# Industrial restructuring and labour dynamics beyond metropolitan spaces: Understanding uneven development through path change in small towns in the era of multiple transitions

## *Ipari szerkezetváltás és munkaerőpiaci átrendeződés a nagyvárosi tereken túl: a vidéki ipari centrumok átalakulása és egyenlőtlen fejlődés felhalmozásirezsim-váltás idején*

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ABSTRACT: This paper addresses the complex causal mechanisms of socio-spatial transitions and regional inequalities. We placed the industrial restructuring of small towns in the focus to grasp the transformative impact of productive capital and state agency on labour mobility and incomes in peripheral regions. We consider small towns as laboratories of peripheral industrialisation in the accumulation regime which unfolded after the global financial crisis, and discuss how technological change, post-crisis institutional fixes and local processes intersected, entailing not only diverse development paths, but new patterns of social inequalities and fragmentation in Central and Eastern Europe. We adopted a geographical political economic approach and mobilised Doreen Massey's place concept to relate the social transformation in small towns to macro-scale processes of capital accumulation. The key argument is that in the post-crisis institutional fix, small towns emerged as important scenes to job-making and mobilising labour assets, and such processes had unintended consequences. In this

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paper, we highlight two powerful outcomes, i.e. (i) new patterns of inequalities within the small town network and also in urban-rural relations; moreover (ii), the reproduction of multiple external dependencies (peripherality) of non-metropolitan spaces.

The argumentation rests on the statistical analysis of socio-economic indicators of 168 small towns (each of 5-30 thousand inhabitants) in the pre- and post-financial crisis (2001–2022) periods. The spatial focus is on Hungary, where the rapid and thorough centralisation of power to take control over local resources entailed a radical shift in geographical patterns and also in the agency of local economic restructuring. The statistical analysis highlights the structural changes in local labour markets and commuting patterns, income inequalities and population dynamics at a local scale; in this way, we can get a more fine-grained understanding how place-making through peripheral industrialisation and socio-spatial inequalities are related.

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*KULCSSZAVAK: ipari szerkezetváltás; munkaerőpiaci dinamika; kisváros; periferizáció*

*ABSZTRAKT: Jelen tanulmány a makroszintű társadalmi-térbeli átalakulások és a regionális egyenlőtlenségek összetett ok-okozati mechanizmusait boncolgatja. A vizsgálat középpontjába a kisvárosok ipari szerkezeti átalakulását állítottuk, hogy feltárjuk a termelő tőke és az állami beavatkozások transzformatív munkaerőpiaci mobilitásra és jövedelmekre gyakorol hatását a perifériákus helyzetű régiókban. A kisvárosokra a pénzügyi válság után (óta) kibontakozó felhalmozási rezsim perifériás iparosodási folyamatainak laboratóriumaként tekintünk, ahol megragadható, hogy a technológiai átalakulás, a válság utáni intézményi struktúrák és hatalmi viszonyok, illetve a lokális terek folyamatai, sajátosságai hogyan kapcsolódnak össze és formálják egymást. Célunk annak megragadása, hogy ezek a kölcsönhatások milyen új fejlődési pályákat és ezekből eredő társadalmi-térbeli egyenlőtlenségeket eredményeztek. A makroszintű felhalmozási és lokális társadalmi folyamatok összekapcsolódásának elemzéshez analitikai keretként a kritikai politikai gazdaságtani megközelítésre és Doreen Massey hely- (place) koncepciójára támaszkodunk. Állításunk az, hogy a válság utáni átrendeződő hatalmi viszonyok és intézményi struktúrák keretei között a kisvárosok a helyi erőforrások, elsősorban a munkaerő mobilizálásnak felértékelődő színtereivé váltak, amelynek voltak nem várt/nem kezelt következményei. Utóbbiak közül kettőre fókuszálunk, arra, (i) hogyan differenciálódott a városállomány és ezzel a társadalmi-térbeli egyenlőtlenségek milyen régi-új mintázatai azonosíthatók, és (ii) ezekben hogyan azonosíthatók a periféria-helyzet újratermelődésének mechanizmusai.*

*A tanulmány az 5-30 ezer lakosú kisvárosok 2001–2022 közötti társadalmi-gazdasági folyamatainak statisztikai elemzésére épül. A térbeli fókusz Magyarország, amely nemcsak az európai perifériás iparosodás színtereként, hanem a központi államhatalom iparosításban betöltött meg-*

*határozó szerepe miatt is releváns terep a változó tőke-állam viszony térbeli következményeinek vizsgálatához. Az elemzés rávilágít az munkaerőpiac térbeli átrendeződésének ipari szerkezetváltással összefüggő folyamataira, a térbeli mobilitás (ingázás) és a munkajövedelmek térbeli egyenlőtlenségeinek ezekhez kapcsolódó trendjeire. Ezzel részletesebb képet alkothatunk arról, hogy a periféria ipari átalakulását mozgató hatalmi viszonyok, érdekek és akciók milyen módon formálják a régi-új térbeli egyenlőtlenségeket Magyarországon és azon túl, a kelet-közép-európai (fél)periférián.*

## Introduction

Scholarly works discussing the geographical political economy of the post-global financial crisis (GFC) accumulation regime highlighted the profound shifts in agency, power relations and spatial arrangement of productive capital and capacities at all spatial scales. Powerful concepts such as uneven development and peripheralisation have been revisited to grasp the enhanced complexity of socio-spatial relations in the unfolding new geopolitical/geo-economic context (Peck, Werner, Jones 2023; Lang 2015; Coe, Yeung 2019). In this debate, Central and Eastern Europe (CEE) has been discussed as an arena of competing strategies of various agents and fractions of productive capital, a scene to enhanced state agency, and an increasingly variegated space of industrial path changes and new patterns of socio-spatial inequalities. Debates on the changing structural position of the macro-region gave an insight in the unfolding accumulation regime, driven by technological change (digitalisation and the introduction of AI in production the processes), new regulative-institutional fixes (a green industrial policy in the EU), and the rearrangement global production networks (GPNs) (Domański et al. 2024; Rusnák et al. 2023; Szalavetz, Sass 2023; Bohle 2022; Pavlínek 2022; Szanyi 2020). The discourse on the relevance and re-definition of (semi)peripherality in this context was revolving around changing agency and power relations in the economy, i.e. grasping how (whether) mobilising regional assets in strategic coupling processes and proactive state policies result in more innovation, absorbing more high value-added activities, a deeper integration in GPNs, and more resilience in crisis times. Accordingly, the social aspect of current structural shifts has been approached through macro-scale labour market relations, such as how the rolling-out of the workfare state supported peripheral industrialisation, and how low-cost labour was exploited in firm strategies (Bohle et al. 2022; Pavlínek 2022; Czirfusz et al. 2019; Meszmann 2016). Nevertheless, labour relations and processes have been (are being) transformed substantially which impacted all aspects of everyday life and social reproduction. This turn is indicated by relying more on digital skills, flexibility in working hours and in employment contracting, and an enhanced scale of labour migration. Such shifts entailed more uncertainty and the loss of social protection of workers (Charles, Xia, Coutts 2022), scarcely addressed in the literature. We address this gap by looking into the socio-economic differentiation of the urban network and the rearrangement of inter-

municipal labour mobility patterns, a process driven largely by the influx of productive capital from the early 2010s in Hungary. By adopting this spatial focus, we go beyond pre-defined statistical (regional/county) boundaries, and give an insight into changes in urban-rural relations and also in the patterns and drivers of socio-spatial inequalities beyond metropolitan spaces. We aim to grasp the above processes through the temporal dynamics of employment, incomes and labour mobility to identify local and regional trajectories. Furthermore, conceptualising this single-country case-study as a part of the CEE industrial (semi)periphery, we also aim to get a more fine-grained understanding of how local and macro-scale processes are related in perpetuating the current accumulation regime ('platform capitalism').

The paper addresses the following questions:

- How did powerful structural shifts at macro-scale, such as a series of crises and institutional responses, i.e. changes in state agency, corporate strategies and labour relations were reflected in the industrial employment, commuting, population and income dynamics of small towns from the early 2000s on? Did more state involvement in driving spatial (re)arrangement of productive capital/capacities entail more or less uneven development after 2011?
- How can the post-GFC industrialisation processes in small towns explain social fragmentation, limited mobility and failing integrative mechanisms in Hungary? What lessons can we draw for the CEE semi-periphery?

The paper is organised as it follows. We conceptualise socio-spatial inequities as an outcome of powerful agents' place-making strategies instrumental to mobilise local labour, introducing Hungary as a context for supporting pervasive strategies of external agents for industrialisation and transforming localities in Section 2. We introduce the statistical data and tools we mobilised for the analysis in Section 3. In Section 4, we grasp the transformation and differentiation of 168 small towns induced by industrial investments, comparing the pre- and post-GFC decades in terms of employment, commuting and income dynamics. We analyse the results more in-depth, relating our findings to macro-scale processes (Section 5) and draw the lessons for ongoing debates on CEE peripheralisation in the current accumulation regime and on uneven development.

## Place-making and peripheral industrialisation: a conceptual framework

Our argumentation rests on a geographical political economic (GPE) approach to grasp how changing structural conditions of capital accumulation reshaped socio-spatial relations at the sub-national scale in the post-GFC era in the context of the CEE industrial semi-periphery. Papers anchored in GPE have discussed in-depth, how powerful agents of productive capital have (i) re-defined their strategies in past two decades subsequently, which manifested in the reorganisation of global

production networks (GPNs); and (ii) re-fashioned power relations driving the spatial (re-)arrangement of productive capacities in the region. They also highlighted how regional development trajectories beyond metropolitan spaces were re-shaped by new investors (e.g. from East Asia), new activities, and by a deeper integration and diversification in manufacturing (Lux 2017; Szanyi 2020; Domański et al. 2024). This stream of literature also gave a rich account of the reproduction of multiple dependencies and vulnerability of places in CEE in the times of crises and recovery. Regions struggling with structural deficits which are rooted in former development paths and/or in limited bargaining power stemming from their size, such as small towns and their hinterland, are over-represented in this group (Pavlínek 2018, 2022; Görmar et al. 2022; Zdanowska 2021; Cole, Svidroňová 2021). Their economic performance remained dependent on external firm agency and local endowments such as low-cost labour, natural resources (water, land) and accessibility (Coe, Yeung 2019; MacKinnon et al. 2019). The growing diversity of the European industrial periphery has been shaped also by changing state agency since the 2008–2011 global financial crisis throughout CEE, such as the introduction of new industrial policies with more explicit sectoral and agency focus (Lux 2017), which was combined with pre-GFC practices, such as flat tax systems, tax cuts and incentives through a reduction in the state's commitment to the welfare system and re-regulating labour-capital relations (Bohle 2009; Bohle et al. 2022; Czirfusz et al. 2019). The critical stream of GPE highlighted that such policies reflected the class bias and the inherent spatial selectivity of industrial policies, which was perpetuated by central state involvement in major development schemes (capital-central state bargaining, infrastructure investments). Such interventions re-shaped the employment and mobility patterns, impacting the everyday life and relations of residents and communities directly (Bohle et al. 2022; Nagy et al. 2021).

In sum, the scholarly papers in geographical political economy offer an insight in the changing agency and power relations driving the rearrangement of productive capacities in CEE. Hence, for us, GPE works as an analytical framework to discover causal relationships between macro-scale processes and local and regional labour mobilities. Nevertheless, in this paper, we also incorporate the concept of place in this framework, and conceptualise the differentiation of the CEE industrial semi-periphery as an ongoing place-making process. It manifests not only in shifts in development narratives, institutional arrangements and practices, but also in the perceptions and re/actions of local societies to those (Harvey 1996; Massey 2005). In conceptualising place, we rely on Massey's 'perforated space' concept (Massey 2005), which define places as temporary entanglements of intersecting social relations attached to multiple actors and scales. We adopt this idea for it is concerned with (i) the embedding of individual and collective actions in local histories, built and natural environment, narratives and identities, as well as (ii) with pervasive structural changes that transform

localities (Pierce, Martin, Murphy 2011; Máté, Pirisi, Trócsányi 2024). This allows us to relate the de/industrialisation of small towns and its social impact to broader accumulation processes without losing the focus on the agency of communities, individuals and households, which are the prime agents of social reproduction, and bear the consequences of crises and change disproportionally and unequally. Such relations manifest as diverse development paths in the CEE semi-periphery, in dis/investments in regions, in employment change, wage differentials and dynamics, and shifts in spatial mobilities (Werner 2016; Nagy et al. 2025), which are the cornerstones of operationalising our theoretical approach.

Hungary exhibited the structural weaknesses and substantial shifts in agency of local and regional economic development in the crisis and post-crisis era. The national economy was hit hard by the 2008 meltdown, Hungary hit the bottom by a -8% GDP drop, while recovery was painful and slow, entailing job losses and the largest cutbacks in the welfare system within the EU. The response of the national elite groups entering power after 2010 involved taking control over all aspects of social relations of production. This turn manifested in (i) a more pronounced selectivity in supporting FDI along sectoral preferences (motorcar production, electronics) and country of origin (East Asia; Germany), (ii) taking control over strategic activities (energy, finance, construction, media), (iii) and a highly selective support for domestic firms (Szalavetz 2017; Szanyi 2022; Bohle et al. 2022; Állami Számvevőszék 2025) and (iv) pouring massive amounts of public money in the projects of productive capital. Such policies exhibited an enhanced agency of the central government i.e. in individual bargaining with powerful international investors and unfolding clientism. Simultaneously, the agency of local communities was declining in place-making, it was clearly reflected in curtailing regulative municipal power; specifically, over the locations of major development schemes in key industries. The unfolding new institutional fix entailed a substantial growth in employment, mobilising labour beyond pre-GFC industrial cores and major cities. Labour relations have also been changed in the new regime; the share of labour income in GDP was declining (-2.7% between 2010 and 2022) (Scheiring 2023), while working hours and work intensity were growing (Szalai 2023). The subsequent modifications of the Labour Code from 2012 undermined collective rights and the scope of collective actions, while the central government remained blind to the unfolding crisis in all realms of social reproduction which manifested in everyday practices in local spaces (Czirfusz et al. 2019). The structural shifts were reflected in social processes at macro-scale in growing social inequalities and polarisation. Society grew increasingly fragmented and difficult to grasp along traditional class categories. It was reflected by the differentiation of the working class, particularly the persisting precarious position and poverty of the semi-skilled and the non-skilled, along with the rise of a well-paid group (cca. 1/6) of workers which identifies itself as middle-class and a beneficiary of the regime (Éber 2020; Huszár, Hajdu 2024; Kovách, Szabó 2024).

In this paper, we argue that the complexity of recent social and spatial restructuring in Hungary should be understood in relation to peripheral industrialisation, i.e. the strategic selectivity of investors, state policies and diverse local trajectories. In this process, small towns emerged as important spaces for job-making and mobilising labour assets, particularly in the eastern regions of Hungary. We consider such places as perforated spaces where external agents, pre-existing paths and local actors interact and change social relations in the job market, producing new spatial patterns of employment, income and mobility. This analysis is a first step to dig deeper and understand whether industrial policies and investors' strategies in the post-GFC era opened new socio-spatial gaps or had an equalising impact in the range of small towns and their (predominantly rural) hinterland, and to what extent such changes explain the fragmentation and polarisation of society. Moreover, as post-GFC Hungarian economy manifested major structural shifts in CEE, the lessons on how peripheral industrialisation and social inequalities are related in the current accumulation regime are relevant in a broader CEE context, which shall be drawn in the last chapter.

## Methodology

The time horizon covers the post-millenium period, relying on the results of three national censuses (2001, 2011, 2022) to grasp socio-spatial changes related to major shifts and turning points in the national economy, such as the investment rush related to the EU-accession, the global financial crisis, the unfolding authoritarian capitalist regime (Bohle et al. 2022), the pandemic and the currently escalating polycrisis. The spatial scale we focus on is sub-national, embracing 168 small towns of 5-30 thousand inhabitants outside the metropolitan region of Budapest. These places have a critical mass of population, infrastructure and economy to operate as local centres of labour and public services for their rural hinterland, they do not depend on a sole employer (performed as a relatively stable centre for their LLA); moreover, this group does not include county seats and towns with regional institutions which substantially modify commuting patterns, offering more jobs in services.

The indicators we use in our paper cover the following aspects of spatial dynamics:

(i) Industrial employment: reflecting spatial shifts in productive capital capacities and more, i.e. the economic and also the class politics of the post-GFC regime, a manifestation of uneven development stemming from the bargaining of various fractions of productive capital and the state, and the prime source of growth in the small towns examined in the first section.

(ii) Population dynamics: considered a key resource in state industrial policy (see e.g. National Development Plan 2030; Állami Számvevőszék 2025)

and also in corporate strategies, an indicator of labour responses to perceived decline/marginality through residential mobility; finally, a sign of stability/vulnerability of local communities.

(iii) Personal income data: reflecting state-capital-labour relations and how those manifest unevenly in space, as well as the conditions of social reproduction. The personal income tax base data we use here represent about 40-50% of total personal income, but it is strongly connected to employment and the information is accessible in a consistent municipality-level longitudinal database. However, the administrative extension of personal income tax base during the 2010s by involving the earlier tax free minimum wages resulted in a spatially selective growth of the indicator, which cannot be explained by real economic growth processes. This is a limitation of the explanatory power of the database we considered.

(iv) We analysed commuting data to look beyond municipal boundaries and understand changing urban/rural relations and regional inequalities through labour dynamics.

Industrial employment data is mobilised here to display the changing or persisting spatial patterns of industrial jobs (hence, geographical preferences of productive capital) in relation to macro-scale shifts. The indicators ii-iii-iv are meant to grasp the long-term, spatially uneven impact of industrial restructuring at a local scale, i.e. how (whether) individual well-being and community perspectives have changed in the post-GFC accumulation regime.

The analysis relies primarily on population censuses and the regional databases of the Central Statistical Office (HCSO), and national tax data (NAV/TeIR). Moreover, for a deeper insight, we also mobilised detailed data from HCSO, regarding to sectoral and ISCO classification of local workforce and commuters. We relied on specific normalised indicators to grasp the differentiation of the small town network by dynamics and relate that to industrial restructuring at national scale. We also used simple statistical tools, such as Pearson correlation and regression analysis, to reveal the connections between indicators i.e. the dynamics and spatial growth and number of industrial jobs, incomes, commuting, and their spatial distribution. The details on calculations are included in the analysis in Section 4.

Finally, we also include the lessons of an earlier (2020–2021) and also an ongoing field work relying on qualitative methods, i.e. 5 interviews with 7 regional representatives of 3 different trade unions, which gave an insight in how the changing regulations transformed capital-labour relations, i.e. wage negotiations, fluctuation and commuting. Such results, the outcome of our quantitative analysis, and lessons of earlier research are triangulated in the Discussion, to look deeper into workers' and employers' strategies and conflicts, and explain how current institutional fixes and power relations (re)produce inequalities at regional and local scale.

## Small towns in the spaces of industrialisation

### *Diverse paths in pre/post-crisis spatio-temporal fixes: an industrial typology for small towns in Hungary*

Small towns have exhibited diverse trajectories since 2001, which reflected the changing macro-scale institutional fixes (Molnár 2011; Molnár, Pénzes, Radics 2011). We grasped the shifting dynamics by developing an industrial typology which is based on the number of locally employed people in manufacturing and construction registered by the censuses in 2001, 2011 and 2022. Labour dynamics in the sectors (identified as de/industrialisation) and the 'density' of workplaces in both sectors compared to the number of local inhabitants (i.e. the level of industrialisation) have been considered in the analysis.

As the first step, processes between 2001–2011 and 2011–2022 have been compared to reveal differences in the pre-GFC and post-GFC period. At a national scale, the first decade can be characterised by a decreasing absolute number of jobs (from 1.218 to 1.116 million) and relative share (from 33% to 28%) of industry and construction in employment, while in the second period, an 'absolute' reindustrialisation (job growth from 1.116 to 1.331 million) took place, with a stable share (28%) of industry and construction in the employment structure. The increase in industrial employment was two-times higher in the second decade compared to the former loss.

Based on a differentiated consideration of the overall and partial dynamics in the two decades, six categories have been identified. In the second case, the number of locally employed people in industry and construction has been compared to the number of inhabitants in the given town (per 100 inhabitants). Based on a comparison to the national average in 2001 and 2022 (at the start and at the end of the examined period), four categories of 168 towns according to the degree of industrialisation have been identified.

Table 1: Distribution of small towns in the categories, %.
*A vizsgált kisvárosi állomány megoszlása az ipari foglalkoztatás és ennek dinamikája szerint (%)*

| *%* | | *Degree of industrialisation* | | | | *Total* |
|---|---|---|---|---|---|---|
| | | *A* | *B* | *C* | *D* | |
| Dynamics | *1* | 8 | 0 | 8 | 15 | *31* |
| | *2* | 2 | 0 | 0 | 2 | *4* |
| | *3* | 9 | 0 | 3 | 10 | *22* |
| | *4* | 9 | 2 | 0 | 14 | *25* |
| | *5* | 0 | 1 | 0 | 1 | *2* |
| | *6* | 8 | 7 | 0 | 2 | *17* |
| *Total* | *36* | *10* | *11* | *44* | *100* | *36* |

*Source: Authors' compilation based on HCSO census data*

Table 2: Distribution of industrial employees (N=327.099) in small towns in the categories, %
*A kisvárosok részesedése az ipari foglalkoztatottakból az 1. táblázat kategóriái szerint (%; 100%=327.099 fő, az összes vizsgált település)*

| % | | Degree of industrialisation | | | | Total |
|---|---|---|---|---|---|---|
| | | A | B | C | D | |
| Dynamics | 1 | 20 | 0 | 8 | 5 | 33 |
| | 2 | 7 | 0 | 0 | 1 | 8 |
| | 3 | 16 | 0 | 2 | 5 | 23 |
| | 4 | 9 | 2 | 0 | 7 | 18 |
| | 5 | 0 | 1 | 0 | 0 | 1 |
| | 6 | 11 | 5 | 0 | 1 | 17 |
| Total | 64 | 8 | 10 | 18 | 100 | 64 |

*Dynamics: 1. Overall increase with increases in both decades. 2. Overall increase with an increase only in the first decade. 3. Overall increase with an increase only in the second decade. 4. Overall decrease with a decrease only in the first decade. 5. Overall decrease with a decrease only in the second decade. 6. Overall decrease with decreases in both decades. Degree of industrialisation: A. Above-average degree of industrialisation at both the start and the end of the period. B. Above-average degree of industrialisation at the start of the period. C. Above-average degree of industrialisation at the end of the period. D. Below-average degree of industrialisation at both the start and the end of the period.*
*Source: Authors' compilation based on HCSO census data.*

By combining the 6 "process" and the 4 "result" categories, 24 theoretically possible outcomes can be distinguished, yet only 16 categories are meaningful, and 10 categories include approximately 90% of the total quantity. 9 categories are identical in both indices we considered (Tables 1, 2).

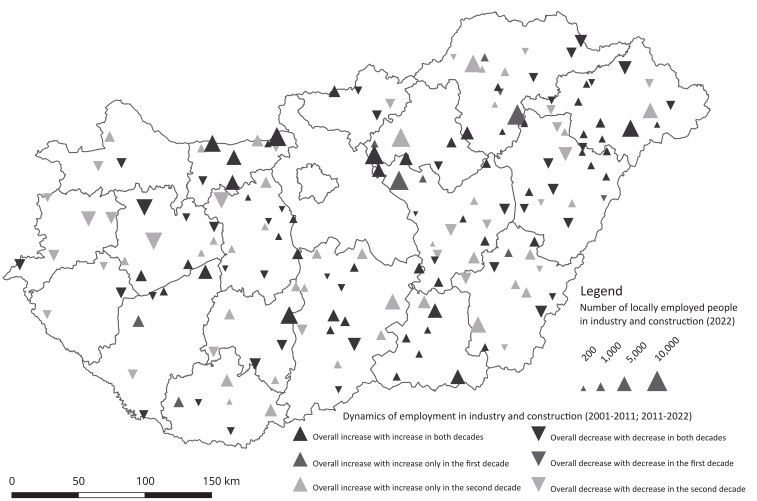
What do the results tell to us? Clearly, there has been growth in industrial employment, yet only 58% of the towns (representing 65% of sectoral employees) had an upward trend in the whole period of 2001–2022. Reflecting the national trends, the two decades had different dynamics. In the 2000s, only 37% of small towns had a growing number of jobs in industry and construction, which fell in categories 1, 2, 5; while towns in groups 3, 4, 6 were losers. The second decade can be described by (re)industrialisation, as 78% of the towns (absorbing 75% of sectoral employees) had a growing number of jobs; this group appeared in categories 1, 3, 4 (Tables 1, 2).

A typical feature of distribution along the 6 categories of job dynamics lies in the group representing extreme values(1, 6), showing either growth or decline in both decades, which contains 47% of all towns (with 50% of their employees in industry and construction). This demonstrates the relatively consistent pattern of (re)industrialisation and deindustrialisation. On the other hand, 'intermediary' categories (3, 4) losing jobs in the first decade yet becoming locales of reindustrialisation in the second, include another 47% of the towns (41% of all small town employees in the two sectors). The intermediary position represents different paths: the towns of category 3 have positive, while the ones in category 4 have a negative overall balance which is reflected in their employment dynamics in the whole period (Tables 1, 2).

The level of industrialisation (industrial and construction employees/100 inhabitants) shows an even more polarised and persistent picture than the dynamics of employment. 79% of all towns have not changed their position compared to the national average; 36% (representing 64% of employees in 2022) have kept their relatively stable above-average, while 43% ( hiring 18% of employees in 2022) have held their relatively stable below-average degree of industrialisation. Only 21% of the towns (18% of employees in industry and construction) have changed their position by crossing the national average upwards or downwards where the two-directional shifts were more or less balanced. Most towns with decreasing or increasing industrialisation were concentrated in the dynamic groups with stable decline or stable growth of sectoral employment in both decades (Tables 1, 2).

Looking at the geographical distribution of different dynamic categories, the towns with the positive trends (category 1) are concentrated in the eastern regions of Hungary, primarily outside old industrial regions and spaces of pre-GFC (re)industrialisation (Lengyel, Vas 2024; Lux 2026). The towns with overall decline (category 6) are located in North Transdanubia and also in the peripheries in the East. This pattern reflects the parallel trends of equalisation and polarisation in the (re)industrialisation of small towns: the former process unfolded at a regional scale, in the eastward shift in industrial jobs, while new inequalities emerged within the urban network at the local scale, reflecting different small town (and related hinterland) trajectories (Figure 1). This increasingly intricate pattern of employment impacted income and commuting patterns (see below).

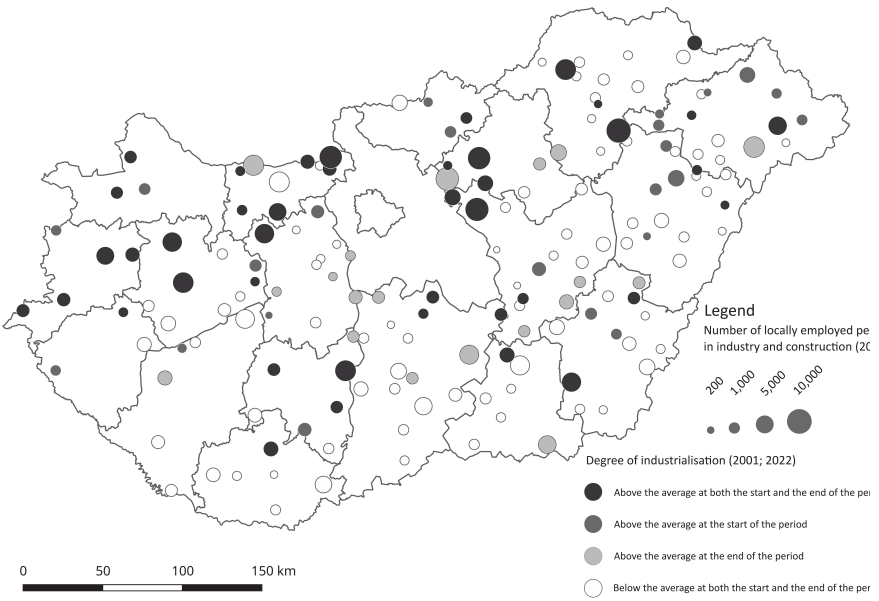
Figure 1: A typology of small towns based on two-decade industrial dynamics (6 categories)
*A kisvárosok tipológiája a 2001-2022 közötti ipari és építőipari foglalkoztatás dinamikája szerint (6 típus)*




*Source: Authors' compilation based on HCSO census data*

The geographical distribution of towns with different industrial development trajectories also reflect persisting patterns of unevenness. The majority of towns with stable above-average industrial employment are located in the regions which have been locales of productive capital investments since post-transition recovery in the Northwest and the East, while the towns with declining or stable below-average share of industrial jobs are scattered in the East of rural Hungary. Oddly, small towns in Southwest Hungary exhibited above-average stability even though it was not reflected in the economic performance and social indices of the region (South Transdanubia; Figure 2).

Figure 2. A typology of small towns based on the degree of industrialisation (4 categories).
*A kisvárosok ipari és építőipari foglalkoztatásban betöltött szerepének változása az országos átlaghoz viszonyítva (4 típus)*




*Source: Authors' compilation based on HCSO census data*

The typology above fails to reflect on the extreme differences between the small towns in terms of industrial dynamics and the degree of industrialisation. The majority of these settlements had growth in both decades, yet they do not necessarily have a higher level of industrialisation. The lower basis can be a major reason behind their dynamics (see e.g. Rácalmás, Jászárokszállás, Füzesgyarmat, Szikszó, Balatonboglár). Moreover, the majority of towns with a high share of industry in employment exhibited different paths including constant decline (old industrial centres of state socialism), early post-transition

recovery, and new path creation after 2000. In sum, we have stabilising small industrial small towns, emerging centres, and a vast number of places in vulnerable (precarious) position depending on a sole employer and located in rural spaces. The dynamics of the industrial labour market and its changing geography calls for revisiting typologies of regions (counties) (see e.g. Lengyel, Vas 2024; Lux 2026), and the scalar focus of research on industrial restructuring.

### *The population dynamics of small towns in the context of industrialisation*

It was our premise that industrial dynamics, job opportunities and rising incomes would entail a change in downward population trends hitting the majority of small towns, suggesting more sustainable demographic paths and community life. Nevertheless, the correlation and regression data indicated a weak connection between the level of industrialisation and population change in the 2001–2022 period. Looking into industrialisation dynamics, the categories of the small towns show more intricate processes; places with substantial industrial job growth had a moderate improvement in their migration balance, particularly in the post-GFC period. Towns of more steady growth of industrial employment in both decades (category 1) had the smallest, while places of continuous shrinkage of industrial employment (category 6) had the largest population loss as a whole and in both decades. (Table 3). This finding is also supported by the improving migration balance in the second period in towns with higher dynamics in industrial employment (categories A and C; Table 4). This confirmed our doubts about the positive role of (re)industrialisation in population dynamics in a broader group of small towns (Horeczki, Molnár, Pirisi 2023); apparently, industrial growth can only moderate ongoing decline, while small towns with no substantial labour market potential face above-average loss.

Table 3: Population dynamics of small town categories based on industrialisation dynamics
*A népességváltozás és az ipari foglalkoztatás dinamikája kisvárostípusonként*

| | | | | | | |
|---|---|---|---|---|---|---|
| *2* | -6.7 | -7.2 | -13.9 | -2.1 | -1.0 | -3.1 |
| *3* | -6.0 | -6.0 | -12.0 | -1.6 | 0.1 | -1.4 |
| *4* | -6.2 | -7.9 | -14.1 | -2.2 | -2.2 | -4.3 |
| *5* | -3.8 | -4.0 | -7.8 | -4.2 | -4.5 | -8.6 |
| *6* | -7.0 | -8.4 | -15.4 | -3.5 | -3.1 | -6.6 |
| *Total* | *-5.9* | *-6.6* | *-12.4* | *-2.0* | *-1.2* | *-3.2* |

*Source: Authors' compilation based on HCSO census data*

Table 4: Population dynamics of small town categories based on the degree of industrialisation
*A népességváltozás és az ipari foglalkoztatás szintje kisvárostípusonként*

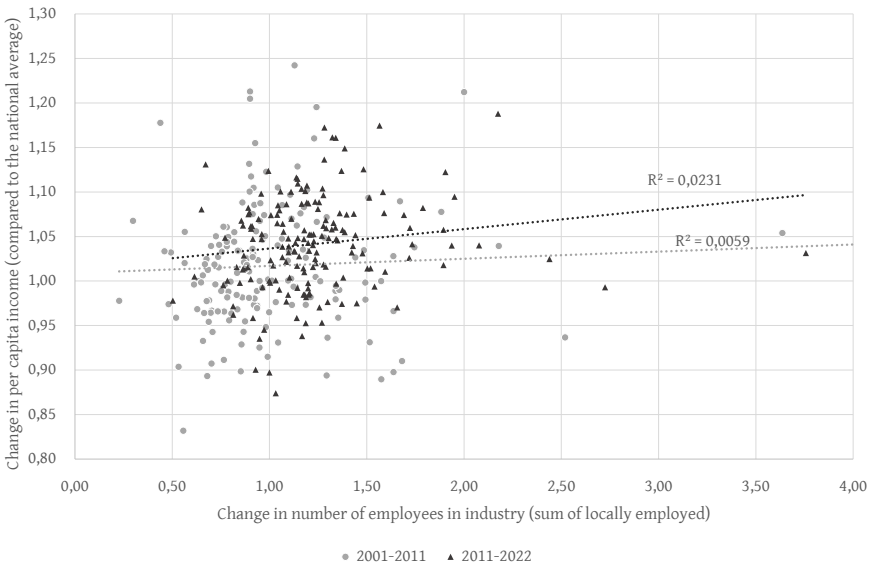
| | *Population change (in percentage of 2001)* | | | *Migration balance (in percentage of 2001)* | | |
|---|---|---|---|---|---|---|
| | *2001–2011* | *2011–2022* | *2001–2022* | *2001–2011* | *2011–2022* | *2001–2022* |
| *A* | -6.5 | -7.0 | -13.5 | -2.7 | -1.5 | -4.2 |
| *B* | -5.9 | -7.5 | -13.4 | -2.1 | -2.2 | -4.3 |
| *C* | -6.9 | -7.5 | -14.5 | -2.1 | -1.3 | -3.4 |
| *D* | -4.7 | -5.5 | -10.2 | -1.1 | -0.5 | -1.6 |
| *Total* | *-5.9* | *-6.6* | *-12.4* | *-2.0* | *-1.2* | *-3.2* |

*Dynamics: 1. Overall increase with increases in both decades. 2. Overall increase with an increase only in the first decade. 3. Overall increase with an increase only in the second decade. 4. Overall decrease with a decrease only in the first decade. 5. Overall decrease with a decrease only in the second decade. 6. Overall decrease with decreases in both decades. Degree of industrialisation: A. Above-average degree of industrialisation at both the start and the end of the period. B. Above-average degree of industrialisation at the start of the period. C. Above-average degree of industrialisation at the end of the period. D. Below-average degree of industrialisation at both the start and the end of the period.*
*Source: Authors' compilation based on HCSO census data*

## *(Re-)industrialisation and incomes*

We mobilised personal income data as an indicator to relate social dynamics and inequalities at the local scale to shifts in powerful agents' spatialised (place-making) strategies. Our data suggests that an increase in the number of industrial employees in the small towns does not automatically imply a rise in income levels at the municipal scale. Although in 2001, 2011, and 2022 alike, a higher proportion of industrial employees corresponds to a higher-than-average per capita income (the Pearson correlation value is set between 0.32-0.34), this relationship faded when examining the variables in terms of their dynamics. Whether we consider the absolute change in the number of industrial employees (locally employed) or the change in their proportion within the total workforce, there is no detectable correlation with income levels or their fluctuations during the periods of 2001–2011 and 2011–2022, the proportions remained largely unchanged (Figure 3). Only a few small towns suffered a significant decline in income (over 5%) in the 2010s, yet these include both places of industrialisation and towns suffering industrial job losses (see also Horeczki, Molnár, Pirisi 2023). In towns where incomes showed a relative increase of at least 10% (there are 21 of such cases), the number of industrial workers also rose by at least 5%, with only two exceptions.

Figure 3: Change in per capita Personal Income Tax (PIT) (relative to the national average) as a function of the change in the number of locally employed industrial employees
*Az egy főre jutó átlagos szja (országos átlaghoz viszonyított arány) változása és a helyben foglalkoztatott ipari keresők számának változása közötti összefüggés*




*Note: The town of Rácalmás, which exhibited extreme growth (7.54; 1.04 between 2001–2011), has been omitted from the figure.*
*Source: TeIR; HCSO National Census, 2011, 2022*

The personal income values show very strong correlation between years of 2001 and 2012 (0.87), and between 2001 and 2023 (0.835); moreover, we can see a deterministic connection between the data of 2012 and 2023 (0.937). This entailed only a slight change in the ranking of towns by average personal income level, as the result of industrial investments or rapid development in the sectors we discuss. The data of the last decade also suggests that the ranking became more rigid. This finding is also supported by the data of the dynamics of incomes: the correlation was weak between the 2001–2023 and the 2012–2023 period (0.38), but a very strong one (0.916) between the first decade dynamics and the whole period. Hence, the overall increase in incomes depended mostly on the changes till 2012 (including GFC-crisis period) in small towns.

In sum, the small towns with lower incomes, located mostly in East and South Hungary, could improve their relative position on a lesser scale despite substantial investments of productive capital. We found explanation by looking behind the data in places which were scenes of growth in the post-GFC era. The stories of industrial investments in the most dynamic 34 small towns (derived from firm and professional organisations' websites) suggest that the jobs created

were relying primarily on semi-skilled labour producing low added value; the new and old-yet-expanding local employers offered wages high only by local standards, which mobilised rural labour by in-commuting for lower but regular wages. Our interviews with trade union representatives also underlined that firm strategies capitalise on low-cost labour to improve their position in GPNs, which fuels fluctuation and commuting. Nevertheless, our interviewees also revealed a regional (East-and-South vs. West) fault line in wage bargaining, such as the higher level of organisation and a better position of workers in the West, and the still-emerging trade union base in the East which entails different employee strategies (more frequent quitting, exploiting firms' social support systems) and lower incomes. In sum, there is no clear connection between the industrial dynamics and the changing level of incomes, which is reflected by Table 5, combining industrial dynamic and income change types.

Table 5: Number of small towns in types of industrial dynamics combining income changes
*A kisvárosok megoszlása az ipari foglalkoztatás és a személyi jövedelmek dinamikája alapján képzett csoportok között*

| | | *Income changes* | | | |
|---|---|---|---|---|---|
| | | *A* | *B* | *C* | *D* |
| Industrial dynamics | 1 | 26 | 8 | 12 | 6 |
| | 2 | 1 | 1 | 4 | 2 |
| | 3 | 20 | 3 | 14 | 0 |
| | 4 | 18 | 5 | 16 | 3 |
| | 5 | 1 | 1 | 0 | 0 |
| | 6 | 9 | 2 | 11 | 5 |

*Dynamics: 1. Overall increase with increases in both decades. 2. Overall increase with an increase only in the first decade. 3. Overall increase with an increase only in the second decade. 4. Overall decrease with a decrease only in the first decade. 5. Overall decrease with a decrease only in the second decade. 6. Overall decrease with decreases in both decades. Relative change in income levels (Local changes in % of national average change): A – Increase in both periods; B – Increase only in the first decade; C – Increase only in the second decade; D – Decrease in both periods.*
*Source: Authors' calculations based on TeIR; HCSO National Census, 2011, 2022*

### *Commuting and industrialisation*

The potential effect we expected of the acceleration of industrialisation was the substantial increase of commuting, hence, a qualitative change in urban-rural relations. At a macro scale, daily commuting between the place of residence and the workplace entered a new period after 2000. The share of commuters of all employees grew from 29.9% (2001) up to 42% (46% excluding Budapest in 2022). The dynamics of commuting between 2011 and 2022 increased by 46% in Hungary in contrast the 23% rise in the 2000s (Pénzes, Molnár, Pálóczi 2015; Nagy et al. 2025).

In a small town context, the in-commuting reflects the amount and diversity of locally offered workplaces. If the in-commuting share is high, it shows the scale and dynamics of the urban economy and/or the lack of other external job opportunities; while a low level of in-commuting implies the limits of the small towns' local economies. The latter group is concentrated in the East, predominantly in the Great Plain region (32 of 41 of centres with limited job opportunities) where the share of in-commuters was below 30% (2022) in the local labour market. The highest share of in-commuters was detected in small towns with strong local economies, but limited human resources, which are highly dependent on the quantity and quality of daily in-commuters. In 2022, there were 30 small towns with an over-50% share of in-commuters, predominantly with substantial industrial capacities. Nevertheless, we also identified a small group of touristic towns as local labour market centres.

The current patterns were shaped by different dynamics in the pre- and post-GFC periods. In the 2000s, small towns emerged as anchors of local labour; inward commuting grew more intense, while out-commuting was expanding at a much lower pace. 98 of 168 of the discussed towns performed over the national average in terms of inward commuting dynamics; the highest increase in the number of in-commuters was detected in Tiszaújváros (nearly 6 000), Hatvan (3 900) and Komárom (3 200). The substantial increase indicated various trajectories we identified (relying on Grillitsch, Asheim, Trippl 2018) as path renewal (investments in privatised former SOEs, such as Tiszaújváros), path branching (e.g. in Jászberény) and also path importation (including the majority of small towns, e.g. Hatvan and Komárom).

The geographical pattern of commuting dynamics was complex, reflecting the impact of adverse processes in the 2001–2011 period, i.e. the investment upsurge stimulated by EU-accession and enhanced global capital flows, as well as the GFC. By 2011, 34 of the discussed 168 small towns suffered a substantial shrinkage, 9 of them lost over half of their commuters. The processes hit all regions including the western counties of Hungary, which were the greatest beneficiaries of the post-transition recovery; nevertheless, the largest decline hit industrial centres in the East, exhibiting the structural vulnerability of small towns which depend on a single powerful local employer. The changing dynamics in the 2010s indicated a new track in the spatial mobility of labour as the post-crisis global economic recovery and job-creating governmental policies entailed new patterns. Apart from 6 cases, in-commuting increased substantially in all small towns; in 66 centres, the growth in the number of commuters was over 200% of the national average.

Nevertheless, the relation between the dynamics of industrialisation and that of inward commuting was somewhat weaker than expected (Pearson correlation value: 0.42) in the 2010s.

For explanation, we dug deeper to relate industrial employment data and commuting. We discovered a strong correlation (0.701) between the changing

number of industrial employees and in-commuting for the whole (2001–2022) period. Moreover, for the time of 2022, the correlation between the share of industry in local employment still had a medium-strong connection (0.58) with in-commuting. Therefore, if the role of industry had a dominant role in the local economy, it boosted and very likely maintained in-commuting, strengthening the labour market centrality of a small town. Meanwhile, a small share and a declining number of industrial jobs entailed a decline independently of other urban functions throughout the whole period (see also Molnár, Saidi, Lénárt 2023). The correlation between the absolute number of industrial employment and in-commuting was even more pronounced, and it was constantly high in 2001 and 2011 (0.73 and 0.714) and got even stronger (0.886) in 2022. It underlines the former conclusions that re-industrialisation works as an engine to strengthen the position of towns in the countryside (Lux 2026; Horeczki, Molnár, Pirisi 2023), moreover, highlighted that size matters in terms of the employment capacity of local industry (Lengyel, Molnár 2015) which is a source of uneven development in non-metropolitan spaces.

The results also raised the question whether industrial growth depending increasingly on commuting is sustainable, and if this path supports the well-being of locals. Therefore, we analysed the census results (2022) by sectoral and social structure (ISCO grouping) of local employment. We focused on the share of industrial and construction activities, and as a next step, zoomed in on the distinct categories of employees with tertiary education and blue-collar workers. We concluded, that (i) there is a strong (0.80) correlation between the share of industrial employment among locals and the dominance of industrial jobs (over 65% share) in commuting. This pattern prevails in 61 small towns, with the highest (over 80%) share of manufacturing jobs in Rácalmás and Jászárokszállás, both dominated by FDI-led industrialisation. In 2022, we identified only 17 centres (of 168) with very limited industrial job opportunities (below the 50% of national average). (ii) The data suggested that highly qualified labour (ISCO groups 1 and 2) is not demanded in small industrial towns. The share of locally employed with a degree exceeded the national average only in 7 centres, i.e. those of tourism (Balatonalmádi, Velence, Gárdony), in suburbs (Kozármisleny, Martonvásár), and two industrial towns in a specific position (Paks with the nuclear plant, and Tiszaújváros, a major petrochemical centre) (Germuska 2024; Nagy 2024). (iii) The dominance of blue-collar workers (ISCO 7-8-9 categories) among in-commuters reflect the same structural weakness. In 54 of the discussed towns, the proportion of workers of in-commuters is particularly high (above the 150% of the national average), including places where industrial employment is dominated by a few powerful employers which exploit low-cost labour, as well as towns where the local economy lacks any 'strong' agent.

In sum, the data suggest that the prevailing model of industrialisation in small towns provided rather an access to the labour market *en masse* for the rural

population rather than supporting a strategic coupling (Coe, Yeung 2015) of local agents and mobilising regional endowments systematically for a long-term stability.

## Discussion

The spatially selective strategies of productive capital and the central government's industrial policy did have a powerful impact on the trajectories of small towns. In the 168 small towns we analysed, over 40 thousand (+15%) new industrial jobs were created, which was explicitly a main goal of the national development policy in the 2010s. Nevertheless, the process unfolded unevenly. The standard deviation which declined between 2001/11 due to the overall equalising impact of the crisis (over 27 thousand job losses in manufacturing and construction), the indicator was growing again in the 2010s. The pattern was far from clear. Only 52 towns had a growing industrial job market in both decades, and we had 37 dynamic 'newcomers' in the post-GFC period dominantly, in the East (pioneered by Mátészalka with 206% growth in industrial employment). In the whole post-2001 period, only one-fifth of such places improved its position (by share and dynamics) substantially in the industrial labour market.

The eastward expansion of industrial capacities reflected the goals of the National Development Plan for 2030 for geographical equalisation, yet reproduced old and created new inequalities and structural vulnerabilities in the era of platform capitalism. It is reflected not only by the high proportion of blue-collar industrial workers and a growing number of commuters in small towns and their hinterland who are considered disposable in times of crises (Charles, Xia, Coutts 2022; Polkowska, Mika 2025), but also by being increasingly dependent on the automotive sector which is subject to profound technological shifts, and the scarcity of high-tech activities in small towns. (We identified only 24 high-tech firms by NACE classification employing more than 150 people). Such structural attributes entail instability for households, communities, and for municipalities relying on local corporate income tax revenues.

The geography of small towns' industrialisation grew more intricate. The processes we identified clearly are (i) the rise of new centres and a selective stabilisation of small towns (re)industrialised in the pre-GFC period in the East; (ii) the selective decline of older centres (scenes of post-transition restructuring and industrial growth) in the West, and (iii) the permanent marginalisation of a group of small towns remote from major urban centres mostly, in the East and Southeast of Hungary. We may presume that industrialisation-focused place-making as policy response to the unfolding accumulation regime produced new socio-spatial dimensions of labour market inequalities at a subnational scale. Those manifested in uneven access to and variety jobs, which is fundamental for

low-paid workers seeking constantly for better-paid opportunities, and also for social groups hit by employers' discrimination (women as single parents with small children) who have limited scope for commuting, as it was reflected by our interviews conducted with labour union representatives. They also stressed that the labour in newly emerging industrial centres is less organised, new employees are subjects to individual wage bargaining. Mobility-related burdens stemming from longer commuting routes which are imposed on residents of marginalised (dominantly, rural) spaces are also higher in the eastern regions. Finally, different cultural (firm) contexts entail an even more intricately uneven labour geography. Post-GFC investors are less open to negotiate labour conditions, and hierarchical organisation (limited scope of local management) and non-reflexive labour policy also raise discontent leading to growing fluctuation, which in turn counteract organisation and solidarity.

The analysis of the population (residents' number) dynamics in relation to the geography of industrialisation took us to an only conclusion: the growing number of industrial jobs in small towns did not have a considerable impact on the patterns of residential migration. This also entrap major groups (low-income blue collar workers, people with limited mobility opportunities stemming from their family status and related discrimination) in local labour markets, particularly in the East, where wages are lower, and a number of vulnerable persons (who had been off the primary labour market for a long time) who were mobilised by the post-GFC wave of industrialisation.

The massive growth of industrial jobs had a powerful impact on employment in small towns and also in their hinterland through enhanced commuting, yet the dynamics were socially and spatially selective. (i) Small towns are targeted primarily by blue-collar commuters. The correlation between the share of physical workers among locally employed workers and the share of workers among in- and out-commuters are high, which suggests a little chance for upward mobility in case of changing jobs, and also persisting urban-rural inequalities in the job market. (ii) Small centres with powerful industrial projects, but limited human resources (primarily, Rácalmás, Jászfényszaru, Nyírbátor, Tiszaújváros) exhibited the highest growth. (iii) The investment of productive capital in small towns also entailed more intricate and unsteady commuting patterns in the 2010s, particularly in regions where the density of industrial jobs had been high in the pre-GFC period already. This indicates that employees have more choices yet they have to think/act at a regional scale. (iv) We also identified regional differences; while the growth in the number of commuters was ubiquitous, the distance covered by employees increased far more in the East/Northeast. Fundamentally, enhanced commuting seems to support the goals and interests of the productive capital; firms do invest in running commuting lines to maintain a substantial catchment area to tackle fluctuation and labour shortages, and hence get access to low-cost labour to

address challenges of green transition and global competition in the automotive sector. As far as state agency is concerned, development policies failed to think regionally and enter a partnership with local agents to embed the projects of productive capital, which reflected the prevailing class politics and centralisation of (political and economic) power (Szalai 2023; Éber 2020). We believe, uneven geographies of commuting should be considered as a driver of socio-spatial inequalities in times of crisis as well as of economic recovery; enhanced mobility counteracts community building at workplaces and also locally, perpetuating the dependent and low-paid status of rural labour which is reflected well in the case of the 'late comer' industrial small towns in the 2010s.

The above-discussed patterns and dynamics raised questions to be addressed in further, locally-focused studies, such as (1) what qualitative differences defined pre- and post-GFC paths, (2) whether the emerging industrial centres of the post-GFC period are destined to a low-cost/low-rank trajectory, (3) how the industrialisation of small towns supports the further fragmentation and polarisation of the working class, and (4) what combinations of local and external agency and resources should entail stability (employment, local firms' performance) and qualitative change in terms of value added, incomes, and community empowerment, to counteract economic insecurity, population loss, and the erosion of social ties.

## Conclusions

Clearly, our findings included the identification of the limits and weaknesses of databases and statistical tools we used in the analysis, i.e. for grasping industrialisation and the socio-spatial dynamics induced by it. Nevertheless, the calculations highlighted that entering the post-GFC accumulation regime shaped by an intensified place-making agency of the central government, including bargaining on the location decisions of the productive capital, entailed substantial quantitative changes i.e. in the number of jobs and enhanced mobility in rural regions. Nevertheless, what looks spatial equalisation at a regional (county) scale in statistics is masking new processes of socio-spatial fragmentation between small towns/their regions, in rural-urban relations and also within local spaces (see also Keller et al. 2015; Nagy, Bródy, Mihály 2024).

The global, European, and national institutional fixes driving industrialisation in the post-GFC period was reproducing the peripherality of small towns and their rural hinterlands. It was reflected by the data of income and commuting dynamics, and also in structural changes which supported the exploitation of labour, such as Labour Code modifications (Éber 2020; Szalai 2023; Scheiring 2023), lacking investments in the systems of social reproduction which hit a number of small towns painfully (Velkey 2022; Keller, Szőke 2020; Uzzoli et al. 2020), and limiting municipal

control over local spaces and institutions. Such mechanisms supported the fragmentation of the working class and kept the semi/unskilled trapped spatially in a precarious low-income status. Meanwhile, disinvestment in the public sector also undermined the status of local professionals and their potential lead role in communities, which is reflected in the growing outward commuting of this group. Therefore, local resources (labour, land, water, etc.) remained subject to external agents' strategies without a deeper embedding of local agents (firms, labour, communities) in global production networks (Coe, Yeung 2015; Molnár, Saidi, Lénárt 2023).

The industrialisation of small towns entailed increasingly perforated spaces which manifested in labour market restructuring and changing mobilities, yet also in new dimensions of socio-spatial inequalities. It is more than a reflection of the geographies of industrialisation, it is a production of social space (Lefebvre 1991), through which a place of living/working is an all-encompassing factor to be considered while discussing labour relations (embedding in capital accumulation processes), various integrative mechanisms (through work, community, and household), and all other aspects of everyday life (see also Kovách, Szabó 2024). For that, we need further, deeper, locally focused exploration of the transition of small towns in the context of the current, unfolding accumulation regime.

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