both Hungary and Romania: the capital city, Budapest accounted for 44.8 percent of the FDI stock (net liabilities) in Hungary and the Bucharest-Ilfov region accounted for 61.8% of the FDI stock in Romania in 2020 (HCSO, 2022 and Statista, 2022), however, Cluj shows a much better position than Baranya county in this respect. In line with the literature we assume that within-sector productivity differentials have a larger role than between-sector disparities. Andrews et al. (2019) state that aggregate productivity and differences thereof across countries are

increasingly being linked to the widespread heterogeneity in firm performance within countries and sectors.

However, we believe that the way through which productivity improvement is achieved is not indifferent to the long-term development of a region and the well-being of its inhabitants (just to mention, e.g. the role of inclusive growth, see OECD 2014). The spatial distribution of the most productive frontier companies will by their very nature not be even, so a broader approach to the economic development of all regions, both advanced and lagging, is worth considering. A similar approach appeared in the paper of Lux (2021) on the role of “hidden sectors” in the manufacturing industry of Pécs.³ A useful idea behind local and regional development models is the notion of the “foundational economy” developed by the Manchester School (Froud et al., 2018a). In this setting, the literature differentiates between the “tradable” economy consisting of competitive, R&D intensive, high-tech industries and the “foundational economy”, which is the “part of the economy that creates and distributes goods and services consumed by all (regardless of income and status) because they support everyday life” (Bentham et al., 2013, 7). The foundational economy “includes the provision of necessities by sectors such as health and welfare services, education, transportation, utilities, and food processing and retailing. The foundational economy approach also entails a different understanding of innovation, which is less focused on developing new technical innovations, but rather emphasizes the social consequences of innovations and the ways they are developed and diffused” (Hansen, 2021, 2).

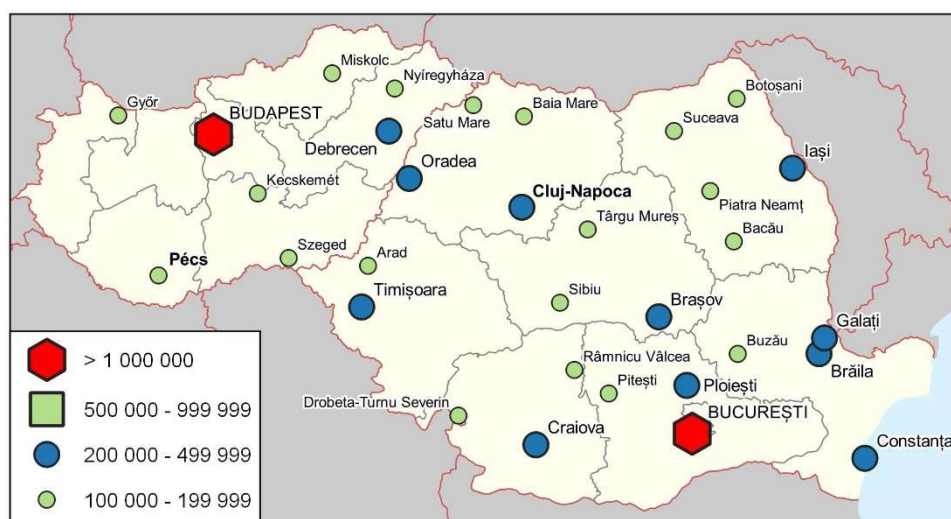
Our comparative research examines the changes in the economic position of two rural regional centres, Cluj-Napoca and Pécs, in the period following the financial and economic crisis, and highlights the role of the foundational economy. Our research aims to identify the main differences between the economic environment of the two cities and their respective regions and the development opportunities that are available for them in the middle and longer-term. We intend to analyse this question at the meso (regional) and the micro (firm) level.

Our research is a part of a multiannual research program that studies the local resource endowment of Pécs and Cluj-Napoca in a comparative approach (see also Zsibók & Egyed, 2022; Dragan, 2019). The main objective of the research programme is to promote knowledge exchange between the two collaborating institutions. The selection of these two cities can be justified for a number of reasons but it is not ideal from some other aspects. The economic development of post-transition countries is heavily dominated by the performance of the capital

³ The author refers to the hidden sectors as economic activities which are obscured by other, locally dominant development patterns.

cities, although second-tier cities, as growth poles, are also important development drivers, particularly in the case of Cluj-Napoca and to a lesser extent in Pécs. However, a major difference is the quasi-absence of the second level of the urban pyramid, – the category of large towns with a population of 300,000 to 500,000 in the Hungarian settlement network (see Fig. 1). Pécs is a medium-sized city according to EU standards with a population between 100,000 to 200,000 and is lacking scale and international visibility (Somlyódyne Pfeil, 2014). An important common feature of Pécs and Cluj-Napoca is their remoteness from the capital, which means that they economically stand out in an isolated way from their wider environment, nevertheless, their direct cross-border activities are not significant due to the economic weakness of their surrounding cross-border region. Cluj-Napoca and its region, Cluj county is the second most developed area after the Romanian capital city and it follows a stable growth path. The same cannot be stated for the deindustrialized, shrinking, rural university city of Pécs and its region, Baranya county, located in a weak economic environment, and its economy showing signs of stagnation rather than expansion (see e.g. Berkes, 2020). In this research we intend to gain insight into the development potential of second-tier cities, which are themselves developed, but whose regional hinterland is underdeveloped. The novelty of our research is that the Orbis Europe database has been in use for a relatively short time in the Hungarian academic community (see e.g. Muraközy et al., 2018), especially in the field of regional studies, although it has a longer history in international literature (Gal, 2013), and it allows us to dig deeper into productivity analysis than the standard regional-level data. Also, the foundational economy approach is not widely adopted in Central and Eastern European regional science literature (Hansen, 2021). An important starting point for a comparative analysis of the two cities is the fact that while the economy of one city, Pécs, relies heavily on the presence of the public sector, the private sector is stronger in the other, Cluj-Napoca. Our preliminary expectation is that this will also be reflected in regional or local productivity performance, and the contrast between the two regions in terms of the role of the foundational economy will become clearer.

In this article, we intend to study the above-described processes through several explorative statistics at the regional level and combine them with insights from firm-level data. The second section of our study summarizes the theoretical context. Then, we introduce our database and the methodology applied, and the results will be presented in the following section. The last section concludes and establishes the proposed directions of further research.

Figure 1 Towns and cities with population over 100,000 in Hungary and Romania, 2018

Source: created by Tamás Szabó (CERS IRS) based on Eurostat data

THEORETICAL BACKGROUND

As pointed out by Venables (2020), localization economies (i.e. knowledge spillovers, labour market pooling and specialized suppliers) in the production of internationally tradable goods generate two types of cities, those producing tradables (e.g. manufacturing) and cities specialized in non-tradable sectors (e.g. public sector or restaurants) that serve social needs. Bachtler et al. (2019) note that approx. two-thirds of EU economies are in non-tradable sectors, the majority located in large cities concentrating high value added sectors. Lacking the critical mass for specialized services, smaller cities and rural areas that only produce tradables show a limited scope of adjustment and greater vulnerability to globalisation shocks (see Hajdú et al., 2017). Local and regional development strategies aligned to the objectives of mainstream industrial policy focus on the tradable sectors of the economy, favoring leading edge firms in knowledge intensive sectors and advanced manufacturing, but neglect the residentiary economy that is more sheltered from competition and provides „stabilizers”, i.e. jobs in local production and services sectors. Countering the hegemonic notion of the disembodied and agglomerative “competitive city” or “entrepreneurial city”, alternative conceptualizations of the “grounded city” have been proposed, focusing on goods and services that are vital for daily life rather than luxury goods or non-essential services (Engelen et al., 2017; Hall & Schafran, 2017; Thompson et al., 2020; Essletzbichler, 2022).

Competitiveness strategies under the neoliberal agenda lead to a growing geographic concentration of prosperity and jobs in the most developed growth poles of the EU, accentuating spatial polarisation processes between wealthy agglomerations and the “rest” (see Feldman et

al., 2021). The erroneous assumption of earlier planning approaches, likened to spatial engineering, was that planning could determine where growth should happen and also stimulate it (Farágó & Lux, 2014). The shift from spatial planning and coordination in economic development policies to *competitive regionalism* led to the emergence of regions as economic, social, and political constructs, structured by big cities functioning as natural poles of growth (Keating, 2013). Unsurprisingly, competitive regionalism, i.e. decentralization without equalization and péréquation mechanisms, favors businesses in prosperous regions and not the traditional small business class in peripheral regions. Neo-mercantilist policies grounded in the same levers of growth produce a race-to-the-bottom by offering generous tax incentives and subsidies to attract inward capital, prioritizing business interests at the expense of local governments and the local population (Gál & Lux, 2022). This is increasingly evident in the prioritization of mega investments in the newly designated “special economic zones” (Government Decree no. 135/2020) in Hungary, a popular yet controversial state-financed industrial policy tool implemented in the least developed regions and extensively analyzed in the context of emerging and peripheral countries (see World Bank, 2017; ESPON, 2020; Szabó et al., 2021). The main role of SEZs, as specified by governmental discourse, is to foster priority investments to be successfully implemented in a given area, while surplus tax revenues may finance the development of the affected municipalities. A study on local governments’ role in FDI attraction (Kolin-Sabján & Kolin, 2021, 28) defines their *raison-d'être* as “ensuring the coordination of developments in a given area, the efficient organization of priority investments and to promote the development of supplier and innovative linkages, more generally, cooperation with firms and businesses”. In the case of the three SEZs to date in Göd, Fejér County and Mosonmagyaróvár that are home to greenfield investments of a min. of HUF 5 bn, county governments – as the quasi extended hands of the central state – are entitled to retain 20 percent of the professional tax collected from major taxpayers and spend the remaining part on territorial development. County-level fiscal péréquation may produce a higher level of territorial cohesion, yet the affected local governments, stripped of the right to collect professional taxes on the territory of the SEZ⁴, interpret the decree as a serious cutback on their autonomy and revenues. Similarly to their predecessors, SEZs are privileged tools of economic development, and, in line with the main tenets of competitive regionalism, assume the commonality of territorial interests targeting growth.⁵ Conversely, foundational approaches emphasize the socioeconomic foundations of urban economies, those essential services that

⁴ see Par. 7 of Government Decree 136/2020 (IV. 17.)

⁵ For a recent summary of local business and economic development tools see e.g. Horeczki & Mezei (2020).

generate social value and jobs over short-termist pro-business policies targeting productive sectors. Considering that future economic development is more and more dependent on the qualitative contribution of production factors instead of extensive growth, as explained in the introductory section, we do not believe that the public sector has a crowding-out effect with regard to private sector economic performance. Indeed, a well-functioning public sector, or in a broader sense, a “foundational economy“ (see Bentham et al., 2013 and Russell et al., 2022) is necessary for the whole regional and local economy to work efficiently (Birch & Cumbers, 2007).

The foundational approach breaks with the singular notion of „the economy“, arguing that there are multiple economies and zones of activities that show very different features. The foundational economy, covered only partly by major databases yet a source of roughly 40 percent of jobs in national economies in Europe, produces goods and services that provide the infrastructure of everyday life. These can be organized into the *providential* services of health and social care, education; and the *material* services that deliver “essential need satisfiers“ such as utility supply, public transport, telecommunications, food, or banking services, in modern market economies distributed through networks and branches. Foundation goods and services show a number of common features that include, among others: immobility, local delivery (they usually require face-to face communication), universality (all citizens consume them regardless of income, job or status). The foundational economy has a higher relevance for peripheral, left-behind regions, as demand for such services is non-cyclical. Research has also pointed to a negative relationship between the size of the foundational economy in regions and employment growth, moreover, a larger foundational economy was found to be more damaging for regions with increasing population than for depopulating regions (see Martynovich et al., 2022). The literature mentions a distinct but overlapping category, i.e. the „overlooked economy“ of low-tech services that are culturally defined as essential for daily life, such as haircuts, house repairs, holidays from work or a meal out (Berry, 2017). In a foundational perspective, 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. Foundational liveability or the residual income after housing costs, as Froud et al. (2018b) puts it, should be the primary concern of economic policy as citizens’ well-being depends on the adequacy, affordability and continuous supply of foundational daily services. Stanley (2020) argues that these sectors are overlooked because society tends to undervalue reproductive labor.

The foundational approach resonates with Braudel’s tripartite division of society in which the economy is constituted by various autonomous and overlapping layers: the informal or

subsistence economy; the local economy of embedded institutions and SMEs; and the world economy of global exchange and large firms (Braudel, 1979; Thompson et al., 2020). The foundational perspective recognizes the role of other regulatory forms (e.g. reciprocity, mutualism and redistribution) besides market coordination, and, to avoid the local trap, it proposes a multiscalar and overlapping approach for the regulation of economic activities (local/territorial/national). Froud et al. (2018a) stress as its main virtue the potential to restore the social value of labor and the tacit skills of citizens (e.g. those employed in care). Contrary to the GDP methodology, it treats firms providing welfare critical foundation services as belonging to the public domain, regardless of ownership. The foundationalist strand helps overcome the shortcomings of previous territorial approaches to the management of local commons by demonstrating the benefits of social differences in the production of collective goods and services.

Bentham et al. (2013) treat the foundational economy as the basis of a new approach to employment creation aimed at *enhancing the quality of jobs* in so-called low value or “low-wage sectors“ and not simply on their numerical increase (see Forth and Rincon Aznar 2018). The failure of the desired high tech frontier firms to diffuse within and between regions has prompted calls to include overlooked sectors in economic development and industrial strategies. As noted by Morgan (2021), the EU debate was centred on the role of new industrial policies and increased state interventionism preceding the coronavirus crisis, largely overlooking the fate of regions and cities that fell outside the scope of mission-oriented industrial policies. The foundational economy, due to its socially and spatially inclusive nature, can deliver much benefit for left-behind regions and cities, saving them from the circular and mutually reinforcing spiral of deterioration (MacKinnon et al., 2021; see also Froud et al., 2020; Martynovich et al., 2022). Moreover, improving the productivity of “ordinary firms” in the everyday economy would result in more regionally balanced growth than an exclusive focus on frontier firms that are highly concentrated spatially (see Jacobs et al., 2017), as the regional productivity gap in the case of foundational activities is not at all significant. This would allow deindustrialized lagging regions to break out of the low innovation, low skills, low productivity equilibrium that they are trapped in, and also to avoid getting into a race-to-the-bottom situation.

The social welfarist orientation of the foundational economy, with its emphasis on human capital and social investments, is particularly well-suited to the needs of shrinking cities facing a loss of jobs, companies and population (see Bowman et al., 2014). The debate on shrinking cities originated in Germany, as did the twin notion of “perforated cities”, a new urban development model under the specific conditions of shrinkage, combining urban decline and

sprawl (Lütke-Daldrup, 2001). Pécs is emblematic of this fate, having endured shrinkage, both economic and demographic, since its post-socialist transformation. Cluj-Napoca, on the other hand, is among the top youngest cities in Europe, with a third of its population being students. Situated in one of Romania's most dynamic urban regions, Cluj is a large and fast growing city⁶ recording high rates of income and employment growth (Fina et al., 2021; SIDU Cluj 2021-2030). In fact, the surrounding areas of Cluj-Napoca have been much less affected by external migration than rural areas that are far from large cities (World Bank, 2019). The phenomenon of urban shrinkage is attributed, among others, to factors such as deindustrialization (Popescu, 2014; Mihail et al., 2021), parasitic urbanization or counterurbanization (Berry, 1977), political changes (post-socialism) (Oswalt, 2005), technological change, increasingly footloose capital and ever shorter innovation cycles (Fol & Cunningham-Sabot, 2010). Haase (2016, 90) describes this downward spiral as the place-specific interplay of economic transformation, suburbanization and demographic change that lead to population decline, producing what Castells (2000) refers to as "black holes", i.e. peripheral places isolated from the global circuits of capital, labour mobility and knowledge exchange, within their national and the global urban network (Hadjimichalis, 2011).

As an alternative to inward investment strategies using public resources to attract foreign-owned branch plants, cohesion policies targeting economic revitalization in peripheral areas under RIS3 aim to connect local business networks to international knowledge networks, often through a reconfiguration of value chains. With the introduction of the Smart Specialization approach, EU policy under the 2014-20 cycle has come to be seen as a growth-driven policy or regional innovation policy aimed at increasing local business competitiveness through strategic diversification in under-performing regions. As Froud et al. (2020) note, regional or industrial policies aimed at raising productivity are of little relevance in the context of foundational or mundane activities characterized by low skills and low productivity. Hansen (2021) suggests that the meaning of development itself should be reconsidered in the context of the foundational economy, as its aim is to directly contribute to raising social standards rather than producing more competitive industries. Due to the unequal distribution of the benefits of innovation-led development, widening productivity differentials between dynamic core and peripheral lagging regions should result in lower social standards for the latter. However, research has pointed to

⁶ The Cluj Metropolitan Area recorded a 7.7% population growth between 2014 and 2020, while at the national level it decreased by 0.8%. The population growth of Cluj Metropolitan Area was almost double that of the Bucharest-Ilfov region (+4.2%), attributable to the positive balance of internal migration (see SIDU Cluj 2021-2030).

a growing disconnect between productivity-driven regional growth (as measured by GDP) and wages and living standards, as a result of the massive redistribution of regional revenues linked to retirement, welfare, and lifestyle migration processes in the context of counter-urbanization.⁷ This highlights the greater potential of the foundation sectors to contribute to regional economic rebalancing than reindustrialization through developing locally-based manufacturing, though without incrementing GDP (Davezies, 2009; Bailey et al., 2015).

DATA AND METHODS

Our empirical research covers data on the largest local firms (in terms of operating revenue and employment) in each of the two cities, analysed from a labour productivity perspective. We take into account the 200 largest enterprises from both cities. The source of our data is the Orbis Europe enterprise database, supplemented by EuroStat data at regional (NUTS2 and NUTS3) level (Tab.1). Our aim is to assess local trends not only in cross-section but also in terms of their dynamics over time, we therefore analyse the data for the period between the two crises. Firm-level data are available for the 2013 to 2020 period. Due to the incomplete data coverage, we considered those companies that have available data for the year 2020, but the time-series are not complete for the previous years. In 2013, around 40 percent of the data are missing, and the coverage improves with time to around 90 percent in 2019 in both cities (and the coverage is full for the year 2020). The extracted information includes the company name, the 4-digit NACE Rev. 2 core code, the operating revenue in US dollars and the number of employees.

Table 1 Summary of the data and methods used

Level of analysis	NUTS3	Municipality
Data source	Eurostat, AMECO	Orbis Europe, AMECO
Time span	2009-2020	2013-2020
Indicators	Gross value added, employees	Operating revenues, employees
Calculation of labour productivity	GVA/employed persons	Operating revenue/employees
Sectoral disaggregation	NACE alphabetical codes	4-digit NACE Rev. 2 codes
Spatial coverage	Baranya, Cluj	Pécs, Cluj-Napoca

Source: Authors' elaboration

⁷ Particularly in the case of amenity regions. A main priority area of the Pécs pole quality of life (2005) programme was to create a competitive advantage for the region based on its complex environmental, cultural and health assets, to capture alternative sources of revenues for the regional economy from a specific cohort of the silver economy (wealthy retirees in search of alternatives to metropolitan living), which restores the value of the foundational economy.

Eurostat publishes gross value added (GVA) data and employment data at the NUTS3 level in a sectoral decomposition for the period between 2000 and 2020.⁸ Also, the available firm-level data allow us to distinguish between the different sectors in which the firms operate. In order to study the working of the foundational economy in each region and city, we need to identify those economic activities that belong to the different “zones“ of the economy. A detailed classification published on the website of *The Foundational Economy collective*⁹ will help us to do this. The classification assigns to each economic activity identified by the NACE Rev. 2 codes their type according to which part of the economy they belong. The three categories within the foundational economy are the material activities, the providential activities and the overlooked economy, which are supplemented by the tradable economy. In the case of the broader sectoral classification which is available at the NUTS3 level (at the section level of activities, marked by alphabetical codes from A to U¹⁰) the distinction between the activities is not clear, therefore, in this case we can only make a very rough distinction.¹¹ Also, we do not differentiate between material, overlooked and providential activities within the foundational economy in the case of NUTS3 level analyses, but treat them together, and classify the sectors as foundational and tradable activities. We propose that the foundational economy include sectors A, B-E, F, G-I, O-Q and R-U, while sectors J, K, L, M-N may belong to the tradable economy. It has to be kept in mind that employment and output are supply side measures, but the foundational economy is best defined from the consumption side, through the use of the products or services (considering household expenditures).¹²

When calculating temporal dynamics, it is useful to evaluate GVA and revenue data at constant prices. For this purpose, we use the GDP deflator published in the AMECO database which is available at the national level. It is common in the literature that regional price levels are approximated by their national-level counterparts due to data limitations (see e.g. Rokicki

⁸ Gross value added at basic prices by NUTS 3 regions (online data code: NAMA_10R_3GVA) and Employment (thousand persons) by NUTS 3 regions (online data code: NAMA_10R_3EMPERS).

⁹ <https://foundationaleconomy.com/activity-classification/>

¹⁰ The codes and labels of the activities according to NACE Rev. 2 at the section level are as follows (see European Communities, 2008): A: Agriculture, forestry and fishing; B-E: Industry (except construction); F: Construction; G-I: Wholesale and retail trade, transport, accommodation and food service activities; J: Information and communication; K-N: Financial and insurance activities; real estate activities; professional, scientific and technical activities; administrative and support service activities; O-Q: Public administration, defence, education, human health and social work activities; R-U: Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies.

¹¹ Moreover, detailed GVA data are not available for the sectors K, L, M-N in Romania at Eurostat, only data aggregated to K-N together.

¹² see the above-cited resource

& Hewings, 2019). With the deflator we convert the values so that the price level in the year 2015 represents 100.

Labour productivity at the regional level is measured as the ratio of regional GDP (or GVA) to the number of persons employed. Unfortunately, we do not have data for the hours worked and cannot distinguish between full-time and part-time employment. In parallel, as an approximation for labour productivity at the firm level we use the ratio of revenues to the number of employees. Gal (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. A company with substantial reselling activity (e.g. retail companies) will probably rank very high in this measure. Value added based labour productivity takes care of this problem, as value added in itself is the difference between output (sales or revenue) and intermediate inputs (including resold goods, typical in retail trade). However, labour productivity does not control for differences in capital intensity across firms, therefore, in order to control for capital intensity, total factor productivity (TFP) should be calculated. In this phase of our research we use revenue-based labour productivity at the firm level, because otherwise we would have to give up nearly half of our database.

RESULTS AND DISCUSSION

During the 2010s, the external and internal economic environment supported the convergence of Central and Eastern European countries and regions towards the EU average level of development (measured in GDP per capita). However, this convergence was not accompanied by a tangible reduction in territorial disparities, as territorial convergence, having mostly been driven by a reduction in disparities between nations, came to a halt in 2015, while territorial disparities within countries have remained persistently high (Monfort, 2020; Benedek, 2019; Norton et al., 2022). In this section we first focus on the relative position of Baranya county and Cluj county with respect to the capital cities and the national averages between 2009 and 2019.¹³ The main variables of interest are employment, gross value added and labour productivity. Then, in the second part of the section, we shift our focus to the two cities and analyze the same aspects at the firm level. As mentioned above in the data description, at the NUTS3 level we can only distinguish the activities of the foundational economy in a very approximate way, but at the firm level we can analyze it in more detail.

¹³ NUTS3 level data for Romania are available until 2019; in Hungary, the latest available data are for 2020.

Evidence from the NUTS3 level

Tab. 2 shows the relative labour productivity of the different territorial units with respect to the country-level average, as well as their relative shares within the total national economy by sectors. The regional-level analysis indicates that in terms of labour productivity (measured by the GDP per employees at the NUTS3 level), Baranya is well below the Hungarian average level, while Cluj is above the Romanian average. In the sectors related to the foundational economy differences are similar, albeit smaller, while in the tradable economy the relative labour productivity levels are much closer to the national average in all spatial units. Baranya seems to have a relative advantage in the sectors related to the tradable economy, but in Cluj these sectors are lagging behind with respect to productivity. The distribution of production and employment is more concentrated in Hungary, the capital city having a higher share of the national output and employment than in Romania. In the foundational economy, the distribution of gross value added and employment is slightly more balanced, but the activities related to the tradable economy are highly concentrated in the capitals in both countries (Tab. 2). The foundational economy (according to our approximate definition) seems to be much more evenly distributed in Romania among the non-capital areas.

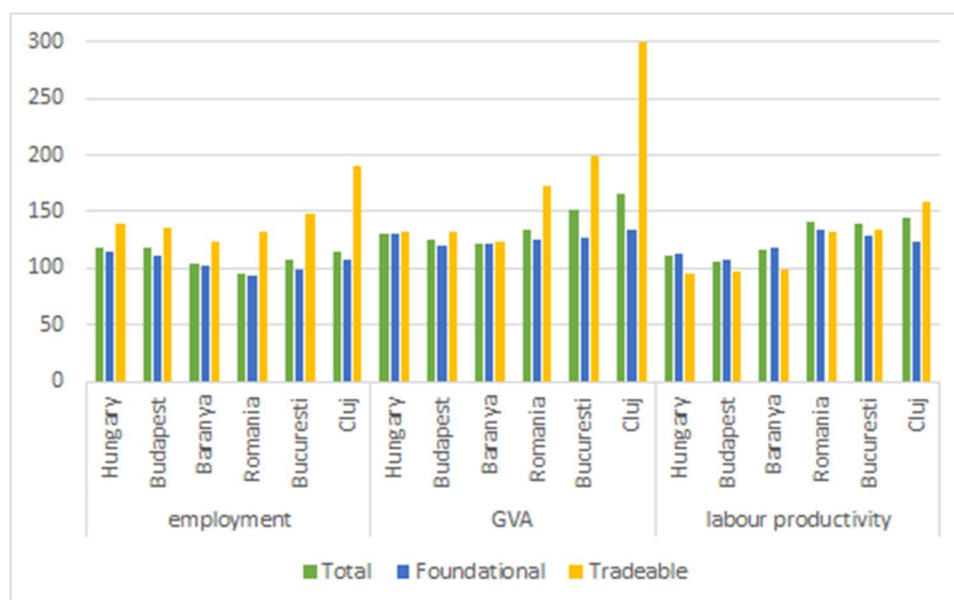
Regarding the economic dynamics, Hungary and Baranya has an advantage in employment growth over Romania and Cluj in the total economy and the foundational economy, but Cluj has a large advantage in the tradable sectors (Fig. 2). However, employment growth has not been coupled with productivity improvements in Hungary, therefore Romania and Cluj are well ahead in this respect, and Hungary's labour productivity is, indeed, stagnating, especially in the tradable sectors. These differences are observable also in the GVA.

The sectoral structure is quite different between the analysed spatial units (Tab. 2 and Tab. 3). The most striking finding is that in Baranya, the public sector (O to Q) is overrepresented in terms of both employment and GVA. The sectoral distribution of production is much more balanced in Cluj, but these differences are not obvious if we regard only the foundational *versus* tradable distinction of the “zones“ of the economy (Fig. 3). The weight of FE activities are around the same in Baranya county and Cluj county with respect to employment, but in GVA, in Cluj the FE activities have a higher weight within the total economy.

Table 2 Selected economic indicators at the NUTS3 level in Hungary and Romania by sectors, 2009-2019

	labour productivity, country average = 100								
	Total			Foundational economy			Tradable economy		
	2009	2014	2019	2009	2014	2019	2009	2014	2019
Budapest	113.3	111.8	109.0	106.9	105.5	101.8	93.5	99.0	96.0
Baranya	83.9	84.0	88.6	86.1	84.0	90.2	98.4	103.5	102.8
Bucharest	200.3	206.3	199.1	193.7	188.2	186.0	107.0	113.3	109.3
Cluj	121.3	122.2	124.9	124.8	120.4	115.0	87.6	93.6	105.2
	GVA shares, country total = 100								
	Total			Foundational economy			Tradable economy		
	2009	2014	2019	2009	2014	2019	2009	2014	2019
Budapest	38.8	37.0	37.2	31.3	29.4	29.0	57.8	58.0	57.6
Baranya	2.7	2.4	2.5	2.9	2.6	2.7	2.1	2.0	1.9
Bucharest	22.2	23.9	24.9	18.5	18.1	18.8	36.4	41.0	41.8
Cluj	4.1	4.5	5.0	4.1	4.2	4.4	4.0	5.2	6.9
	employment shares, country total = 100								
	Total			Foundational economy			Tradable economy		
	2009	2014	2019	2009	2014	2019	2009	2014	2019
Budapest	34.3	33.1	34.1	29.3	27.9	28.4	61.9	58.6	60.0
Baranya	3.2	2.9	2.8	3.4	3.1	3.0	2.1	1.9	1.9
Bucharest	11.1	11.6	12.5	9.6	9.6	10.1	34.0	36.2	38.3
Cluj	3.3	3.7	4.0	3.3	3.5	3.8	4.6	5.6	6.6

Source: Authors' elaboration based on Eurostat data

Figure 2 Employment, GVA and labour productivity growth at the national and the NUTS3 level by sectors (2009 = 100)

Source: Authors' elaboration based on Eurostat data

Table 3 Distribution of GVA between the different sectors at various spatial levels in Hungary and Romania in 2019, percentages

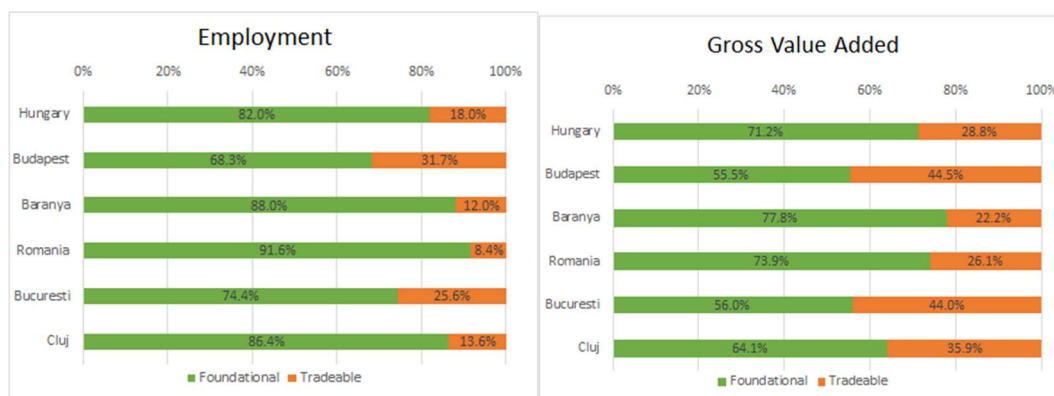
	A	B-E	F	G-I	J	K-N	O-Q	R-U
Hungary	3.9	23.6	5.7	18.3	4.9	23.8	16.7	3.0
Budapest	0.2	11.6	3.7	20.6	9.5	35.0	15.7	3.6
Baranya	8.2	19.1	6.6	15.4	3.0	19.2	24.9	3.6
Romania	4.6	23.3	6.5	20.3	6.3	19.8	15.7	3.5
Bucuresti	0.5	12.9	6.4	18.9	14.1	29.9	12.6	4.6
Cluj	1.7	19.2	6.5	18.7	15.5	20.4	14.1	3.9

Source: Authors' elaboration based on Eurostat data

Table 4 Distribution of employment between the different sectors at various spatial levels in Hungary and Romania in 2019, percentages

	A	B-E	F	G-I	J	K-N	O-Q	R-U
Hungary	4.0	20.8	7.6	24.0	3.3	14.7	21.0	4.6
Budapest	0.2	9.0	5.7	25.2	7.2	24.5	22.7	5.5
Baranya	7.2	18.5	8.0	20.5	1.9	10.0	28.6	5.2
Romania	22.3	21.5	8.3	23.1	2.0	6.3	13.6	2.9
Bucuresti	0.4	8.8	9.0	30.6	8.6	17.0	20.1	5.5
Cluj	8.7	21.4	8.8	29.6	3.0	10.6	15.3	2.6

Source: Authors' elaboration based on Eurostat data

Figure 3 The distribution of employment and gross value added between the different sectors, 2019

Source: Authors' elaboration based on Eurostat data

As a result of the uneven sectoral distribution of employment and gross value added, labour productivity also differs between sectors in the analysed spatial units. Since we evaluate gross value added in national currencies, we analyse the data in relative terms and not in absolute numbers. Tab. 5 and Tab. 6 indicate the relative sectoral labour productivity values *vis-à-vis* the national average and the total economy's average, respectively. Our calculations (Tab. 5) show that Baranya has a slight relative advantage over national-level productivity in the

financial, real estate, professional, scientific, administrative activities (sectors K to N), and a parity in the primary sector (A), but it lags far behind in the industrial sector (B to E) and in comparison to the total economy as well. Cluj has a considerable advantage over the Romanian average labour productivity in the info-communication sector (J) and the arts and entertainment sector (R to U), as well as the primary sector (A) and the construction sector (F). It falls below the average in the financial, real estate, professional, scientific, administrative sectors (K to N), but has an astounding overall advantage in the total economy. Regarding our proposed distinction of the different “zones” of the economy, the foundational economy is less productive than the national average in Baranya, but the tradable economy performs comparably. Cluj has a larger productivity advantage in the foundational economy with respect to the national average than in the tradable sectors.¹⁴

Table 5 Relative sectoral labour productivity relative to the national average (=100) at various spatial units in Hungary and Romania, 2019

	Total	A	B-E	F	G-I	J	K-N	O-Q	R-U	FE	TE
Hungary	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Budapest	109.0	88.5	124.8	94.3	116.4	97.1	96.1	94.5	114.2	101.8	96.0
Baranya	88.6	100.6	81.2	98.0	86.6	92.7	104.4	97.1	94.6	90.2	102.8
Romania	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Bucuresti	199.1	1256.0	269.5	180.1	140.2	103.8	112.0	108.4	138.2	186.0	109.3
Cluj	124.9	118.0	103.5	117.7	90.0	203.3	76.9	99.9	152.0	115.0	105.2

Note: FE refers to foundational economy, TE refers to tradable economy

The primary sector (“A”) in Bucharest seems to be an outlier, since until 2015, gross value added were around or below 100 million RON, but afterwards it increased more than tenfold by 2019. Meanwhile, the employment in this sector remained at around its previous long-term trend. These unusual trends are due to the fact that companies often set up their headquarters in Bucharest for business considerations, but carry out their activities in other parts of the country.

Source: Authors’ elaboration based on Eurostat data

Table 6 Relative sectoral labour productivity relative to the total economy (=100) within various spatial units in Hungary and Romania, 2019

	Total	A	B-E	F	G-I	J	K-N	O-Q	R-U	FE	TE
Hungary	100.0	99.8	113.0	75.2	76.6	148.5	162.3	79.6	63.8	86.9	159.7
Budapest	100.0	81.1	129.4	65.1	81.8	132.4	143.1	69.0	66.9	81.2	140.6
Baranya	100.0	113.3	103.6	83.1	74.8	155.3	191.1	87.2	68.1	88.4	185.3
Romania	100.0	20.5	108.6	78.3	87.9	314.2	311.8	115.4	121.6	80.6	312.4
Bucuresti	100.0	129.1	147.1	70.8	61.9	163.8	175.4	62.8	84.4	75.3	171.5
Cluj	100.0	19.3	90.0	73.7	63.3	511.4	192.0	92.2	148.0	74.2	263.1

Note: FE refers to foundational economy, TE refers to tradable economy

Source: Authors’ elaboration based on Eurostat data

¹⁴ At first sight, one would expect that the average values of FE and TE fall around that of the Total economy, but the values of the territorial units are evaluated against different national-level averages of the FE and TE activities. The actual results depend on multiple factors, including the relative weight of the FE and TE activities within the total economy and the weight of the territorial units within the national economy.

Tab. 6 shows the relative labour productivity values obtained from a comparison of sectoral performances within the different spatial units. Baranya has a significant relative advantage in the financial, real estate, professional, scientific, administrative activities (sectors K to N), and the info-communication sector (J), and some advantage in the primary sector (A) and the industry (sectors B to E). In Cluj, by far the highest relative labour productivity *relative to* other sectors in this region is measured in the info-communication sector (J), and it has also a relative advantage in the financial, real estate, professional, scientific, administrative sectors (K to N) and the arts and entertainment sector (R to U). Other sectors are relatively less efficient in this NUTS3 region. Our proposed distinction to foundational and tradable sectors reveals large differences between these two kinds of activities. The sectors classified in the tradable economy show a large advantage over the foundational activities within the different spatial units, and these differentials are wider in the Romanian territorial units. Overall, tradable activities are much more productive in both Baranya and Cluj than those belonging to the foundational economy.

Evidence from the firm-level

Based on the Orbis Europe database we have calculated the share of the cities' economic performance within their county's economy, restricted to the 100 leading enterprises (in terms of employment and revenue) in 2019. As indicated by our results, Cluj-Napoca concentrates a larger part of Cluj county's economy than Pécs within Baranya county. 76 out of the 100 largest employer firms in Cluj county are located in Cluj-Napoca, representing 81% of their employees, and 75 out of the 100 largest companies in terms of revenue are located in Cluj-Napoca, generating 82% of their revenues. From the 100 largest employers of Baranya county only 51 are headquartered in Pécs, representing 70% of their employees, while 48 out of the 100 largest companies in Baranya in terms of revenue are located in Pécs, generating 60% of their revenues.

The Orbis Europe database listed a total of 41,574 companies in Pécs and 70,219 companies in Cluj-Napoca, respectively. In this study we restrict our analysis to the two hundred largest firms, where firm size is evaluated by revenues and the number of employees. Therefore, two company rankings are analysed in parallel. Of course, there are some overlaps between the two ranking lists: 76 out of the 200 largest companies in Cluj-Napoca and 84 out of the 200 largest companies in Pécs can be found in both lists. The other companies are among the largest ones either on the basis of their employees or revenues, but not on the basis of both measures together. The largest companies included in our analysis account for a total of 34,700 employees in Pécs and 76,800 employees in Cluj-Napoca (in the employment-based ranking), and 2,841

million dollars operating revenue in Pécs and 9,108 million dollars operating revenue in Cluj-Napoca (in the revenue-based ranking, based on the data from 2020). These numbers indicate that the economic strength of the two cities (and their regions) differs in magnitude.

The firm-level analysis points to important differences in the size of the economies of the two cities, and we have found a critical mass of high economic potential to be available in Cluj-Napoca, but absent in the case of Pécs. The most striking difference is that among the 200 largest companies, Pécs shows a clear dominance of the public sector, while Cluj-Napoca has only 1 such company (Tab. 7). However, this is partly due to shortcomings of the Orbis database, because the reporting system of public institutions is different in Romania and in Hungary. This fact has to be kept in mind while assessing the results. Pécs has no company of national or international significance, while Cluj-Napoca hosts such companies, e.g. the MOL. At the firm level, Pécs has a productivity advantage in the public sector (O-Q), while Cluj-Napoca's uncontested productivity advantage is in the private sector (Tab. 8). Concerning the distinction based on the FE-approach, the providential activities have a larger weight in the economy of Pécs than that of Cluj-Napoca¹⁵, while material activities are dominant in Cluj-Napoca, and the weight of the tradable activities is not that different in the two cities.

The highest average revenues, employment and labour productivity were measured in the material activities in Cluj-Napoca, in the largest firms by employment, but according to the revenue-based firm ranking, the largest labour productivity is in the tradable activities (see Tab. 8, Fig. 4). These data indicate that there is no full coverage between the two groups of companies according to the different measures of company size. The providential activities perform well among the largest employer firms, but the overlooked firms have a higher productivity among the companies according to the revenue-based ranking list.

The highest average revenues and labour productivity were found in the material activities in Pécs according to both types of firm size rankings. Among the largest employers, overlooked activities and tradable activities also have a good performance with respect to labour productivity, but this is not traceable in the revenue-based ranking list, where providential activities are more productive than the overlooked or tradeable activities (Tab. 9, Fig. 5).

¹⁵ taking into consideration the limitations of the database

Table 7 The distribution of the number of firms, their revenues and employees between sectors in Cluj-Napoca and Pécs in 2020 among the 200 largest companies

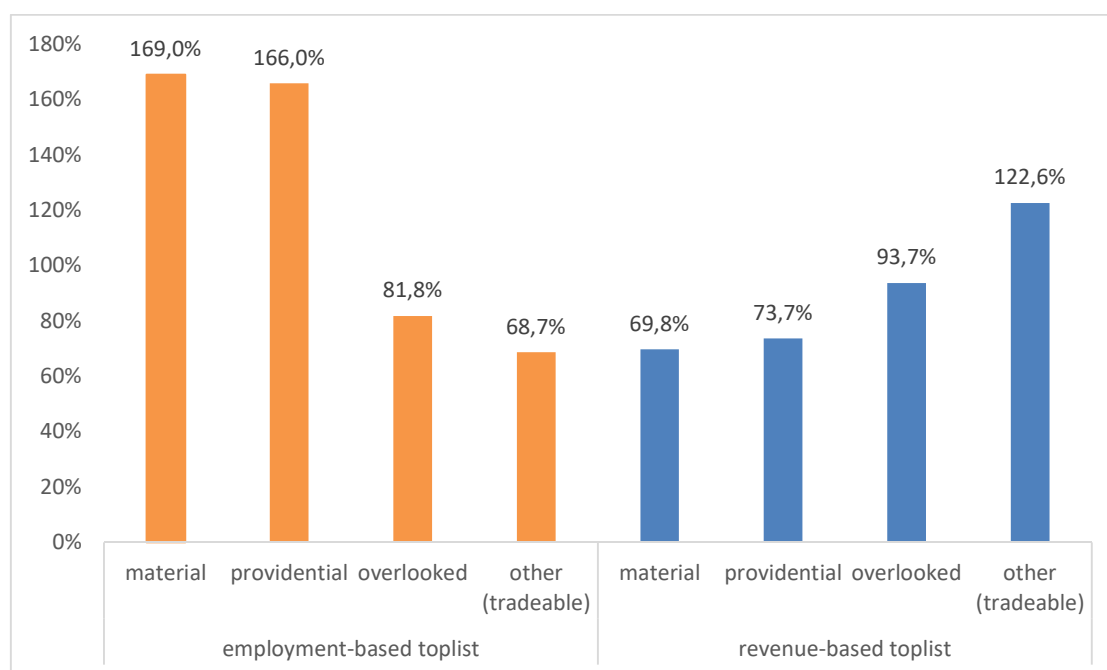
Cluj-Napoca						
Sector	Employment-based toplist			Revenue-based toplist		
	Number of firms	Revenue	Employees	Number of firms	Revenue	Employees
A	1	0.7%	0.7%	1	0.6%	0.8%
B-E	49	17.8%	29.9%	36	16.5%	30.2%
F	23	8.3%	6.8%	35	10.0%	7.4%
G-I	51	40.9%	15.9%	78	44.6%	17.6%
J	43	13.8%	20.9%	26	11.2%	20.2%
K-N	29	18.2%	24.8%	20	16.4%	22.8%
O-Q	1	0.1%	0.1%	1	0.2%	0.1%
R-U	3	0.3%	0.8%	3	0.4%	0.9%
Total	200	100.0%	100.0%	200	100.0%	100.0%
material	54	55.6%	42.2%	57	51.3%	46.0%
providential	3	1.5%	0.6%	4	1.5%	0.7%
overlooked	42	10.9%	10.8%	45	13.1%	9.6%
other (tradable)	101	32.1%	46.4%	94	34.0%	43.7%
Total	200	100.0%	100.0%	200	100.0%	100.0%
Pécs						
Sector	Employment-based toplist			Revenue-based toplist		
	Number of firms	Revenue	Employees	Number of firms	Revenue	Employees
A	1	1.0%	0.9%	2	0.9%	1.1%
B-E	58	36.2%	21.4%	52	36.6%	21.4%
F	18	3.2%	2.3%	24	3.5%	2.5%
G-I	43	26.0%	13.2%	64	26.4%	14.3%
J	4	0.3%	0.7%	6	0.8%	0.5%
K-N	35	5.1%	8.9%	24	5.3%	6.7%
O-Q	30	26.9%	49.9%	24	25.9%	51.9%
R-U	11	1.3%	2.6%	4	0.7%	1.7%
Total	200	100.0%	100.0%	200	100.0%	100.0%
material	35	35.0%	18.8%	51	38.4%	20.8%
providential	31	27.1%	50.0%	31	26.9%	52.2%
overlooked	52	10.1%	8.8%	40	9.8%	6.1%
other (tradable)	82	27.8%	22.5%	78	25.0%	20.8%
Total	200	100.0%	100.0%	200	100.0%	100.0%

Source: Authors' elaboration based on Orbis Europe data

Table 8 Revenues, the number of employees and labour productivity relative to the total economy average by sectors in Cluj-Napoca in 2020

Employment-based toplist					Revenue-based toplist				
sector	firms	revenue	employees	labour productivity	sector	firms	revenue	employees	labour productivity
A	1	135%	144%	74%	A	1	117%	164%	16%
B-E	49	73%	122%	58%	B-E	36	92%	168%	59%
F	23	72%	59%	115%	F	35	57%	43%	137%
G-I	51	160%	62%	218%	G-I	78	114%	45%	125%
J	43	64%	97%	56%	J	26	86%	155%	19%
K-N	29	125%	171%	28%	K-N	20	164%	228%	139%
O-Q	1	10%	29%	28%	O-Q	1	33%	22%	33%
R-U	3	19%	54%	24%	R-U	3	30%	58%	22%
Total	200	100%	100%	100%	Total	200	100%	100%	100%
material	54	206%	156%	169%	material	57	180%	162%	70%
providential	3	97%	41%	166%	providential	4	77%	33%	74%
overlooked	42	52%	51%	82%	overlooked	45	58%	43%	94%
other (tradable)	101	63%	92%	69%	other (tradable)	94	72%	93%	123%
Total	200	100%	100%	100%	Total	200	100%	100%	100%

Source: Authors' elaboration based on Orbis Europe data

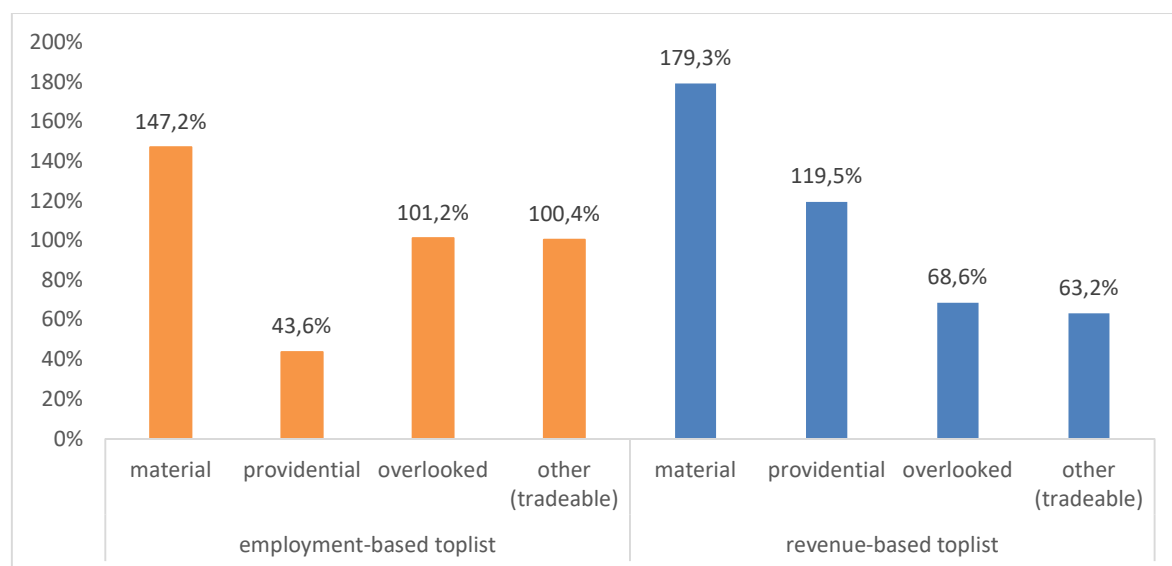
Figure 4 Relative labour productivity by sectors in Cluj-Napoca in 2020 in the largest firms according to employment and revenue (total economy = 100)

Source: Authors' elaboration based on Orbis Europe data

Table 9 Revenues, the number of employees and labour productivity relative to the total economy average by sectors in Pécs in 2020

sector	Employment-based toplist				sector	Revenue-based toplist			
	firms	revenue	employees	labour productivity		firms	revenue	employees	labour productivity
A	1	192%	181%	82%	A	2	85%	101%	27%
B-E	58	125%	74%	98%	B-E	52	141%	84%	132%
F	18	36%	26%	109%	F	24	29%	21%	48%
G-I	43	121%	61%	199%	G-I	64	82%	43%	98%
J	4	17%	35%	39%	J	6	28%	18%	46%
K-N	35	29%	51%	56%	K-N	24	44%	53%	90%
O-Q	30	179%	332%	39%	O-Q	24	216%	490%	140%
R-U	11	23%	48%	40%	R-U	4	34%	78%	11%
Total	200	100%	100%	100%	Total	200	100%	100%	100%
material	35	200%	107%	147%	material	51	150%	87%	179%
providential	31	175%	322%	44%	providential	31	173%	366%	120%
overlooked	52	39%	34%	101%	overlooked	40	49%	30%	69%
other (tradable)	82	68%	55%	100%	other (tradable)	78	64%	50%	63%
Total	200	100%	100%	100%	Total	200	100%	100%	100%

Source: Authors' elaboration based on Orbis Europe data

Figure 5 Relative labour productivity by sectors in Pécs in 2020 in the largest firms according to employment and revenue (total economy = 100)

Source: Authors' elaboration based on Orbis Europe data

To check these results in a more formal way, regression analyses were carried out. Our regression models included cities and sectors as explanatory variables in the form of dummy variables, and employment, revenue and productivity as outcome variables. The variable “city” is a dummy variable with two outcomes, Pécs and Cluj-Napoca, and the variable “sector” is a categorical variable with four outcomes: material, providential, overlooked and tradable. The categorical variable was converted to three dummy variables. That is, our models test whether the differences in the level of employment, productivity and revenues are significant between the two cities and/or the four sectors. Due to the data coverage issues, at this phase of the research we chose to analyse only the data of 2020 with the highest data availability.¹⁶ Based on the three outcome variables and the two sets of explanatory dummy variables we built six different regression models and ran them on both the employment-based toplist (Tab. 10) and the revenue-based toplist (Tab. 11); in effect, altogether twelve regressions were run. The first three regressions (Model set 1 and 4) test whether the city has a significant impact on employment, revenue or productivity.

Table 10 Regression results in the employment-based toplist

Dependent variable	Model set 1			Model set 2			Model set 3		
	employment	revenue	productivity	employment	revenue	productivity	employment	revenue	productivity
city									
Cluj-Napoca	210,52 <i>0,007</i>	28280,48 <i>0,004</i>	47,97 <i>0,124</i>				244,12 <i>0,002</i>	26683,62 <i>0,008</i>	37,23 <i>0,248</i>
sector									
material				199,44 <i>0,046</i>	40817,52 <i>0,001</i>	95,16 <i>0,018</i>	186,05 <i>0,06</i>	39354,48 <i>0,002</i>	93,12 <i>0,021</i>
overlooked				-116,99 <i>0,233</i>	-5673,77 <i>0,643</i>	7,30 <i>0,853</i>	-91,33 <i>0,348</i>	-2869,21 <i>0,814</i>	11,21 <i>0,776</i>
providential				285,70 <i>0,048</i>	3950,76 <i>0,826</i>	-34,76 <i>0,548</i>	398,89 <i>0,007</i>	16323,34 <i>0,377</i>	-17,49 <i>0,77</i>
constant	173,27 <i>0,002</i>	11149,09 <i>0,104</i>	82,81 <i>0,000</i>	237,36 <i>0,000</i>	17204,95 <i>0,016</i>	86,86 <i>0,000</i>	102,63 <i>0,152</i>	2477,93 <i>0,782</i>	66,31 <i>0,023</i>
N	400	400	400	400	400	400	400	400	400
R2	0,02	0,02	0,01	0,03	0,03	0,02	0,05	0,05	0,02
R2-adj	0,02	0,02	0,00	0,02	0,03	0,01	0,04	0,04	0,01
F	7,4	8,54	2,38	3,88	4,51	2,41	5,33	5,23	2,14
Prob > F	0,0068	0,0037	0,1236	0,0094	0,0040	0,0667	0,0003	0,0004	0,0750
Source:	Authors' elaboration			based on			Orbis	Europe	data
Note:	p-values are in <i>italic</i>								

¹⁶ In case of the revenue-based toplist, revenue data in 2020 are available for all companies, but there are 14 missing employment data.

Table 11 Regression results in the revenue-based toplist

Dependent variable	Model set 4			Model set 5			Model set 6		
	employ- ment	revenue	produc- tivity	employ- ment	revenue	produc- tivity	employ- ment	revenue	produc- tivity
city									
Cluj-Napoca	179,4 <i>0,027</i>	31338,56 <i>0,001</i>	153,87 <i>0,319</i>				225,58 <i>0,006</i>	32899,21 <i>0,001</i>	160,59 <i>0,313</i>
sector									
material				160,08 <i>0,108</i>	31235,19 <i>0,009</i>	64,76 <i>0,735</i>	157,08 <i>0,112</i>	31851,52 <i>0,007</i>	62,62 <i>0,743</i>
overlooked				-111,49 <i>0,292</i>	-4867,54 <i>0,704</i>	-86,54 <i>0,67</i>	-110,25 <i>0,293</i>	-4304,97 <i>0,734</i>	-85,66 <i>0,673</i>
providential				323,14 <i>0,037</i>	3621,35 <i>0,840</i>	-3,18 <i>0,991</i>	416,11 <i>0,008</i>	17841,24 <i>0,327</i>	63,00 <i>0,836</i>
constant	163,26 <i>0,005</i>	14203,08 <i>0,037</i>	462,21 <i>0,000</i>	211,25 <i>0,001</i>	22156,34 <i>0,003</i>	542,89 <i>0,000</i>	89,17 <i>0,234</i>	4176,54 <i>0,644</i>	455,98 <i>0,002</i>
N	386	400	386	386	400	386	386	400	386
R2	0,01	0,03	0,00	0,02	0,02	0,00	0,04	0,05	0,00
R2-adj	0,01	0,02	0,00	0,02	0,01	-0,01	0,03	0,04	-0,01
F	4,91	10,62	1,00	3,26	3,00	0,15	4,38	5,11	0,37
Prob > F	0,0272	0,0012	0,3191	0,0216	0,0305	0,9286	0,0018	0,0005	0,8305

Source: Authors' elaboration based on Orbis Europe data

Note: p-values are in *italic*

The next three regressions (Model set 2 and 5) test this impact with respect to the sectors, and the last three regressions (Model set 3 and 6) test the joint impact of both the city and the sectors on either employment or revenue or productivity. In the case of the variable “city” we chose Pécs as the reference city and in the case of the variable “sector” the reference is the tradable sector. As a result, the slope coefficients show the differences in comparison to these reference categories.

In the case of the regressions regarding both ways of firm size measures, those regressions were significant (based on the F-tests) where the dependent variable were either employment or revenue. This means that productivity differences between cities or activities cannot be captured by this method because of their high variance. The regression results confirm the significant advantage of Cluj-Napoca in terms of employment and revenues (Model set 1, 3, 4 and 6). With regard to the FE-related activities, material activities have an advantage in general (according to the employment-based firm ranking), and also providential activities proved significant in terms of employment (Model set 2,3, 5 and 6). In the revenue-based firm ranking, material activities have a significant advantage only in terms of revenues.

Our firm-level analysis shows that there are large differences in the performances of the different activities according to the two types of firm size measures, and these patterns are not the same in Cluj-Napoca and in Pécs. Rechnitzer and Berkes (2021) classifies Pécs as a

'wayfinding' city where, despite its favourable conditions in several aspects of territorial capital, the directions of future development are unclear. A typology by Lengyel et al. (2016) characterizes Pécs as an efficiency-driven, follower-type potential knowledge region where engineering is supplanted by the role of research-intensive industries (e.g. pharmaceuticals) connected to the medical faculty of the University of Pécs. However, as a mid-range university its role as a "regional university knowledge center" capable of promoting intensive cooperation with the business sector, strengthening the R&D activities of local businesses and thus advancing the technological and economic development of its region is contested (Gál 2022). In fact, boosting R&D may exacerbate the European paradox, i.e. the failure to convert strong R&D outputs into innovations due to weak demand by the local business sector and a mismatch with local needs (OECD, 2010; Barzotto, 2019). As a further evidence of its university-led local development vision, Pécs was among the first to launch "national laboratories" in 2020, whose role is to promote knowledge transfer in collaboration with business and academia, and to become internationally visible scientific hubs capable of producing radical innovations. Thanks to its prestigious universities, offering training in fields such as AI and nanotechnology, Cluj-Napoca has the most educated workforce among Romanian regional centres. As a metropolis dedicated to startups and home to the first AI unicorn in Romania, (UiPath), Cluj is also the epicentre of cluster-based development in the Nord-Vest region (e.g. Transylvanian Furniture Cluster, Cluj IT Cluster, Romanian New Materials cluster), hosting around 500 entities in regional priority sectors (SIDU Cluj 2021-2030).

Due to the adverse international, public finance and macro environment we do not expect the high-pressure economy prevalent before the Covid-19 crisis to recover in the short term despite governments' attempts to stimulate the economy (or at least to avoid a recession). An enduring challenge arises from the persistence of labour market tightness, leaving limited scope to exploit additional labour reserves. As a result, the key issue for future regional economic growth is productivity improvement relying on the improved efficiency of local SMEs.

The inflow of EU funds is a critical issue, but mainly for overall national economic growth, because their interregional rebalancing effects are not evident due to the highly centralized management of these financial sources in the two countries. The external environment for private investment has become highly uncertain in the medium term.

Cluj-Napoca has a good chance of avoiding the regional development trap (Diemer et al., 2022), but for Pécs and its wider region, it remains a serious challenge. The further increase in the role of the public sector is undermined by the unsustainable finances of the municipal government, but the university still remains an important development factor. Nevertheless,

reindustrialization efforts are necessary to hold Pécs on a development path based on the utilization of its endogenous resources (Rácz et al., 2021; Lux, 2021; Bodnár et al., 2022).

CONCLUSION

Our comparative research examined the changes in the economic position of two rural regional centres, Cluj-Napoca and Pécs, in the period following the financial and economic crisis. We examined the sectoral structure of the two cities and their surrounding regions from a “foundational economy” approach. Our results suggest that productivity challenges are a long-term issue at the firm and the regional level alike, and that their resolution cannot be postponed, as in a labour-scarce environment in the 2020s, extensive employment expansion can no longer fuel economic growth. The regional level analysis reflected somewhat standard results: Baranya county relies more on the foundational economy in employment, while this share is lower than the national average in Cluj county. Regarding the distribution of gross value added, Cluj has a higher weight of the tradable economy, but in Baranya, this is lower than the national average. In both regions, the tradable economy performs better in terms of labour productivity.

When we turn to the firm-level analysis, we see a more nuanced picture and a finer distinction between the different “zones” of the economy. Around half of Cluj-Napoca's largest firms belong to the material activities, and the providential activities do not feature prominently in this city. Among the largest firms of Pécs, material and providential activities represent more than half of the total GVA and employment, while tradable activities are weaker in their weight. Depending on the way we measure firm size (employment or revenues), either the material and providential activities or the tradable activities excelled in Cluj-Napoca in terms of labour productivity. The material sector performed best in terms of productivity in Pécs according to both firm size measures. In sum, due to the large weight of the foundational economy in both cities, it should be considered an important driver of long-term territorial development and local well-being. There are several sectors in the local economy of the two cities where some activities of the foundational economy excel in productivity, thus we cannot establish a direct contradiction between the high weight of the foundational economy and lower efficiency. The regions of Cluj-Napoca and Pécs face somewhat different challenges, the former experiencing problems in integrating its rural surroundings, the latter struggling to attract external resources and to retain and generate endogenous resources.

The main limitation of our research is its relatively short time coverage with respect to the firm-level data. The cross-sectional coverage of the Orbis Europe database is not complete

either. Future research directions include the extension of our database to cover a wider range of CEE second-tier cities and regions with various sectoral structures, as well as to include additional variables in the firm-level analysis, e.g. to estimate total factor productivity and foreign direct investments.

Acknowledgement

The study was prepared in the framework of the researcher mobility project NKM-2021-26 and the János Bolyai Research Scholarship of the HAS. We are thankful for Stefan Bilasco (Babeş-Bolyai University, Cluj-Napoca) for providing useful background information.

REFERENCES

- Altomonte, C., & Békés, G. (eds.) (2016). *Measuring competitiveness in Europe: resource allocation, granularity and trade*. Brussels: Bruegel.
- Andrews, D., Criscuolo, C., & Gal, P. N. (2019). *The best versus the rest: divergence across firms during the global productivity slowdown*, CEP Discussion Papers dp1645, Centre for Economic Performance, LSE. <https://cep.lse.ac.uk/pubs/download/dp1645.pdf> (retrieved on 30.06.2022).
- Askenazy, P., Bellmann, L., Bryson, A., & Moreno Galbis, E. (2016). *Productivity Puzzles Across Europe*. Oxford: Oxford University Press.
- Bailey, D., Cowling, K., & Tomlinson, P. (2015). *New Perspectives on Industrial Policy for a Modern Britain*. Oxford: Oxford University Press.
- Barbera, F., Negri, N., & Salento, A. (eds.) (2018). From individual choice to collective voice. Foundational economy, local commons and citizenship. *Rassegna Italiana di Sociologia*, 59(2), 371-397. doi: 10.1423/90584
- Barzotto, M., Corradini, C., Fai, F. M., Labory, S., & Tomlinson, P. R. (eds.) (2019). *Revitalising Lagging Regions: Smart Specialisation and Industry 4.0*. Routledge. <https://doi.org/10.4324/9780367422745>
- Benedek, J., Varvari, Ş., & Litan, C. M. (2019). Urban Growth Pole Policy and Regional Development: Old Wine in New Bottles? In Lang, T., & Görmar, F. (eds.). *Regional and Local Development in Times of Polarisation* (pp. 173-195). New Geographies of Europe, Palgrave Macmillan, Singapore.
- Bentham, J., Bowman, A., de la Cuesta, M., et al. (2013). *Manifesto for the foundational economy*. Working paper No. 131. Centre for Research on Socio-Cultural Change, Manchester.
- Berkes, J. (2020). The Economic Structure and Performance of the Catchment Area of the Hungarian Regional Centers. *Deturope*, 12(3), 58-81. doi: 10.32725/det.2020.022
- Berry, B. J. L. (ed.) (1977). Urbanization and Counter Urbanization, *Urban Affairs Annual Reviews*, vol. II. London: Sage.
- Berry, C. (ed.) (2017). *What we really mean when we talk about industrial strategy*. Manchester, UK: Future Economies.
- Birch, K., & Cumbers, A. (2007). Public sector spending and the Scottish Economy: crowding out or adding value? *Scottish Affairs*, 58, 36-56., doi: 10.3366/scot.2007.0003
- Bodnár, G., Kovács, P., & Egri, Z. (2022). Elements of Endogenous Development in the Regions of Visegrad Countries. *Deturope*, 14(1), 29-49. doi: 10.32725/det.2022.002
- Bohle, D., & Greskovits, B. (2006). Capitalism without compromise: Strong business and weak labor in Eastern Europe's new transnational industries. *Studies in Comparative International Development*, 41, 3-25. <https://doi.org/10.1007/BF02686305>.

- Braudel, F. (1979). *Civilisation matérielle, économie et capitalisme*, Paris: Armand Colin.
- Castells, M. (2000). *The rise of the network society*. Malden, MA: Blackwell Publishers.
- Davezies, L. (2009). L'économie locale résidentielle, *Géographie, Économie, Société* 11.
- Diemer, A., Iammarino, S., Rodríguez-Pose, A., & Storper, M. (2022). The Regional Development Trap in Europe. *Economic Geography*. doi: 10.1080/00130095.2022.2080655.
- Dragan, M. (2019). Internal and International Migration in Cluj County (Romania) and Baranya County (Hungary). *Romanian Review of Regional Studies*, 15(2), 26-36.
- Egyed, I., & Rácz, S. (2020). The role of territorial capital in urban renewal in a non-core Central European city. *Deturope*, 12(3), 108-132.
- Engelen, E., Froud, J., Sukhdev, J., Salento, A., & Williams, K. (2017). The grounded city: from competitiveness to the foundational economy. *Cambridge Journal of Regions, Economy and Society*, 10(3), 407-423.
- Éltető, A., & Alguacil, M. (2020). Global Flows, Local Conditions and Productivity Spillovers: The Case of the Central and Eastern European Countries. *Cuadernos Economicos Del Ice*, 100, 81-100. <https://doi.org/10.32796/cice.2020.100.7119>
- Essletzbichler, J. (2022). Engaging with precarious urban futures: From entrepreneurial to grounded cities. *European Urban and Regional Studies*, 29(4), 419-439. <https://doi.org/10.1177/09697764221087646>
- European Communities (2008). *NACE Rev.2. Statistical classification of economic activities in the European Community*. Luxembourg: Office for Official Publications of the European Communities.
- <https://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF>
- European Commission (2022). "Romania 2022 Country Report". https://ec.europa.eu/info/sites/default/files/2022-european-semester-country-report-romania_en.pdf (retrieved on 15.11.2022)
- Faragó, L., & Lux, G. (2014). Kurrens portéka vagy múzeumi tárgy? Növekedési pólusok és iparági körzetek a fejlesztéspolitikában [Current chic or museum exhibit? Growth poles and industrial districts in development policy]. *Tér és Társadalom*, 28(2), 11-30.
- Fina, S., Heider, B., & Rat, C. (2021). *Unequal Romania: Regional Socio-economic disparities in Romania*. Foundation for European Progressive Studies and Friedrich Ebert Stiftung.
- Fol, S., & Cunningham-Sabot, E. (2010). Urban Decline and Shrinking Cities: A Critical Assessment of Approaches to Urban Shrinkage. *Annales de géographie*, 674, 359-383.
- Forth J., & Rincon Aznar, A. (2018). *Productivity in the UK's low-wage industries*. Joseph Rowntree Foundation, UK.
- Froud, J., Johal, S., Moran, M., Salento, A., & Williams, K. (2018a). *Foundational Economy: The Infrastructure of Everyday Life*. Manchester: Manchester University Press.
- Froud, J., Haslam, C., Johal, S., Tsitsianis, N. & Williams, K. (2018b). *Foundational Liveability: Rethinking Territorial Inequalities*. Working Paper No. 5. Manchester: Foundational Economy Collective.
- Froud, J., Haslam, C., Johal, S., & Williams, K. (2020). (How) does productivity matter in the foundational economy?, *Local Economy*, 35(4) 316-336. <https://doi.org/10.1177/0269094220956952>
- Galgóczi, B., Drahokoupil, J., Bernaciak, M., & Pavlínek, P. (eds.) (2015). *Foreign investment in Eastern and Southern Europe after 2008. Still a lever of growth?* University of Nebraska, Omaha.

- Gal, P. N. (2013). *Measuring total factor productivity at the firm level using OECD-ORBIS*. OECD Economics Department Working Papers No. 1049, OECD Publishing, Paris, <https://doi.org/10.1787/5k46dsb251s6-en> (retrieved on 24.06.2022)
- Gál, Z. (2022). A pécsi városrégió innovációs rendszere: a tudásalapú fejlesztések korlátai a periférián. *Észak-magyarországi stratégiai füzetek*, 19(3), 40-55.
- 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>
- Grieverson, R. et al. (2021). *Avoiding a Trap and Embracing the Megatrends: Proposals for a New Growth Model in EU-CEE*. wiiw Research Report No. 458, The Vienna Institute for International Economic Studies, Wien.
- Győri, T. (2021). Labour market crisis management after crisis of 2008 - Intervention expenditure and “Europe 2020” indicators. *Deturope*, 13(3), 4-31. doi: 10.32725/det.2021.017
- Hadjimichalis, C. (2011). Uneven geographical development and socio-spatial justice and solidarity: European regions after the 2009 financial crisis. *European Urban and Regional Studies*, 18(3), 254-74.
- Hajdú, Z., Horeczki, R., & Rác, S. (2017). Changing settlement networks in Central and Eastern Europe with special regard to urban networks. In Lux, G., & Horváth, G. (eds.). *The Routledge Handbook to Regional Development in Central and Eastern Europe* (pp. 123-140). London; New York: Routledge.
- Hall, S., & Schafran, A. (2017). *From foundational economics and the grounded city to foundational urban systems*. Foundational Economy Working Paper 3.
- Haase, A., Bernt, M., Großmann, K., Mykhnenko, V., & Rink, D. (2016). Varieties of shrinkage in European cities. *European Urban and Regional Studies*, 23(1), 86-102. <https://doi.org/10.1177/0969776413481985>
- Hansen, T. (2021). The foundational economy and regional development. *Regional Studies*, 56(6), 1033-1042, doi:10.1080/00343404.2021.1939860
- Horeczki, R., & Mezei, C. (2020). A helyi vállalkozásfejlesztési eszközök [Local economic development tools]. In Lux, G. (ed.). *Ipari közép vállalatok és regionális fejlődés* [Mid-size manufacturing companies and regional development] (pp. 213-229). Budapest: Ludovika Egyetemi Kiadó.
- Hungarian Central Statistical Office (HCSO) (2020). *Külföldi irányítású vállalkozások Magyarországon, 2020* [Foreign controlled entrepreneurships in Hungary, 2020]. https://www.ksh.hu/docs/hun/xftp/idoszaki/kulf_irany_vall/2020/index.html (retrieved on 29.06.2022)
- Hungarian Central Statistical Office (HCSO) (2022). *Külföldi közvetlentőke-befektetések Magyarországon megye és régió szerint – BPM6* [Foreign direct investments in Hungary by counties and regions – BPM6], https://www.ksh.hu/stadat_files/gsz/hu/gsz0039.html (retrieved on 29.06.2022)
- Jacobs, M., Hatfield, I., King, L., Raikes, L., & Stirling, A. (2017). *Industrial Strategy: Steering Structural Change in the UK Economy*. A Discussion Paper. London: IPPR Commission on Economic Justice.
- James, R., Midmore, P., & Thomas, D. (2012). Public Sector Size and Peripherality. *Spatial Economic Analysis*, 7(4), 447-460. doi:10.1080/17421772.2012.722666
- Jones, R. (2019). *A Resurgence of the Regions: rebuilding innovation capacity across the whole UK*. Working paper.
- Keating, M. (2013). *Rescaling the European State. The Making of Territory and the Rise of the Meso*. Oxford: Oxford University Press.

- Kolin-Sabján K., & Kolin, P. (2021). *Önkormányzati tőkevonzás. Az önkormányzatok tőkevonzó Képessége* [Capital Attraction by Local Governments. The capability of Local Governments to attract capital]. Budapest: Nemzeti Közzolgálati Egyetem.
- Lengyel, I., Kanó, I. S., Vas, Z., & Lengyel, B. (2016). Az újraiparosodás térbeli kérdőjelei Magyarországon [Territorial questions of reindustrialization in Hungary]. *Közgazdasági Szemle*, 63(6), 615-646, doi:<https://doi.org/10.18414/Ksz.2016.6.615>
- Lengyel, I., Kanó, I. S., Vas, Z., & Lengyel, B. (2017). Spatial differences of reindustrialization in a post-socialist economy: manufacturing in the Hungarian counties. *European Planning Studies*, 25(8), 1416-1434. <https://doi.org/10.1080/09654313.2017.1319467>
- Lux, G. (ed.) (2020). *Ipari közép vállalatok és regionális fejlődés* [Mid-size manufacturing companies and regional development]. Budapest: Ludovika Egyetemi Kiadó.
- Lux, G. (2021). Manufacturing in the post-industrial city: the role of a “Hidden Sector” in the development of Pécs, Hungary. In Kunc, J., Cudny, W. (eds.). *Growth and Change in Post-socialist Cities of Central Europe* (pp. 94-112). London: Routledge.
- Lütke-Daldrup, E. (2001). Die perforierte Stadt, Eine Versuchsanordnung, *Bauwelt* 24, 40-42.
- MacKinnon, D., Kempton, L., O'Brien, P., Ormerod, E., Pike, A., & Tomaney, J. (2022). Reframing urban and regional “development” for “left behind” places. *Cambridge Journal of Regions, Economy and Society*, 15(1) 39-56. <https://doi.org/10.1093/cjres/rsab034>
- Martynovich, M., Hansen, T., & Lundquist, K.-J. (2022). Can foundational economy save regions in crisis?, *Journal of Economic Geography*, lbac027, <https://doi.org/10.1093/jeg/lbac027>
- Mihail, E., Cehan, A., & Lazăr, A. (2021). Patterns of Urban Shrinkage: A Systematic Analysis of Romanian Cities (1992-2020). *Sustainability*, 13(13), 7514. <https://doi.org/10.3390/su13137514>
- Monfort, P. (2020). *Convergence of EU regions redux. Recent trends in regional disparities*, WP02/2020. Publications Office of the European Union, Luxembourg, https://ec.europa.eu/regional_policy/en/information/publications/working-papers/2020/convergence-of-eu-regions-redux-recent-trends-in-regional-disparities (retrieved on 01.04.2022)
- Muraközy, B., Bisztray, M., & Reizer, B. (2018). *Productivity differences in Hungary and mechanisms of TFP growth slowdown*. Brussels: European Commission. doi:10.2873/33213
- National Bank of Hungary [NBH] (2016). *Növekedési jelentés*. Budapest: National Bank of Hungary.
- National Bank of Hungary [NBH] (2022). *Termelékenység jelentés*. Budapest: National Bank of Hungary.
- Nick, G., Várgedő, T., Nagy, C., & Szaller, Á. (2019). The Territorial Contexts of Industry 4.0 in Hungary, the Present and Future Challenges and Expectations of the Digital Ecosystem. *Deturope*, 11(3), 29-58. doi: 10.32725/det.2019.025
- Norton, L., Pitt, A., & Zhao, W. (2022). Romania. Selected Issues. IMF Country Reports 22/311.
- OECD (2010). *The Innovation Policy Mix*. OECD Science, Technology and Industry Outlook 2010. Paris: OECD Publishing.
- OECD (2014). *All on Board. Making Inclusive Growth Happen*. Paris: OECD Publishing. <https://www.oecd.org/inclusive-growth/All-on-Board-Making-Inclusive-Growth-Happen.pdf>
- OECD (2015). *The future of productivity*. OECD Publishing.
- Oswalt, P. (2005). *Shrinking Cities: Volume 1: International Research*. Ostfildern-Ruit, Germany: Hatje Cantz Verlag.

- Ouwehand, W. M., Van Oort, F. G., & Cortinovis, N. (2022). Spatial structure and productivity in European regions, *Regional Studies*, 56(1), 48-62.
- Popescu, C. (2014). Deindustrialization and Urban Shrinkage in Romania. What Lessons for the Spatial Policy? *Transylvanian Review of Administrative Sciences*. No. 42 E/2014, 181-202.
- Rácz, S. (2019). Development Processes of Regional Centres in Central and Southeast Europe – From State Socialism to Dependent Market Economies. *Deturope*, 11(2), 92-100. doi:10.32725/det.2019.017
- Rácz, S., Kovács, S. Z., & Horeczki, R. (2021), Pécs. In Rechnitzer, J., & Berkes, J. (eds.). *Nagyvárosok Magyarországon* [Cities in Hungary] (pp. 207-218). Budapest: Ludovika Egyetemi Kiadó.
- Rechnitzer, J., & Berkes, J. (eds.) (2021). *Nagyvárosok Magyarországon* [Cities in Hungary]. Budapest: Ludovika Egyetemi Kiadó.
- Rokicki, B., & Hewings, G. J. D. (2019). Regional price deflators in Poland: evidence from NUTS-2 and NUTS-3 regions. *Spatial Economic Analysis*, 14(1), 88-105, doi:10.1080/17421772.2018.1503705
- Russell, B., Beel, D., Jones, I. R., & Jones, M. (2022). Placing the Foundational Economy: An emerging discourse for post-neoliberal economic development. *Environment and Planning A: Economy and Space*, 54(6), 1069-1085.
- SIDU Cluj 2021-2030 <https://files.primariaclujnapoca.ro/2022/02/03/SIDU-CLUJ-2021-2030.pdf> (retrieved on 25.10.2022).
- Somlyódyne Pfeil, E. (2014). The Changing Roles of the State and Their Impact on Urban Policy. In Somlyódyne Pfeil, E. (ed.). *Industrial Districts and Cities in Central Europe* (pp. 46-63). Győr: Universitas-Győr Nonprofit Ltd.
- Stanley, I. (2020). *Love's Labours Found. Industrial Strategy for Social Care and the Everyday Economy*. London: Nesta.
- Statista Research Department (2022). *FDI stock distribution in Romania 2020, by region*, <https://www.statista.com/statistics/1237990/romania-fdi-stock-distribution-by-region/> (retrieved on 29.06.2022)
- Szabó, P., Józsa, V., & Gordos, T. (2021). Cohesion policy challenges and discovery in 2021-2027. The case of Hungary. *Deturope*, 13(2), 66-100. doi:10.32725/det.2021.014
- Tache, A., Tache, M., & Huzui-Stoiculescu, A. (2016). Assessment of Functional Policentricity in the Romanian County Residence Municipalities. *Romanian Review of Regional Studies*. 12(1), 25-38.
- Tsvetkova, A., Ahrend, R., Martins, J. O., Lembcke, A. C., Knutsson, P., Jong, D., & Terzidis, N. (2020). *The spatial dimension of productivity: Connecting the dots across industries, firms and places*, OECD Regional Development Working Papers, No. 2020/01, OECD Publishing, Paris, <https://doi.org/10.1787/ba5edb47-en>.
- World Bank (2019). *Romania Catching up Regions*. <https://documents1.worldbank.org/curated/en/255131580296079611/pdf/Romania-Catching-Up-Regions-Metropolitan-Romania.pdf> (retrieved on 12.11.2022).
- Zsibók, Z., & Egyed, I. (2022). Post crisis Economic Environment of Two Central and Eastern European Regional Centres: a Comparative Approach. *Comparative Economic Research. Central and Eastern Europe*. 25(3), forthcoming, <https://doi.org/10.18778/1508-2008.25.21>