SO1 AND SO2 REPORT

Identifying Hidden Champion Towns in Slovenia and Hungary and Their Socio-economic Performance

Project: (Hidden) Industrial Champions: Origins, Features and Futures of Industrial Small Towns

Acronym: Hidden Champion Towns

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Introduction

Post-socialist Europe is a manufacturing and industrial hub. This stems from its rich industrial legacy from the socialist and pre-socialist eras as well as from more recent foreign direct investments, initially from Western Europe and subsequently from other countries, such as Japan, South Korea, China and the United States. The reindustrialization of this region, often called the European "semi-periphery," is evident on both a macro and micro scale. On the latter scale, this process seems to be centred more on smaller towns and peripheral areas, including those with and without longstanding industrial legacies, as well as former rural areas. In this analysis, we focus on smaller towns in Slovenia and Hungary that have developed, retained or attracted medium- and large-sized firms oriented toward global markets with above-average value added in their respective sectors. We call these firms "hidden champion firms," analogous to the concept developed initially in Germany by Hermann Simon who defined these firms as typically medium-sized, world leaders in niche markets, with family-owned origins and an anonymous profile (little known to the outside world). We use the term in a slightly extended sense to capture firms located outside major urban centres that have remained relatively 'hidden' in academic and policy debates, yet successfully exploit local assets and combine them with internal and networked resources. They are considered 'champions' not only because of their market performance, but also because they hold a powerful position in local and regional economies.

The purpose of this analysis is to examine, from a comparative perspective, how such firms are spatially distributed in Slovenia and Hungary, what types of smaller towns are associated with them, and how their presence influences local development dynamics. The analysis is based on the assumption that the (socio)economic success of these towns is not the result of a single factor, but rather an interplay of several factors, such as historical and recent industrial trajectories, ownership structures, the role of the state and municipalities, local institutions and communities, the labour force, accessibility, and the integration of firms into global production chains. We use two terms: **hidden champion firms,** which are export-oriented, high-value, medium- and large-sized firms; and **hidden champion towns,** which are towns with fewer than 30,000 inhabitants that host hidden champion firms.

The analysis is structured into three main parts for each country. First, it outlines the national context, focusing on historical industrialization, major economic shocks, post-socialist restructuring, the political economy of capitalism, and current trends in industrial and territorial development. This section provides the necessary macro-institutional background to understand why hidden champion firms emerge in specific types of towns, as well as the different trajectories of those towns in the two countries. Second, the analysis presents the spatial distribution and statistical characteristics of hidden champion firms and towns. To create criteria for defining hidden champion firms, we examine individual firm-based data on their sectoral structure, size, ownership patterns and export orientation. Next, we use territorial data at a municipal level to measure the association between hidden champion firms and the economic performance, social, health, and environmental indicators of individual municipalities. We also present a tentative typology of hidden champion towns in Slovenia and Hungary based on quantitative methods. Third, the analysis shifts to selected case-study towns. We prepared a basic description of case study towns in both countries, which will be in the centre of more qualitative and agency-based investigations in the next phase of research. In Slovenia, Ajdovščina, Kočevje, and Komenda represent different development paths: industrial continuity and renewal, vulnerable postindustrial recovery, and the creation of a new suburban economic path. Similarly, in Hungary, Ajka, Jászberény, and Nyírbátor represent diverse paths, i.e. combining socialist industrial legacies and FDI-led path diversification, path upgrading and path branching mobilizing local institutional capacities, and path importation exhibiting peripheral

industrialization in its ‘purest’ form. Through these cases, the analysis connects quantitative patterns with local historical and institutional trajectories.

The aim of this analysis is to understand the origins and characteristics of small-town communities at the forefront of economic production and export. Our goal is to demonstrate that these communities are not merely a result of isolated corporate success or foreign direct investment (FDI), but rather, they are an outcome of the interaction between state agencies, local and regional assets and capacities, and complex institutional arrangements. At the same time, we aim to avoid an overly optimistic interpretation of hidden champion towns. While these communities may be economically successful, we are also interested in the accompanying tensions, trade-offs, and unintended consequences of such development paths.

This document serves to synthesise answers to two research questions as outlined in the project proposal. In Specific objective 1 we aim to identify industrial champion towns and how do they perform according to socioeconomic indicators; in Specific objective 2 we aim to explain historical path development according to different national contexts.

A) National context: Slovenia

1. Background, current conditions and challenges

After becoming independent in 1991, Slovenia is often cited as a relatively successful example of post-socialist transition, supported by long-standing economic links with Western Europe (Nared et al., 2020). Strong unions and coordinated institutions, rooted partly in Yugoslav self-managed socialism, helped to balance market reforms with social protection (Bohle and Greskovits, 2007; Buchen, 2007; Crowley and Stanojević, 2011). With relatively favourable fiscal and external positions, Slovenia faced less IMF pressure and pursued a gradual approach, with lower foreign investment, slower privatisation and a generous welfare regime (Feldman, 2006; Crowley and Stanojević, 2011). Despite these advantages, the start of the transition was an economic shock: real GDP fell by 8.9% in 1991 and 5.5% in 1992 (SURS, 2018), employment dropped by about 5% from 1992 to 1996 and registered unemployment rose to about 14% in 1993 (IMF, 1998). Worker displacement in 1990–1993 amounted to 3–4% of the labour force per year (Oražem, Vodopivec & Wu, 2004), and regions reliant on a small number of employers were hit particularly hard (Wostner, 2002). European and transatlantic integration shaped subsequent development: Slovenia joined the EU and NATO in 2004, adopted the euro in 2007 and joined the Schengen area in 2007/2008.

Current development trends are relatively optimistic: HDI in 2023 was 0,931 (rank 21/193) and increased from 0,734 in 1990 (+26.8%), while inequality in health, education and income remains low. GDP per capita reaches 90% of the EU average, while the individual consumption per capita reaches 86% (World Bank, 2021; Eurostat, 2024; UNDP, 2025). However, regional disparities remain high. The economy is highly export-oriented. Goods exports reached EUR 61.5 billion in 2024, led by chemicals (45.6%) and machinery/transport equipment (24.3%) (SURS, 2024a). Manufacturing remains a key employer (29.3% of employees in 2022) (EURES, 2025), while the labour market is tight (unemployment 3.7% in 2024; vacancy rate 2.2% in Q4 2024) (OECD, 2024; SURS, 2024b). Ageing is a growing constraint (Eurostat, 2025; Eurostat, 2026), partly offset by foreign workers (UMAR, 2024). Climate resilience is also central after the 2023 floods and related EU Solidarity Fund support (Government of the Republic of Slovenia, 2025; Government of the Republic of Slovenia, 2024). R&D spending reached 2.13% of GDP in 2023 (SURS, 2023). Slovenia is a “moderate innovator” (91% of the EU average) and basic digital skills remain below the EU average (European Commission, 2024; Digital Skills and Jobs Platform, 2024). Slovenia’s settlement pattern remains dispersed (Bole et al., 2020a).

2. Shocks, crises and industrial restructuring

One of the first economic shocks happened before WWII in the 1930s, originating from the Great Depression and affecting Slovenian economy to a great extent (Počivavšek, 2006). Financial and later industrial crisis caused major unemployment exceeding 20%, particularly in the industrial and retail sector. This economic shock also temporarily halted fast economic development of Slovenia, which was by far the most developed part of the former Kingdom of Yugoslavia.

Next shock was after WWII when the political regime, under the influence of communist ideology, changed the economic orientation and nationalised all major companies. Great investments were made especially in the industrial sector to achieve self-sufficiency and to fuel the ideology of proletariat society. The market was oriented towards domestic consumers and other communist countries, while retaining some links with the West, primarily in the automobile industry, which was also the consequence of the rift with the Soviet Union after 1948, where Yugoslavia distanced itself from other communist regimes (Lorenčič and Prinčič, 2018). Slovenia did not have a capitalist regime, so it was partly shielded from external market shocks in the West. The great economic crisis that peaked in 1975 in Slovenia coincided with efforts to modernise the economy and make certain pro-democratic reforms (Štiblar, 2008). Those reforms were

successful at first: regional policy helped to disperse industrial activities across the country, bringing new medium-tech industries to smaller towns. However, many places developed narrow production bases and strong dependence on a limited number of employers, and these policies were later constrained by political factors (ibid.). The real effects of the crisis were less visible, since the Yugoslav Government resorted to borrowing money from Western creditors (ibid.).

Transition to market economy

The early 1990s brought an abrupt external demand shock: in 1991, Slovenia faced the loss of the Yugoslav market alongside the shift to a market economy. The most obvious result was a sharp contraction of economic activity and deindustrialisation, especially of older industries in regional centres with basic, lower tech production (consumer goods, food, textile, steel, etc.). Unemployment rates in industry soared, but productivity increased (Bole, 2008). Contrary to other post-socialist countries, this restructuring was not based on foreign acquisitions, but more strongly on domestic capital, which prevented certain social shocks that were characteristic of other post socialist countries – this also meant that Slovenia was less affected by subsequent economic shocks in the 1990s and early 2000s (Štiblar, 2008). Relatively high growth rates resulted in a convergence to the average EU income per head (91 per cent of the EU average in 2008), which was achieved by the EU accession in 2004 and adoption of the euro in 2007 (Komninos et al., 2014).

Global financial crisis (2008–2014)

One of the biggest economic shocks for Slovenia was the financial crisis that began in 2008. From 2008 to 2012 GDP fell for by 7%, making it one of the most affected countries (Komninos et al., 2014). The main reason was in the economic structure: Slovenia's economy is based on medium-tech export-oriented products, since it is one of the most export-oriented countries in the OECD (Slovenia – Trade and…, 2017). When demand from abroad, especially in Germany, fell, those medium-tech sectors suffered the most. Only the pharmaceutical industry prevented further decline, while the automobile, computer, electric and other industries, together with the financial and construction sector made sharp losses (Komninos et al., 2014). This crisis exposed the core problem of Slovenian economy, which is based on the export of medium-tech products (from 2002–2011, manufacturing contributed almost 30% of GDP and over 80% of exports) and an underdeveloped knowledge-intensive sector. GDP did not return to pre-crisis levels until 2017, which means that the country needed almost a decade to come back to the point it departed from at the end of 2008. Following the 2013 recapitalisation of major banks and the transfer of non-performing assets to the state asset-management company, growth resumed. The IMF attributed the initial recovery to strong exports and EU-funded public investment (IMF, 2015). The Bank of Slovenia (Banka Slovenije) similarly assessed that the real economy and financial sector improved in 2014–2015, with recovering domestic demand and lower systemic risk in banking (Banka Slovenije, 2015).

COVID-19 (2020)

The COVID-19 epidemic affected Slovenia's economy, particularly by hitting service activities and more service-oriented regions. Due to extensive state financing of measures to mitigate the impacts of the epidemic, which significantly helped preserve economic potential and prevented a decline in households' disposable income, the country's public-finance position deteriorated. The epidemic also affected people's quality of life from health, education, and other important social perspectives. At the same time, new opportunities emerged, for example from the shortening of global value chains, the introduction of remote work, digital solutions, innovation and new business models (UMAR, 2026).

Slovenia recovered quickly after COVID-19 thanks to expansionary fiscal policy, with GDP per capita reaching 92% of the EU average in 2022 and support measures cushioning the social and material impact of both the epidemic and the energy-price surge. However, while public finances improved in 2021–2022

after most epidemic measures were lifted, the deficit still stood at 3% of GDP in 2022. UMAR argues that the post-COVID growth spurt weakened in 2022 as the energy crisis and supply shocks pushed up inflation amid strong private consumption and labour shortages, and it stresses that Slovenia's core development gap is productivity. Labour productivity was 86% of the EU average in 2022, held back by low investment and slow "smart and green" transformation, including insufficient automation and weak progress on renewables (the 2020 target was not met). The epidemic also disrupted long-term health gains, increased excess mortality, worsened access to healthcare (already strained by GP shortages and long waiting times), and intensified mental-health and long-term-care pressures, prompting temporary and medium-term measures and investment funding in 2020–2022 (UMAR, 2023).

3. The political economy of (state) capitalism in Slovenia

The Slovenian territory experienced three waves of industrialization; the first at the transition from the 19th to the 20th century (coal), the second in the 1920s before the world economic crisis (electricity), and the third, especially distinctive one after WWII (mass Fordist production). It was not until the second half of the 19th century that a true industrial revolution occurred, when coal mining and the constructed railroad from Vienna to Trieste (1841–1857) enabled goods to be exported. The increasing coal digging peaked in 1913. The spatial distribution of industry followed a specific spatial pattern called "the industrial crescent", which encompassed the northern areas of mining and other industrial towns along the railway network. The rest of Slovenia stayed predominately rural. Larger cities outside of this industrial crescent had only limited industry or simple manufacturing. In comparison to the rest of the Austro-Hungarian Empire, Slovenia was under-industrialised and predominantly rural.

Between the World Wars, Slovenian industry in the Kingdom of Serbs, Croats and Slovenes – from 1929 Kingdom of Yugoslavia, experienced a new rise due to new markets and poor industrialization in other parts of Yugoslavia that continued until the world economic crisis in the 1930s. In addition to coal, electricity became very important, as the first two hydroelectric power plants were established in 1915 and 1918. The number of industrial companies doubled, especially in the period from 1919–1929. The most successful were the textile, furniture and lumber, metallurgy, chemical, paper, and tire industries. Again, the main concentration of industry was in the traditional industrial crescent, but some regional towns outside of it also began with industrialisation (e.g., Novo mesto).

After 1945, the new or renovated factories were at first still primarily concentrated in the "industrial crescent". Because the socialist political goal was to spread industrialism and the proletariat across the country, all the regional centres were systematically industrialized. The second wave of industrialisation began in the 1970s when the authorities concluded that the industry is too concentrated in larger towns and they feared disproportionate development and social issues. In line with the principles of polycentric development, smaller towns as well as completely rural areas began industrializing with factories, which is still characteristic of industrialization today. Regional centres and older industrial towns experienced stagnation, while a completely new industry began developing in smaller rural towns. This was also the height of industrialization, as almost 50% of people were employed in industry in the late 1970s. From this era, the most iconic industrial towns persist and are called "post-socialist champion towns" (Bole et al., 2019). They are more-or-less dependent on the success of one or a few firms, which managed to transform after the fall of socialism.

With the independence of Slovenia in 1991 and the introduction of a market economy, the majority of industrial companies found themselves in a difficult position due to the loss of a major part of their extensive market in the former Yugoslavia, the restructuring of production, the lack of investment funds,

and privatization. But many companies gradually managed to overcome these problems and became globally important.

Slovenia is often treated as an outlier among post-socialist countries because its transition preserved more coordinated labour and welfare institutions. In “varieties of capitalism” and comparative political economy research, it is repeatedly described as neocorporatist and closer to coordinated market economy features than the more liberalised models found elsewhere in the region (Bohle and Greskovits, 2007). A key background factor is the legacy of Yugoslav self-managed socialism and an egalitarian value system, which supported a relatively strong labour movement and continued social dialogue after 1991 (Crowley and Stanojević, 2011).

Unlike many post-socialist transitions driven by rapid sell-offs to foreign owners, Slovenia followed a gradualist path: slower privatisation, limited foreign takeovers, and substantial continuity in firm organization (Mencinger, 2005). The privatisation framework relied on ownership certificates/vouchers and enabled employees (including former and retired employees) to acquire shares; the Constitutional Court’s summaries of the ownership-transformation framework explicitly describe employee certificate-based acquisition caps in privatisation. Research on corporate governance highlights that Slovenia’s privatisation methods tended to favour domestic owners and state-controlled funds, contributing to an extended “battle for control” and strong political-economy linkages around corporate governance (Damijan & Damijan, 2019).

Industrial relations in Slovenia exhibit declining trust in trade unions, but still relatively strong legally protected labour rights. In socialist times, trade unions were perceived as part of the regime and were not rooted at firm levels. The Slovenian successor of former independent trade unions after 1991 has been the “Association of Free Trade Unions”. It has functioned as partner in “social dialogue” and as a pressure group representing labour rights during the transition (Centrih, 2014). Membership in the unions dropped sharply from high levels around the early 1990s to around one-fifth by the late 2010s (OECD, 2021; Visser, 2019; OECD/AIAS ICTWSS database, 2025). Despite the sharp drop in workers’ trust in trade unions, they are still relatively influential interest groups with a high mobilisation capacity (Adam et al., 2009). The normative orientation of the Association of Free Trade Unions is democracy, solidarity, social justice and dialogue (ZSSS, 2021). Collective agreements between employers and trade unions ensure legal backup of workers’ rights that cover a large share of the working population (Adam et al., 2005; OECD, 2021; Eurofound, 2024). Other institutions also point to a strong corporatist culture in Slovenia, e.g. the National Council composed of different interest groups, including employers and employees, and the Economic-Social Council as a tripartite body with influence on economic and social policies (Buchen, 2007).

On firm level, workers’ councils are an important feature of Slovenia’s coordinated model. They can be read both as a translated legacy of Yugoslav self-management and as an institution modelled on German works councils. Self-management aimed to increase worker involvement and firm autonomy (Buchen, 2007; Centrih, 2014). Slovenia has had a dedicated legal framework for elected employees’ councils since 1993, giving them information, consultation and co-determination rights (Eurofound, 2003). Rather than claiming they exist in “the majority of firms,” it is safer to state that they are a structured channel of workplace participation and a key institutional anchor for employee voice (Buchen, 2007). Labour-market institutions changed from job protection to a mix of employment and income protection. Under socialism, employment protection was high while income protection for the unemployed was weaker, so transition required new labour-law rules and a system of unemployment protection (Buchen, 2007).

Employer coordination is supported by peak organisations. The Chamber of Commerce and Industry of Slovenia (GZS) is a central representative of the business community and operates a network of 13 regional chambers, alongside sectoral associations; it also participates in social dialogue as a recognised partner.

(GZS, 2021). The Chamber of Small Craft and Small Business and similar voluntary business support organisations also exist. The point about socialism is better framed as: under strong state steering, autonomous employer coordination and inter-firm networking had less room, while in the post-1991 setting employer organisations expanded their role in representation and policy processes.

Privatisation and corporate governance were central political-economy battlegrounds after 1991. The privatisation framework relied on vouchers/ownership certificates and channelled shares through a structured allocation scheme, which shaped insider ownership and the role of state-controlled funds in corporate control (Buchen, 2007; Feldmann, 2007). This contributed to durable linkages between political and economic elites and prolonged contests over corporate control (Crowley and Stanojević, 2009).

4. Current trends in industrial restructuring and territorial development

Slovenia is highly export-oriented. In 2024, the value of goods exports reached EUR 61.5 billion (43 % of GDP). By product group (SITC), chemicals and related products accounted for 45.6% of exports, followed by machinery and transport equipment (24.3%), manufactured goods classified chiefly by material (12.7%), miscellaneous manufactured articles (6.8%) and mineral fuels (4.7%) (SURS, 2024a). Employment remains concentrated in industry and tradable services; manufacturing is reported as the largest employer (29.3% of employees in 2022), followed by trade (16.2%) and construction (10.8%) (EURES, 2025). Labour-market conditions have been tight: the OECD reports that unemployment fell to historic lows (3.7% in 2024) and that widespread labour shortages have supported strong wage growth (OECD, 2024; OECD, 2026). Job vacancies remain visible: in Q4 2024, the vacancy rate was 2.2% (SURS, 2024b). Demographic changes have influenced the lower number of domestic workforce, which resulted in rising numbers of foreign workers from third countries in the last five years.

Slovenia's restructuring is therefore less about rebuilding after industrial collapse and more about keeping a dispersed, export-led manufacturing base competitive while moving toward more specialised and higher-value production. Many successful firms are embedded in small and medium-sized towns rather than metropolitan areas, reinforcing long-term firm-place ties and creating local development paths that depend on the performance of a limited number of employers. Policy has increasingly emphasised technology upgrading and innovation, with national support bodies (financing, investment promotion and business-development services) co-financing innovation measures and aiming to strengthen international competitiveness, particularly for small and medium-sized firms.

At the same time, structural constraints remain. Many industrial SMEs face limits in innovation capacity, access to finance and innovation management. Tight labour markets combine with demographic ageing and a dispersed settlement pattern, raising concerns about future labour supply, commuting costs and the ability of smaller towns to maintain services. The long recovery after 2008 also underlined the exposure that comes with reliance on external demand for medium-technology exports (OECD, 2024; OECD, 2026).

Spatially, regional disparities persist. Competitiveness and prosperity are uneven across the country: the region Osrednjeslovenska (Ljubljana) continues to outperform other regions, with GDP per capita of EUR 44.6 thousand versus EUR 30.2 thousand nationally and EUR 16.5 thousand in Zasavska region, and the gap has widened over the past decade. This disparity shapes Slovenia's regional development agenda and raises questions about how effectively the multi-level governance system supports regional development. Slovenia has 212 municipalities, ranging from around 300 residents in the smallest to more than 300,000 in Ljubljana (OECD, 2026; OECD, 2024). With municipalities as the main subnational tier, regional programmes often rely on voluntary coordination among local governments, which can slow the design and delivery of place-based policies intended to reduce development gaps.

Despite these pressures, Slovenia's broader social outcomes remain strong. According to international composite indices, Slovenia achieves a high quality of life and high life satisfaction: Eurobarometer (2024e) places Slovenia among the seven EU Member States with the highest general life satisfaction. Slovenia also ranked 6th on the sustainable and inclusive wellbeing indicator, and its position in the SIWB index improved between 2011 and 2022. At the same time, weaker trends were observed in the institutional environment, where regulatory quality, public services and public institutions stand out negatively (UMAR, 2025). Slovenia ranked mid-range in the EU for standardised preventable and treatable mortality and for the impact of social transfers (excluding pensions) on poverty reduction; it ranked lower for basic digital skills, material import dependency, net international investment position and the projected old-age dependency ratio. Key institutional challenges include regulatory quality, trust in political institutions, social and political participation, and accountability (UMAR, 2025).

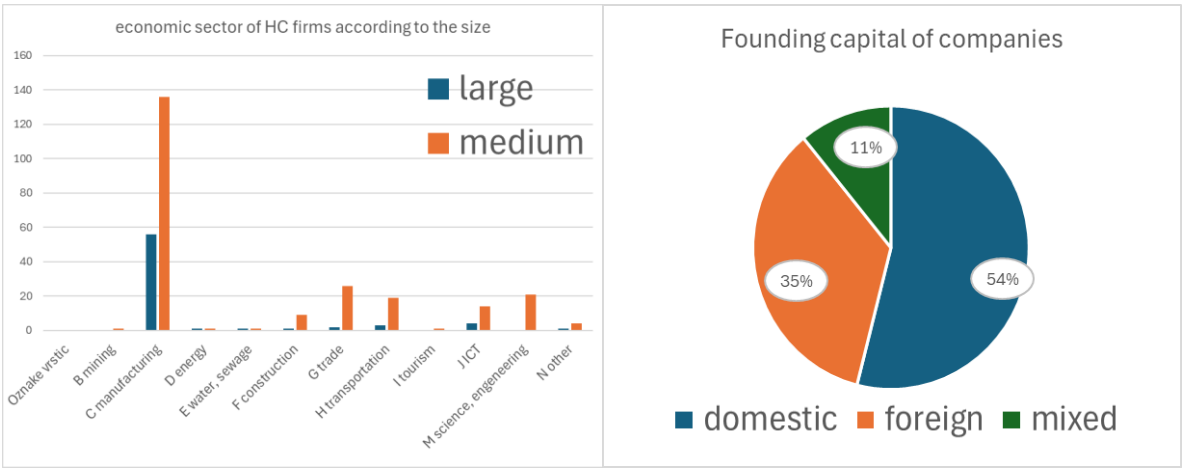
In sum, industrial restructuring in Slovenia is shaped by the need to maintain export competitiveness and upgrade capabilities in a context of labour shortages and ageing, while managing persistent territorial disparities, demographic change and institutional constraints on place-based coordination.

B) Hidden champion towns and firms in Slovenia

5. Spatial distribution and general characteristics

The definition of hidden champion firms (HC firms) in Slovenia is: a medium-sized (50 to 249 employees) or large firm (>250 employees) based in smaller towns (<30,000 inhabitants) that exports goods or services above the national firm average (the share of net sales revenue from foreign markets in total revenue is 43% or higher) and has above-average added value per employee in its economic sector (agriculture, manufacturing, mining, etc.). The data were provided by AJPES (Slovenian Business Register). The final results show that there are 302 hidden champion firms (69 large, 233 medium-sized) distributed across 93 municipalities. 83 of these are considered smaller towns (<30,000 inhabitants). Manufacturing is the predominant economic sector, particularly among large hidden champion firms, followed by mostly medium-sized firms in trade, transportation, science and engineering, and ICT. More than half of the firms are domestically owned (Fig. 1).

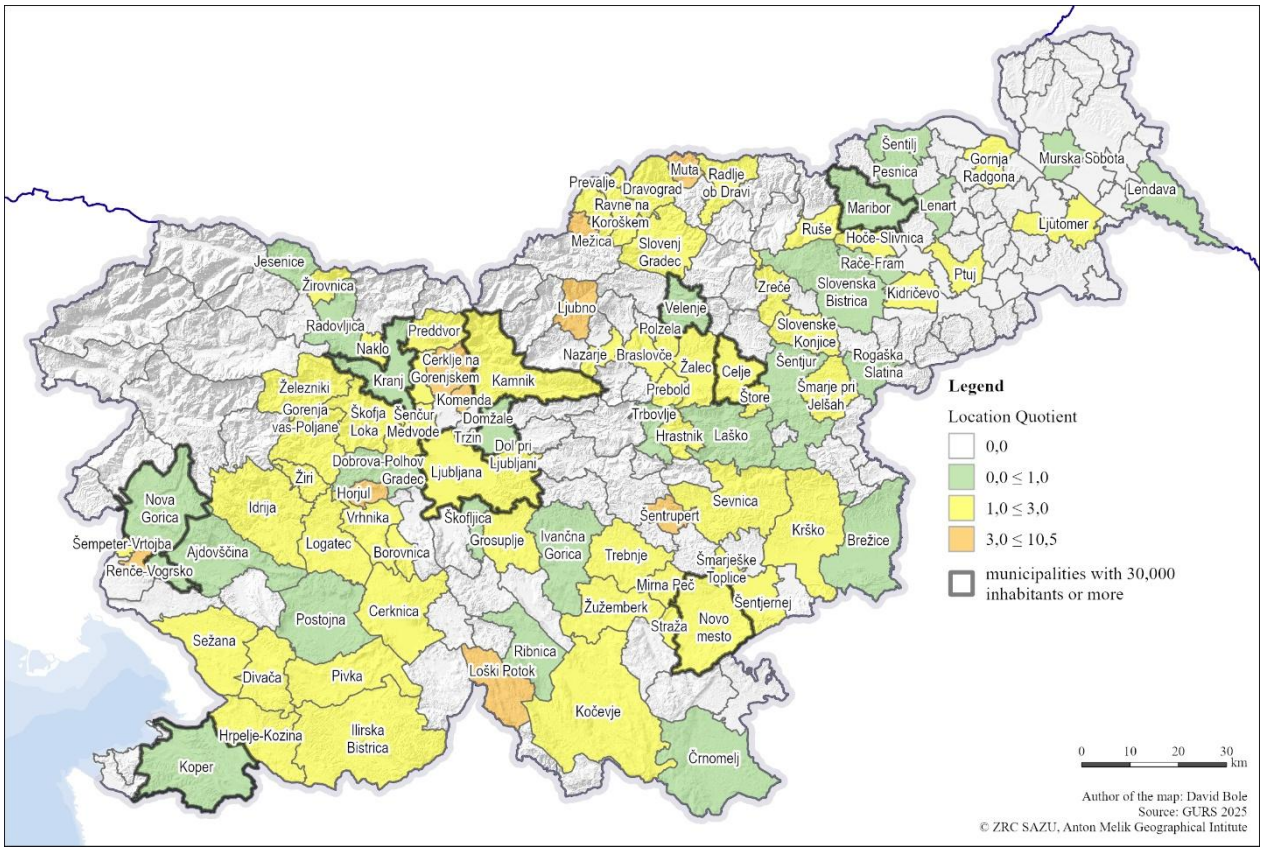
Figure 1: Basic statistical analysis of hidden champion firms



There is no clear pattern in the geographical distribution of HC firms in Slovenia. Although they are more numerous in larger municipalities, the location quotient indicates that they are disproportionately located

in fringe or second-tier towns – still close to major cities such as Ljubljana and Maribor, but in more suburban or semi-rural environments. They are mostly towns strengthened in the socialist era with polycentric spatial policies. Border peripheral areas in the far west and east are underrepresented by HC firms, while recently suburbanised municipalities show higher location quotients, possibly also due to their small population size (Fig. 2).

Figure 2. Location quotients of HC firms in Slovene towns.



6. Economic performance

We built a composite index of economic performance of municipalities from five indicators, each explaining a different economic dimension:

- Average monthly salary captures labour market outcomes,
- Investment in municipality per capita captures capital formation and investments,
- Share of high-growth companies captures economic dynamism and competitiveness,
- Company revenues per capita capture the economic output (profit/loss) of firms,
- Share of employees in medium-high and high-tech captures knowledge and technology intensiveness.

The indicators were standardised into z-scores, equally weighted averages were calculated, and three groups of economic performance were created based on standard deviation cut-offs (below average: index < −0.5; average: −0.5 to +0.5; above average: > +0.5). Fig. 3 shows a link between above average economic performance of towns and the presence of HC firms. Only one town with an HC firm performs below

average (Črnomelj). This impression was further supported by the Kruskal-Wallis statistical test, which showed that all indicators differed significantly between the four groups (towns with large HC firms; towns with medium HC firms; towns with both large and medium HC firms; towns without HC firms). Individual z-scores of economic indicators in different types of towns show a strong link between better economic performance and the presence of HC firms – having more HC firms and a mix of large and medium-sized firms translates into better performance (Fig. 4). The link between domestic or foreign-owned capital and economic performance is less clear, except for better indicators when both types of capital (domestic and foreign) are present.

Figure3: The presence of HC firms according to the economic performance of towns.

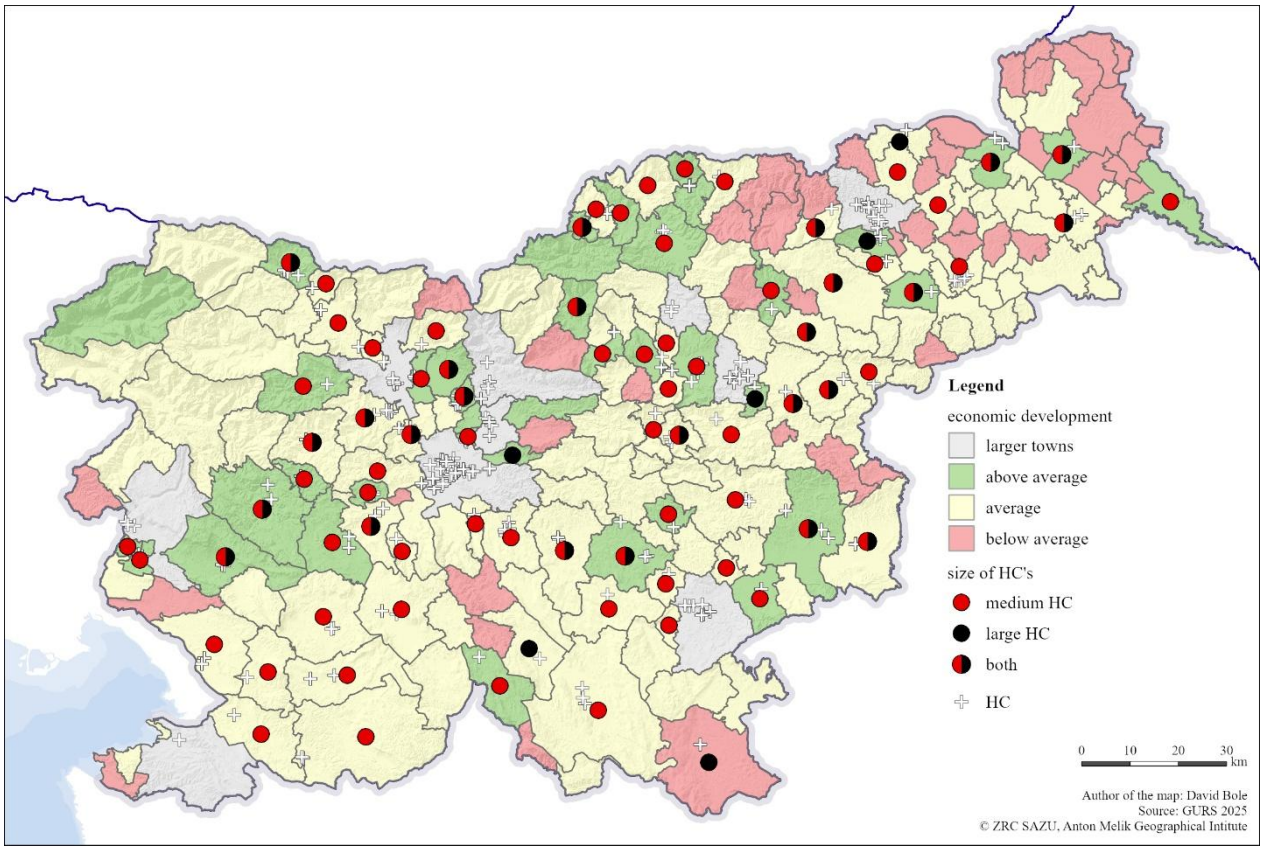


Figure 4: Average z-scores of economic indicators in four types of towns according to the size of HC firms and their origin of foundational capital.

Z-scores	**HC SIZE:**				**HC origin of capital:**			
	no HC	only medium HC	only large HC	both HC types	no HC	domestic only	foreign only	combination
gross income per worker	-0,38849	0,362304	1,073514	0,822436	-0,38849	0,310297	0,407258	0,829607
investments per capita	-0,3725	0,443381	0,623055	0,701314	-0,3725	0,416932	0,288868	0,71083
high tech firms	-0,33003	0,42303	0,399515	0,595157	-0,33003	0,33342	0,263653	0,663896
fast growing companies	-0,18714	0,351684	-0,12603	0,189508	-0,18714	0,313022	-0,14505	0,324129
firm revenue per capita	-0,36821	0,400951	0,314859	0,843134	-0,36821	0,382449	0,077141	0,783029

7. Socioeconomic performance

We collected an additional 21 indicators reflecting basic social, environmental, and health dimensions in all municipalities. Z-scores reveal several notable findings (Fig. 5). The average population is higher in towns with HC firms, as is the labour commuting index (indicating more incoming commuters), along with higher educational attainment and a greater share of industrial employment. Differences in unemployment and ageing are more subtle. Averages also indicate that towns with HC firms have better housing conditions, significantly more work-related injuries, and, surprisingly, less sick leave. Further regression analysis showed that two economic indicators predicted a higher number of medium-sized HC firms (better firm revenues and larger share of fast-growing firms), while social indicators predicted a greater number of large HC firms (larger population, better wages, more work-related injuries, and higher industrial employment).

Figure 5: Z-scores of socioeconomic and health & environment indicators according to the presence of HC firms and their size.

	indicator	1_No_HC	2_Medium_only	3_Large_only	4_Medium_and_Large
socio-economic	Population	-0,45	0,37	0,41	1,27
	Ageing Index	0,16	-0,22	-0,26	-0,25
	Out Commuting Workers	0,37	-0,40	-0,27	-0,87
	Labour Migration Index	-0,39	0,50	0,41	0,72
	Share of Foreign Workers	-0,20	0,28	0,44	0,25
	Share of Tertiary Educated Population	-0,28	0,48	0,16	0,33
	Share of Employment in Industry	-0,28	0,33	0,52	0,52
	Registered Unemployment Share	0,12	-0,26	0,18	-0,06
	Long Term Unemployment Share	0,00	-0,08	0,45	0,05
health & environment	Average Dwelling Area	0,03	0,11	-0,09	-0,35
	Dwellings Without Basic Infrastructure	0,30	-0,40	-0,29	-0,52
	Dwellings Without Central Heating	0,26	-0,38	-0,43	-0,36
	Dwellings Without Sewer Connection	0,24	-0,34	0,00	-0,45
	Dwellings Built Before 1946	0,22	-0,20	-0,58	-0,48
	Dwellings Built Between 1946 and 1990	-0,12	0,03	0,13	0,49
	Dwellings Built After 1990	-0,06	0,13	0,43	-0,10
	Vacant Dwellings	0,28	-0,37	-0,19	-0,52
	Premature Mortality	0,04	-0,09	0,27	-0,08
	Sick Leave Days	0,22	-0,36	-0,58	-0,13
	General Crime per 1000 Inhabitants	-0,18	0,31	0,22	0,16
	Workplace Injuries per 1000 Employed	-0,05	0,00	0,72	0,07

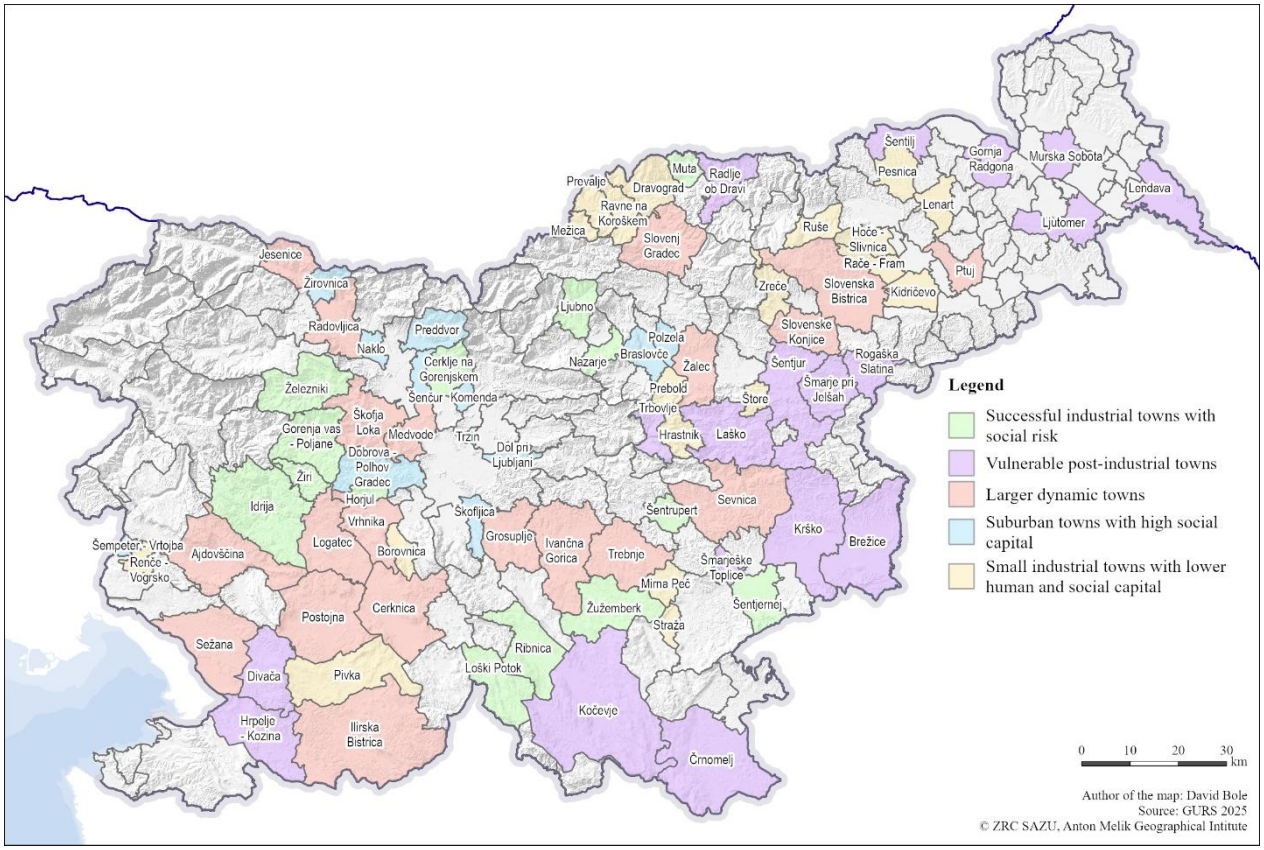
8. Classification of towns with HC firms

The classification was done to reduce the number of indicators based on principal component analysis. First, we “cleaned” the autocorrelated indicators to eliminate multicollinearity, created eight synthetic components that explained over 75 % of all variance and lastly run hierarchical k-means clustering analysis to derive five distinct types of towns. Figure 6 shows those types.

The first type is labelled as economically successful industrial towns with social risk. These towns have strong economic indicators and predominantly manufacturing or industrial profiles, with a dominance of medium-sized HC firms, but they suffer from poor housing conditions and a high aging index. They are mostly older peripheral industrial centres established during the socialist era, which have managed to economically transform but still lag in social infrastructure. Vulnerable post-industrial towns show the

worst economic, social, and other indicators in the mix. They are mostly service-oriented, have high unemployment, and are geographically concentrated in less developed Eastern Slovenia. Larger dynamic towns are bigger (on average just below the 30,000-population threshold), have good economic indicators, and feature a mix of medium and large HCs. On average, these are also older towns with socialist industrial development attained by socialist polycentric spatial policy. The next type is of a newer, post-socialist development. Suburban towns with high social capital have the best social indicators (education, age, unemployment), moderate economic success, and are dominated by the service sector. These are typically suburbanized rural towns with new secondary economic zones developed in the last 20 years. At the other end of the spectrum are small industrial towns with lower human and social capital. These towns are also smaller and have been industrialised earlier in the socialist era and have a distinct manufacturing profile with lower social & human capital indicators but better health & housing indicators.

Figure 6: Types of hidden champion towns according to the statistical analysis.



C) The local context: case study of HC towns in Slovenia

From the above analysis we have selected Ajdovščina, Kočevje, and Komenda as typical representatives of hidden champion towns in Slovenia. Table 1 summarises their characteristics. Most importantly, from an evolutionary economic perspective, they represent three representing types of towns in Slovenia. Ajdovščina is an old industrial centre where past manufacturing traditions were transferred to state-run socialist companies, and after a brief crisis, it managed to continue this tradition. Companies are domestically owned, typically in low- or medium-tech manufacturing, yet still very successful. The involvement of institutional actors in this economic success, particularly the municipality, is high. Kočevje

has similar historical trajectories but differs significantly in post-socialist development. When the majority of companies ceased operations in the 1990s and 2000s, the crisis was severe and the path to recovery was long, depending on foreign-led investments. Of all the towns, Kočevje remains the least stable and most vulnerable to shocks. Komenda is an unusual case, where institutional actors managed to transform a rural suburban community into an economic powerhouse, leveraging their geographical proximity to Ljubljana. Creating a well-connected business zone in a strategic location and attracting both domestic SMEs and some foreign investment has created a major economic player with eight hidden champion firms. We believe that those three case study towns reflect the diversity of HC towns in Slovenia and are suitable candidates for more qualitative work in the next phases of the project.

Table 1: Key characteristics of proposed case study towns.

name	Type	Main development paths	HC firm structure	Predominant industry
Ajdovščina	Larger dynamic town	Path extension, renewal	Domestic, large, older	Low and medium-tech manufacturing (food, machinery, textiles)
Kočevje	Vulnerable post-industrial town	Path importation and extension	Foreign, large, mix of newer and older	Medium and high-tech manufacturing (robotics, chemical and textile industry)
Komenda	Suburban with high social capital	New path creation	Mix of foreign and domestic, medium-sized and newer	Medium and high-tech manufacturing, niche specialisation

Statistical data from the Slovenian statistical office (SURS) reflect the key characteristics: Kočevje is stagnating in terms of population and number of workplaces, having undergone deindustrialisation and experiencing persistently above-average unemployment. Ajdovščina shows incremental growth in population and workplaces, with reindustrialisation tendencies and below-average unemployment. Komenda exhibits rapid population and economic growth in the last two decades, with almost a 20% share of medium-high to high-tech workplaces (Fig. 7, 8, 9, 10).

Figure 7: Population in three case study HC towns.

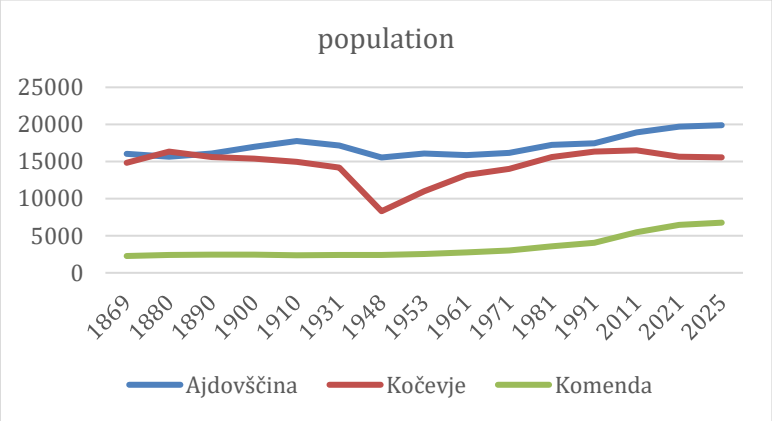


Figure 8: Number of workplaces and share of industrial employment in case study HC towns (B, C, F sectors).

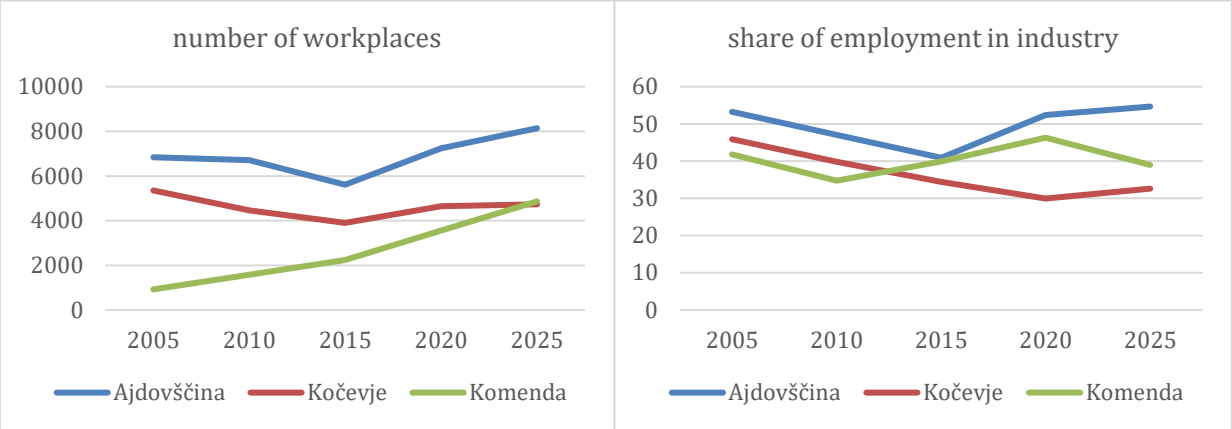


Figure 9: Unemployment in case study HC towns.

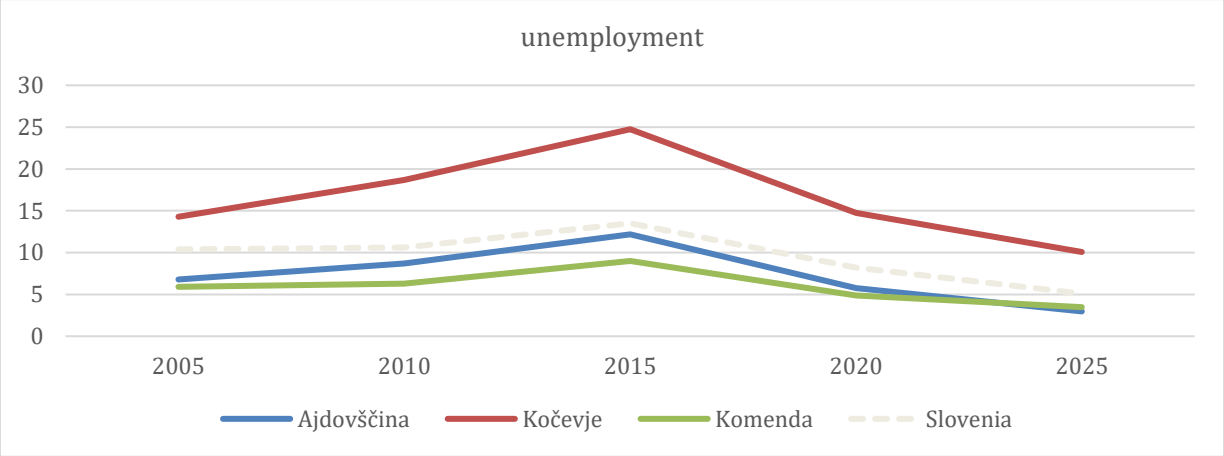
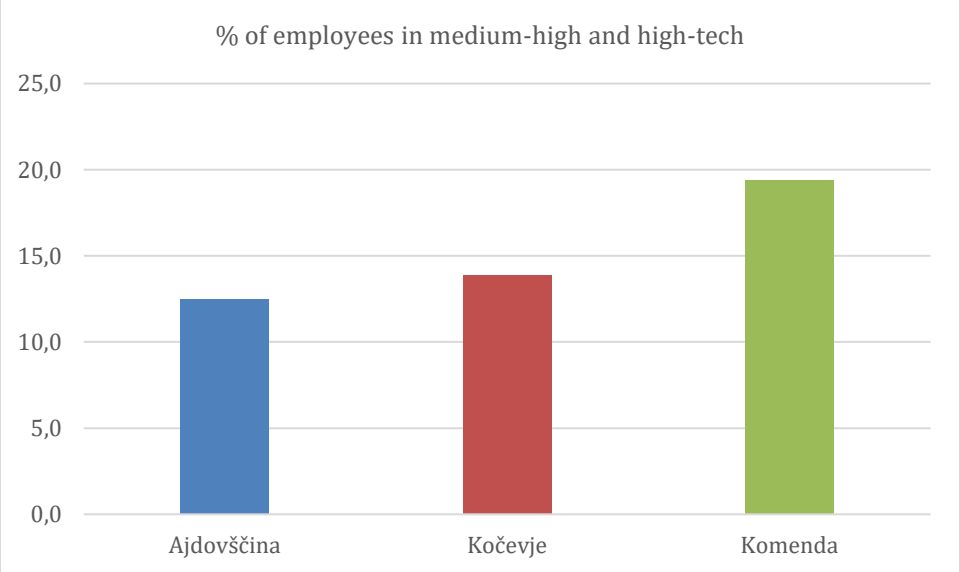


Figure 10: Share of employees in medium-high and high-tech sectors in case study HC towns.



9. Ajdovščina – the old industrial phoenix

Ajdovščina is a municipality with approximately 20,000 residents in the Vipava Valley, whose development has long been shaped by its strategic position along major transportation routes. The valley provides the shortest route between Central Europe and the Apennine Peninsula, which made it economically significant from early on. Settlement traces date to the pre-Roman period, when Illyrian tribes inhabited the area (Plesničar, 1998). Roman colonization began soon after 181 BC, following the foundation of Aquileia, a starting point for Roman expansion eastward and southeastward (Lazarini, 2012). Ajdovščina's uniqueness lies in its late-antique origins: it developed on the site of the Roman military camp Castra and is "the only Slovenian town that owes its origin and development to the defensive framework of a late-antique military camp" (Osmuk et al., 1994, p. 23). Its walls shaped the settlement for centuries, as "until the 18th century, the town's growth was limited by the walls" (ibid.).

The industrial development of Ajdovščina began in the 16th century near the Hubelj karst spring, whose water power enabled the first manufacturing facilities. Among the oldest industries were metalworking (iron smelting and copper processing), active from the 16th to the 20th century, and milling and food production linked to mills, a brewery, and other facilities in the Pale complex and the Jochmann Mill. The 17th century also brought the beginnings of the paper industry and textile activities. In the 19th century, Ajdovščina entered early industrialization: in 1828, a mechanical spinning mill was established, one of the first industrial facilities in Slovenia and marking the start of the modern textile industry. Alongside textiles, the paper, chemical, food, and electricity sectors gradually transformed Ajdovščina from a craft village into an industrial centre (Beguš, 2020; Goriški muzej, n.d.).

The economic boom at the beginning of the 20th century was interrupted by World War I, when the area was affected by the proximity of the front lines. After the war, Ajdovščina became part of the Kingdom of Italy under the Treaty of Rapallo (1920), which brought political and social changes as well as a policy of Italianization. During World War II, the area was marked by partisan resistance. After World War II, most of the Primorska region (western Slovenia) was incorporated into Slovenian national territory and Yugoslavia. The postwar policy of industrialization and polycentric development, which primarily strengthened smaller towns in Slovenia, enabled Ajdovščina to become the center of the Upper Vipava Valley (Ivanović et al., 2012). The town underwent significant industrial and urban development. Building on pre-war economic activities, important, state-owned enterprises were established: the Tekstina textile factory, the food companies Fructal and Mlinotest, the Lipa furniture industry, the construction company SGP Primorje, as well as IKA (textiles) and the Ajdovščina General Metal Company (Goriški Museum, n.d.). Industrial facilities gradually spread out into larger industrial zones – the Lipa area in the northwest, the Mlinotest, Fructal, and Tekstina area in the south, and the Primorje complex between Hubelj river and Vipavska Road (Ivanović et al., 2012). In the second half of the 20th century, factories had a significant impact on social life. "Factories" were not merely economic enterprises; they also provided employees with social security, housing, cultural activities, and sports programs, thereby significantly influencing the development of the local community (Goriški muzej, n.d.).

Following Slovenia's independence and the transition from a socialist to a market economy, many companies lost the Yugoslav market, leading to a decline in production and the collapse of some industrial facilities. Privatization and changes in ownership (Fructal, Mlinotest) transformed the city's economic landscape, and several newer companies in related sectors also emerged (for example, INCOM in the food industry). The municipality became a major player; around the year 2000, it began extensively developing and organizing areas for commercial and manufacturing activities, thereby actively attracting investors. The next major turning point was the economic crisis that began in 2008 and was particularly severe in Slovenia. In particular, the collapse of two major employers–the construction company Primorje and the textile manufacturer IKA–severely affected Ajdovščina, especially during the 2010–2015 period, when

unemployment reached 12.2%. The municipality also intervened during this crisis by offering companies certain incentives in the form of compensation for building land and subsidies; in 2015, the municipality allocated up to €2 million in subsidies for land purchases, utility infrastructure in industrial zones, and other subsidies; it even acquired ownership stakes in certain companies facing crisis (such as those in the food industry), thereby saving them from collapse.

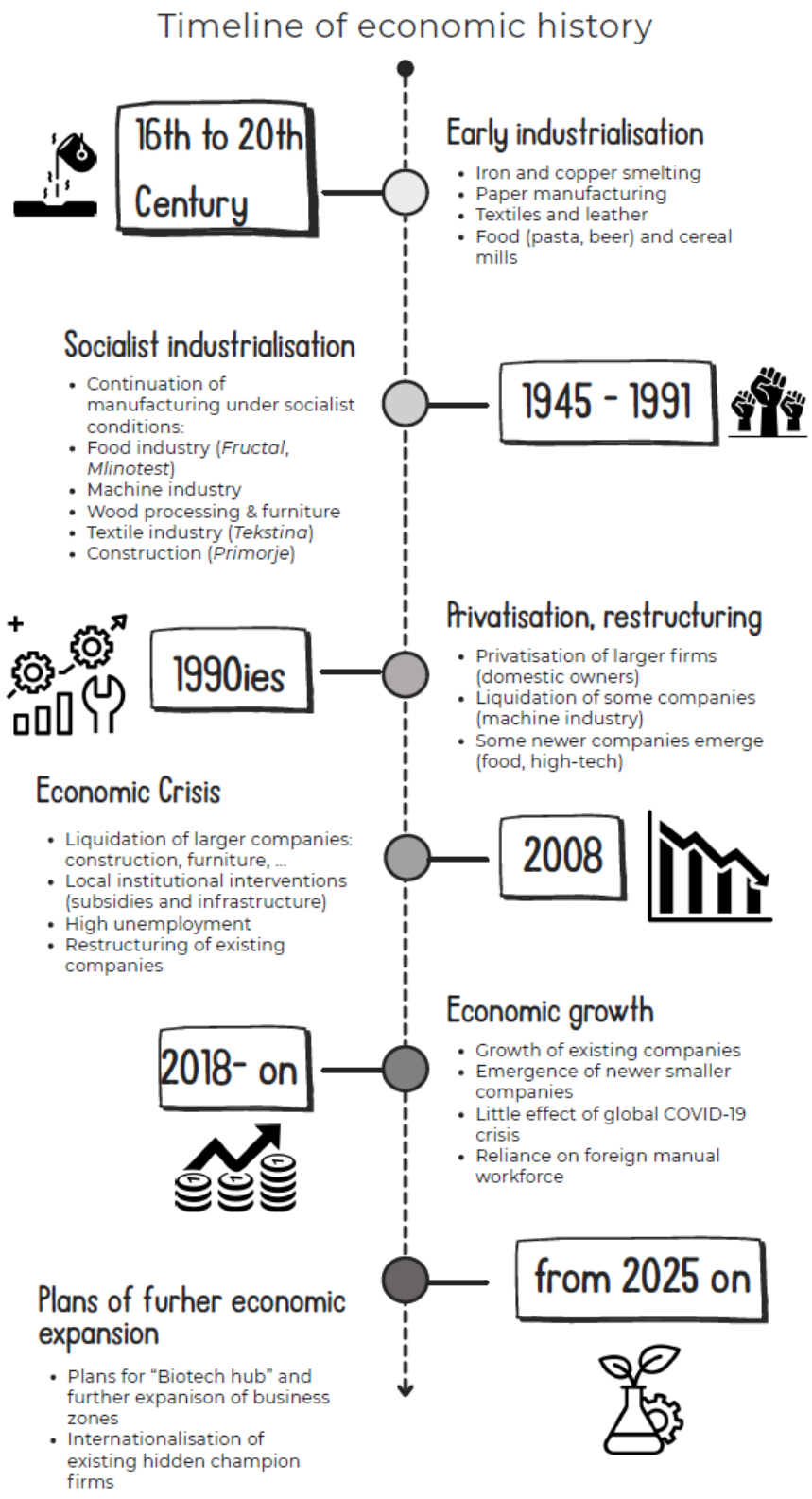
These interventions were clearly successful, as headlines about Ajdovščina's economic success and new growth have been appearing in the media since 2018. New companies have emerged, mostly in related sectors (the food industry), while older ones have stabilized their operations. The economy is based on a mix of established, older companies that have successfully restructured and newer companies in similar sectors (so-called "related variety"). These are low- and medium-tech companies in the food (Fructal, Mlinotest, INCOM), textile (Tekstina), metal, and machinery industries, as well as a few high-tech companies (Pipistrel, C-Astral). All are strongly export-oriented. Foreign investment has also increased, particularly from Italy. The number of jobs rose from 5,600 to 8,140 between 2015 and 2025, and unemployment is minimal. The COVID-related recession did not significantly impact the municipality's economic and social development, which highlights the resilience of local businesses—perhaps also because Ajdovščina's sectoral structure is such that the crisis affected it the least (food, basic metal products, and similar sectors).

In addition to economic entities, the municipality is certainly a key stakeholder, having actively shaped economic development in the past through the planning of industrial zones, tax policy, subsidies, and active investments in specific companies. In 2022, the municipality was awarded the title of "most innovative Slovenian municipality" (Čepar, 2022a), and it is currently planning new investments in the construction of a "biotech hub," aiming to achieve technological advancement primarily in the food industry. The Chamber of Crafts and Small Businesses, which has a branch in Ajdovščina, is also a key stakeholder in the regional innovation system; together with the municipality of Ajdovščina and neighbouring municipality of Vipava, it is a founding member of the Regional Development Agency ROD Ajdovščina. This agency coordinates projects in the fields of entrepreneurship, rural development, the environment, and tourism, and serves as an important support institution. Ajdovščina is also the seat of the administrative unit and has a secondary school. Also significant are certain influential individuals—entrepreneurs who have in the past generously funded the municipal budget for infrastructure development (Čepar, 2022b).

The largest employers are Mlinotest (food industry, domestically owned), Fructal (food industry, foreign-owned), Kolektor (machinery industry, a branch of a Slovenian-owned company), Sartorius BIA Separations (a foreign-owned biotechnology company), Pipistrel (aerospace industry, formerly domestically owned but recently sold to Textreon, American multi-industry company), and similar companies. Most are from industry, some from transportation and logistics, and there are fewer service companies. There are two hidden champions: the first is *INCOM*, a family-owned company established after independence that produces food products, most of which are sold under foreign brands. A high level of automation and the pursuit of energy solutions have proven crucial to their competitiveness in the European and global markets. The company employs between 200 and 250 workers, with foreign labour making up a significant portion; however, the company has faced opposition from unions in the past due to alleged exploitation (Novak, 2016). The second company is *Tekstina*. It is an unexpected hidden champion, as it is an older company, established during the socialist era, which was a typical state-run and labour-intensive enterprise. Following independence, the company underwent privatization, mass layoffs, and a thorough restructuring, particularly toward the production of higher-quality textiles and automation. The company has been in the spotlight several times due to the owners' controversial business practices—ownership has changed hands multiple times, but has consolidated over the past five years and is currently owned by

a single domestic owner. Today, the company has found its niche primarily in the production of fashion fabrics (shirting fabrics).

Figure 11: Timeline of main historical junctures in Ajdovščina.



10. Kočevje: the stagnating deindustrialised town

Kočevje lies in southern Slovenia on a karst plain at about 460 m above sea level. The plain is crossed by the Rinža River and surrounded by forested hills, many rising above 1,000 m. Due to its remoteness and sparse population, the area became, in the 14th century, a long-term settlement area for German-speaking inhabitants, lasting more than 600 years. Kočevje's development was strongly shaped by its isolation and vast forests. Industrialisation began in the early 19th century with the emergence of small enterprises, especially in iron and steel, wood processing, and glass production. Brown coal mining, which started in 1803, became the dominant economic activity until the mid-1960s, structuring both economic and social life. The textile industry also played a notable role. Although wood was widely used as a raw material in industry, forestry and timber production were limited by poor transport connections.

A turning point came in 1893 with the opening of the Ljubljana–Kočevje railway, which improved coal transport and enabled the expansion of sawmills in surrounding forests. The growth of mining attracted immigrants, mainly Slovenians. However, after the collapse of the Austro-Hungarian Empire and the economic crises between the world wars, coal mining declined. During the Second World War, the German-speaking population was expelled, and wartime destruction further depopulated the region. In the post-war period, socialist reforms reshaped the economy and society, while the establishment of a large closed military zone area contributed to a lasting sense of isolation and mystique.

A major turning point came during the Second World War, when most of the German-speaking population (around 11,500 people) left in the winter of 1941–42. By the first post-war census in 1948, Kočevje had only about 8,000 inhabitants. After the war, socialist authorities nationalised most of the region and assigned Kočevje a new role. Private land ownership was replaced by a large-scale socialist farming system that reshaped land use, cultivation, and the landscape. Industry gradually recovered, particularly in coal, timber, and textiles, while transport and chemical industries also developed. However, small business and crafts declined. Coal mining remained the key economic sector until the late 1960s, employing up to 1,000 people. In 1961, surface mining ended and extraction moved underground, but output steadily decreased. The final closure of the mine in 1978 had a major impact on the local economy.

Following Slovenia's independence in 1991, Kočevje experienced a severe economic crisis. Many businesses collapsed during the transition from socialism, while privatisation of former state-owned enterprises led to mass unemployment, exceeding 20%. Emigration, especially among young people, increased, educational programmes were reduced, and many residents became dependent on social assistance.

On the other note, gradual improvements followed. The removal of the closed military zone opened the region and supported the early development of tourism. Slovenia's accession to the European Union in 2004 and local policy changes after 2010 encouraged investment and infrastructure development. A significant milestone came in 2019 with the arrival of company Yaskawa, a global robotics company, alongside the growth of other firms such as Koles, Gozdarstvo Grča, Rotis, Intersocks, and Melamin. Education programmes in technical fields were modernised, and in 2021 the passenger rail connection between Kočevje and Ljubljana was restored, marking further regional integration and recovery.

According to data from the Statistical Office of the Republic of Slovenia, Kočevje's population has largely stagnated since Slovenia's independence in 1991, remaining around 16,000, with a slight decline in the last decade. In 2025, approximately 15,500 people lived in the municipality. Demographic trends indicate

an ageing population (ageing index of 167 in 2024), a growing share of foreign nationals among the working-age population (10% in 2024), and an increase in residents with tertiary education (18% in 2024).

Employment declined significantly after 1991, reaching a low of about 3,900 jobs in 2014 during the financial and economic crisis, when unemployment peaked at 25%. Since then, the situation has gradually improved. By 2025, the number of jobs rose to around 4,700, while unemployment fell to 10%. Over the past decade, the average monthly wage increased by 63%, and both investment in fixed assets and corporate revenues more than doubled.

Despite these positive trends, commuting has increased markedly. In 2000, one in five residents worked outside the municipality; by 2024, this had risen to one in two. Structural changes in employment are also evident. The share of workers in industry declined slightly from 34% in 2014 to 32% in 2024, while employment in medium-sized enterprises (50–249 employees) grew from 38% to 43%.

However, several concerning trends persist. Despite economic recovery, Kočevje has experienced rising rates of premature mortality, an increasing number of sick leave days, and higher crime rates. These indicators suggest that, alongside economic progress, the municipality continues to face important social and health-related challenges.

Key stakeholders/actors in the municipality from the institutional and economic sector (schools, cultural/heritage institutions, regional development agencies, health and administrative institutions, etc.) are:

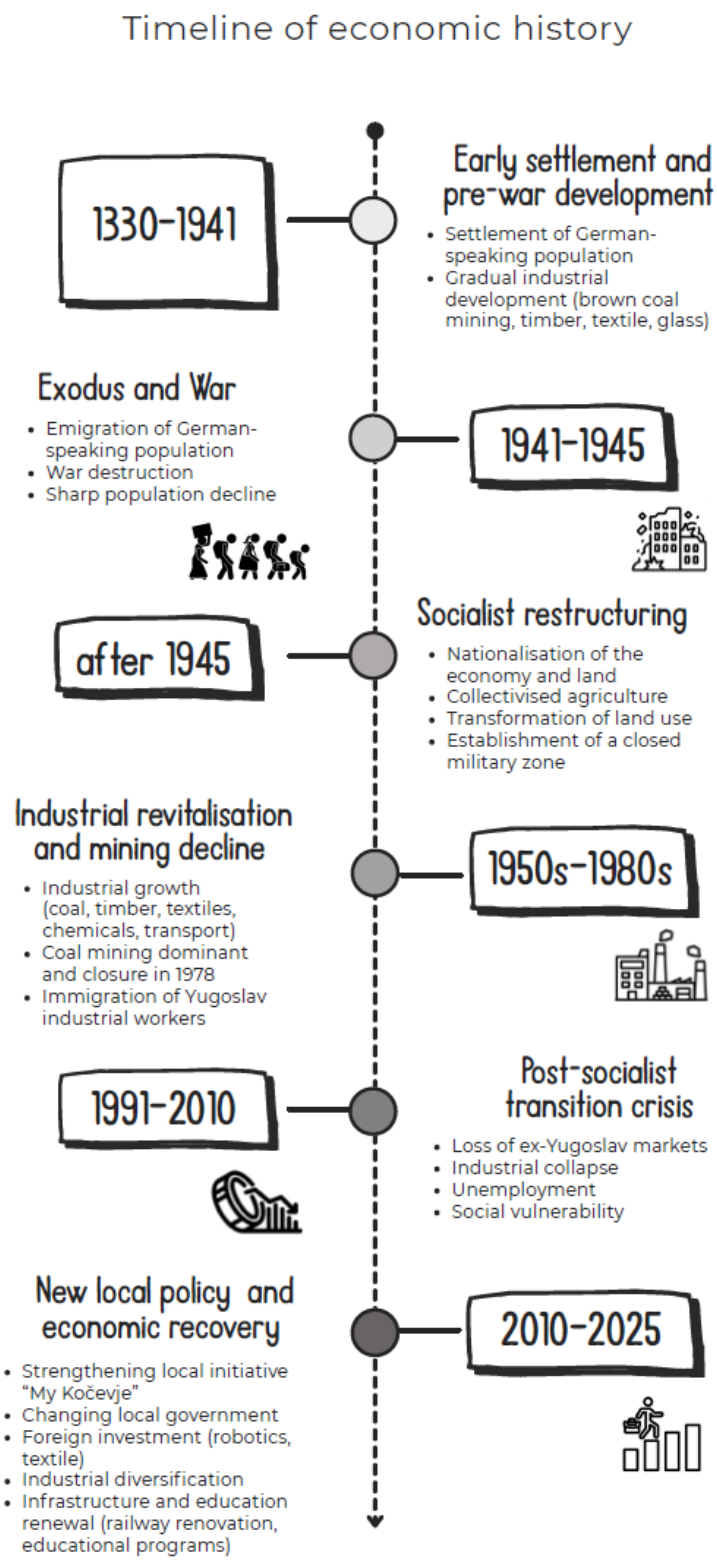
- Companies: Melamin, Intersocks, Yaskava, Koles, Gozdarstvo Grča, SiDG, ITAS-CAS/Putzmeister, Rotis, Kočevski les
- Public institutions: Municipality of Kočevje, Kočevje Public Institute for Tourism and Culture (Zavod Kočevsko)
- Education: Kočevje Grammar School and Secondary School, Kočevje Adult Education Centre
- Support for economic development: Ribnica Kočevje Development Centre, Kočevje Business Incubator
- Tourism: Tourist Information Centre (TIC Kočevje), Kočevje Campsite, Berlog Hostel
- Healthcare: Kočevje Health Centre

Hidden champion firms include Melamin, Intersocks, and Yaskawa. Of these, Melamin is the largest employer, with around 200 staff. Intersocks employs about 175 people, while Yaskawa has roughly 145 employees, although its workforce is growing the fastest due to ongoing expansion of production and logistics capacities.

Melamin is a traditional Slovenian chemical company specialising in melamine resins and other products for industries such as construction, furniture, and paper. It is the only major company in Kočevje that survived the post-independence economic transition without bankruptcy. The company is known for its in-house development and higher added value. After an industrial accident in 2022, it has been undergoing recovery and adaptation, yet remains a key pillar of the local industrial tradition. *Intersocks* is an export-oriented textile company producing sports and technical socks for major global brands. Unlike traditional textile producers, it is characterised by a high level of automation and technological sophistication. The company operates under Italian ownership. *Yaskawa Europe Robotics* represents the high-tech sector in Kočevje. As a subsidiary of a Japanese multinational, it produces industrial robots and advanced automation systems. Its presence supports knowledge transfer, technological development, and

strengthens Kočevje's role as an emerging European robotics hub. The company is aligned with Industry 4.0 trends and provides highly skilled employment opportunities.

Figure 12: Timeline of main historical junctures in Kočevje.



11. Komenda: the unlikely economic hub

The municipality of Komenda is located in central Slovenia, 15 km north of the capital, Ljubljana, and near the country's main international airport. Spanning around 24 km², it comprises 15 settlements and has a population of approximately 7,000. Komenda's economic development is rooted in agriculture, horse breeding, crafts (initially clay-related) and a modern business zone. The first written record of the Komenda parish dates back to 1147. The municipality's development was significantly influenced by the Sovereign Order of Malta, which ran a local administrative unit for centuries. The name 'Komenda' means 'the seat of the commander' – the administrator of the Order of Malta. Peter Pavel Glavar (1721–1784) left a significant mark on the area's development. He was a priest, intellectual, landowner, beekeeper and educator, as well as the son of a Knight of Malta and commander of the Maltese estate in Komenda. He led the parish from 1744 to 1766 while also serving as the tenant of the Maltese estate in Komenda. The knowledge he imparted influenced the entrepreneurial spirit of the people of Komenda. This is reflected in innovative approaches to social entrepreneurship in rural areas today.

After the Second World War most locals found employment in the nearby industrial sector in Kamnik. Komenda itself remained renowned for its agriculture, especially high-quality seed potatoes. In 1963, the Agricultural Institute of Slovenia relocated its potato breeding programme to Komenda. In 1986, the institute constructed a modern Potato Selection Centre in the area, equipped with storage facilities and laboratories. Komenda's rich tradition of horse breeding has also influenced on the area's post-war agricultural development. Founded in 1955, the Equestrian Club organises Slovenia’s privately run spring and autumn agricultural and craft fair, one of Slovenia’s largest.

A key socio-economic turning point in Komenda's development was the separation from the municipality of Kamnik and the establishment of its own municipality of Komenda in 1998. This enabled independent local planning and investment decisions, resulting in a rapid transformation of the rural countryside. 93 hectares of agricultural land was reallocated for the development of 'Žeje pri Komendi' business zone, built between 2005 and 2012. It is located less than 3 km from the Ljubljana–Kranj highway and near the international airport. The managing company is predominantly owned by the municipality. The business zone area is formally declared as an uninhabited settlement, reflecting its dominance in the local spatial structure. According to development indicators, Komenda was ranked first among Slovenia's 212 municipalities in the period 2024–2025.

Komenda has favourable demographic trends with increasing population over the past decades, the result of positive natural increase and net migration. It is positioned in the suburbanised belt near Ljubljana. The municipality also has a relatively young population. In 2025, the shares of young (0–14 years: 18.3%) and working-age population (15–64 years: 65.7%) exceeded national averages (14.4% and 63.4%), while the share of older residents (65+ years: 15.9%) was significantly lower than the national figure (22.1%). Accordingly, both the average age (40.2 vs. 44.4 years) and the ageing index were lower than the Slovenian average. Labour market indicators are similarly strong. The number of jobs has increased over the past two decades and was around five times higher in 2025 than in 2005. In 2024, the employment rate among working-age residents reached 75%, exceeding the national average of 70%. Average monthly net earnings were slightly above the Slovenian average (by 0.6% in 2025). Komenda functions as a net employment centre, offering more jobs than it has working residents. At the same time, 74.3% of employed residents worked outside the municipality, meaning that roughly one quarter both lived and worked in Komenda. Unemployment in Komenda has traditionally remained below the national average.

Within the Municipality of Komenda, a range of public institutions perform key administrative, social, and cultural functions. At the administrative level, the municipality manages its own governance and essential public services. Komenda also provides basic educational infrastructure, including the primary school and kindergarten. Tourism, Culture and Sports association (ZTKŠ), established in June 2025, serves as a public body promoting tourist attractions in the area. Additional key institutions include a library, the Peter Pavel Glavar foundation, the Komenda cultural centre. Regional development is supported by three main actors: Regional Development Agency involved in coordination and strategic projects, the local action group "From town to village" involved in the countryside development, and the business zone Komenda, managing the municipality's main economic area. Healthcare and social services are provided through the Komenda health office.

Komenda is home to eight medium-sized hidden champion firms. Although they are very diverse, they all have a strong focus on niche industrial or technological fields and make significant in-house investments in research, product development and prototyping. They also have close links with global corporations and are able to either grow from local firms into internationally active firms or adapt global trends to specific local and niche markets. Raycap c*reates* innovative, customised technological solutions for the telecommunications, renewable energy, transportation, and defence industries. With 283 employees in 2024, it is one of the largest firms in Komenda. With 274 employees in 2024, RLS specialis*es* in developing and producing advanced magnetic encoders and motion-sensing components used in a wide range of applications, including humanoid and surgical robots, aerospace systems, and major solar power plants. Renishaw, a leading British metrology firm, owns a 50% stake in RLS and provides global sales and support for its products. In turn, RLS manages Renishaw's sales activities in the Adriatic region.

IMP Pumps employed 188 people in 2024. It is a specialist producer of pumps and pumping systems. Founded in 1947, it remained part of the IMP Group until the late 1980s. It successfully adapted to the post-socialist economic transition of the 1990s, including privatisation in 1997 and 1999. Following Slovenia's accession to the European Union, the company expanded its sales network across EU markets. Today, over 96% of its production is exported to more than 80 countries worldwide.

UF PRO, which has 80 employees, grew out of Uni&Forma, a company founded in 1997 with the aim of producing durable tactical clothing for major state institutions, including the Slovenian army, police and customs service. Following years of experience, the company started working with smaller police and military units requiring high-quality outdoor tactical apparel. These projects led to the creation of the UF PRO brand. Since 2019, UF PRO has been part of Mehler Systems, which holds a 51% ownership stake.

Plastika Virant employed 83 people in 2024. It is a family-owned company with over 30 years' experience in producing plastic cosmetic packaging. A large proportion of the company's output is exported, with over 75% of annual production sold to other European countries.

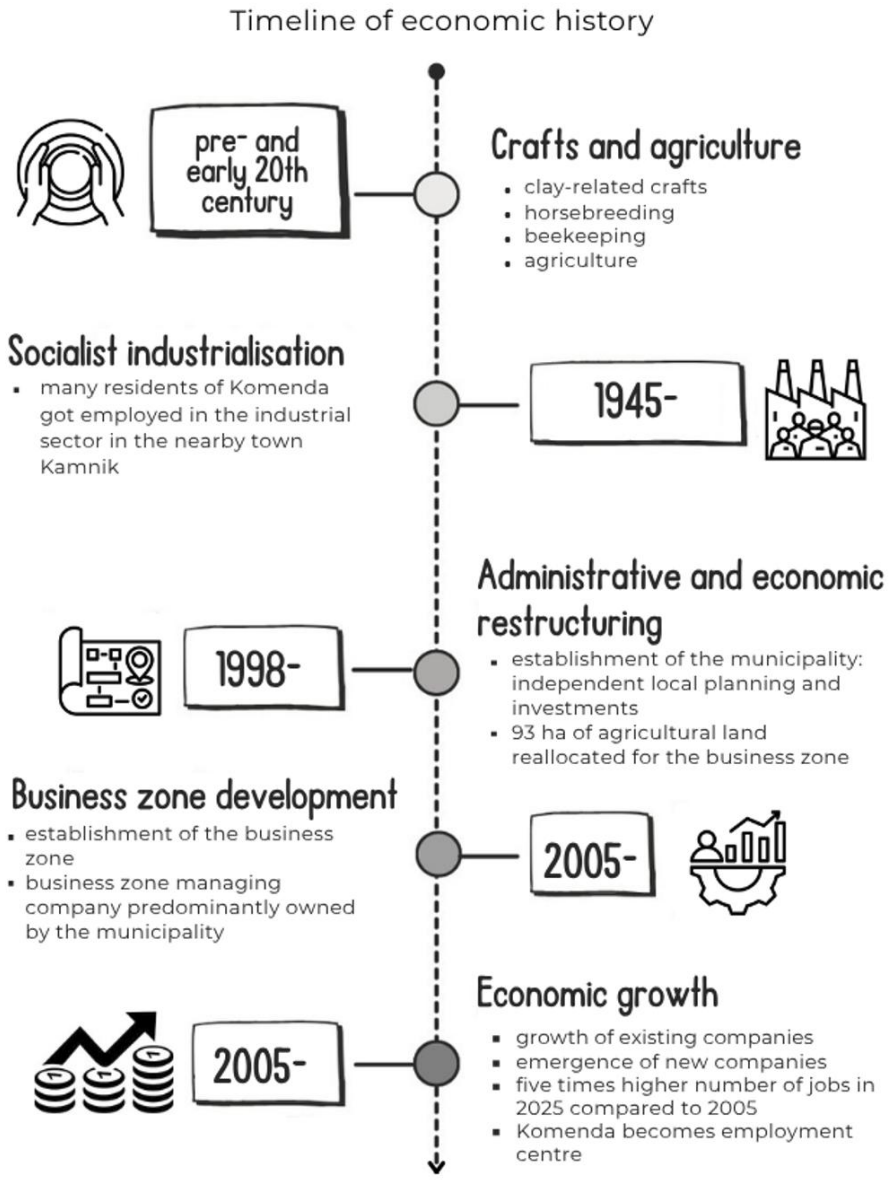
Adrial employed 74 people in 2024. It has grown from a small local business into an internationally recognised producer of eyewear. In 2017, Adrial set up an advanced optical laboratory equipped with sophisticated technology to ensure the precision and reliability of its lens production. Its lenses are manufactured in line with EU medical device standards. The company supplies 50 online shops and serves customers in over 30 markets worldwide.

Interexport employed 77 people in 2024. It is an international trading company with a tradition spanning more than fifty years. Since 2004, it has been active in the fields of medicine and speech recognition. In 2006, Interexport began collaborating with Philips on the development of Slovene-language speech

recognition software, initially for use in radiology. Its speech recognition systems for administrative workflows have been adopted by over 1,000 users in Slovenian healthcare institutions. Interexport collaborates with major international firms such as AGFA Healthcare IT, Agfa Radiology Solutions, Siemens Healthineers, Barco and 3D Histech.

LM TEK, formerly EKWB, was founded in 2003. It specialises in liquid cooling systems for high-performance personal computers. However, in 2024, the company encountered significant financial and organisational challenges. LM TEK, a company established in 2024 and backed by the Egzakta Group, now oversees the development, production and distribution of products. With access to research and development capacity, international markets and strategic backing, LM TEK has developed the Enterprise AI Factory: an on-premises AI solution that combines advanced cooling hardware with intelligent software.

Figure 13: Timeline of main historical junctures in Komenda.



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D) National context: Hungary

1. Current conditions and challenges

The current socio-spatial processes have been shaped profoundly by the post-socialist/capitalist transition which took off in Hungary as early as in the 1980s, granting an enhanced autonomy to economic agents. In the 1990s, reforms were rolling out and cemented the regulative-institutional framework of the capitalist market along Neoliberal principles, which embraced privatization and FDI-driven restructuring in the industry, entailing bankruptcies, closures and mass unemployment on the one hand and new trajectories at sectoral and also at local scale on the other (Bockman, Eyal 2002). This model of the transition placed Hungary in the lead of CEE in capital flows and global embedding nevertheless, it also exhibited risks and vulnerability in times of crises. Due to the structural deficits and series of policy failures, Hungary is lagging behind the majority of EU and also of CEE economies today. The GDP per capita is one of the lowest, 76% of the EU average (2024), while actual consumption is only at 73% level of the EU average. The national economy is highly dependent on external relations. The export of goods and services was 75.4 % of GDP in 2024, yet it has been declining since 2022 when it peaked 89.8 %.

The inflation rate is one of the highest in Europe, fuelled constantly by fiscal deficit which has been a powerful constraint on state interventions since the 1980s (Éber et al, 2014). Although, by UN HDI Hungary is positioned in a 'very high' category (UN 2025), long-term perspectives are being undermined by the constantly underfunded public health system, declining performance of students at school (PISA tests), and persisting social polarization, i.e. having one-fifth of the households below poverty threshold in a country with the sharpest decrease in the real value of median income (Eurostat, 2023).

Hungary faces an unfolding demographic crisis. Since 1980 (10,7 M) the population has been constantly declining, we lost almost 1,3 M people due to ageing and outward migration. The current population is slightly below 9,5 M. Currently, 74,6% of the above-15 population is active/employed due to a favourable upward trend in the past decade. 21,1% is employed in the industry (B+C+D+E sectors). This data conceals powerful spatial differences: in Budapest and major (100.000+) cities, institutional and producer services were fuelling the dynamics, while in small land medium size towns, industrial employment was the engine of growth. 70% of the population is an urban resident, yet towns and cities exhibited diverse demographic trajectories. Since 2001, the major gains have been absorbed by the small towns of the Budapest urban region and a few places near major county towns due to suburbanisation, as well as by spa towns and the Balaton tourist region. The majority of small towns are declining demographically; however, municipalities in regions targeted by industrial investments since the 1990s have clearly outperformed the rest.

2. Shocks, crises and industrial restructuring and the transitions of the urban system

2.1. Modernity has been closely linked to industrial development in Hungary in both national and local development discourses and policies throughout historical periods. The emergence of industrial capitalism here displayed peripheral characteristics from the outset. The foundations were established in food production and trade (primarily wheat and flour), supported by railway network development, which consolidated the position of the national economy within the customs union and the spatial division of labour within the Austro-Hungarian Monarchy (1867-1918) and in Europe. The second half of the 'long 19th century' (Braudel, 2013) has brought prosperity in terms of capital accumulation, sectoral diversification, and social change, strongly supported by the central state agency (railway construction, military industry). The economic power i.e. banks, key agents of trade, food processing capacities were concentrated in Budapest; moreover, the urban network had been strongly differentiated by railway developments (Berend, Ránki, 1987; Komlosy, 2025). Nevertheless, new polarities did not condemn non-

metropolitan areas and smaller centres to remain solely as food producers and raw material suppliers. Small businesses serving local markets, innovative producers utilising local resources (from sugar and salami to matches and ceramics), and the development of urban infrastructure and public institutions (education, public health, culture) transformed communities and daily life, accelerating urbanisation across the country during this period. The number of urban residents increased from 2 million in 1870 to 3.7 million in 1910 (Beluszky, 1999).

2.2. Although, the major crises of the late 19th century impacted the national economy and enforced constant sectoral and local alignment, the first major blow came after the WW1. Due to the border changes and the post-war economic meltdown, the spatial division of labour between urban centres/their hinterland, and industrial centres/their suppliers were cut off or shrunk. The 1920-1941 period was the time of the constant crisis (agricultural over-production, inflation, the 1929-33 global crisis) and also of enhanced state agency in economic development (Berend, 1982). The major drivers on economic restructuring were import substitution (extractive industries, food, textile and leather industry, pharmaceuticals, machinery, chemical industry), militarization (1930s) and the growth of public services. As a result, the structure and market orientation of the industry changed substantially, yet the sector's performance was erratic and reached only 27.7% of GDP in 1936 (Hajdú, 1996). The structural shift supported spatial centralisation: more than 50% of the output of new industrial branches was produced in the Budapest agglomeration. Nevertheless, new industrial centres and regions also emerged in the north-west and north-east of Hungary. The population of towns (outside Budapest) grew by 430,000, driven mainly by rural-urban and cross-border migration. Population growth led to housing shortages, social crisis, and intra-urban polarisation.

2.3. The imprint of pre-1945 periods is still there in many local and firm histories. Nevertheless, the state socialist era entailed even more profound changes in the spatial organisation of the economy. State intervention and control, favouring investments to consumption, restructuring the economy in a top-down manner, and industrialisation at a massive scale in the context of a new (COMECON) spatial division of labour were ubiquitous processes throughout CEE. Pouring public resources into industrial development and prioritising large state-owned firms, as well as industrialisation as a driver of urbanisation (primarily through housing and infrastructure development), did not make Hungary unique either. Nevertheless, (i) tolerating a relatively large spectrum of organisations such as cooperatives, private enterprises and the various agents of the grey economy (Kornai, 1980) was not typical in CEE. This laid the foundations of the early introduction of the capitalist enterprise in Hungary in the 1980s. Cooperatives and municipally-owned firms had a substantial role in production, employment, providing services and mobilizing local resources in small towns, and their successors are still there in many places. Moreover, (ii) small towns were targeted by the decentralisation of productive capacities to exploit immobile labour assets, which gave rise to branch industry in often, by integrating small firms into state owned giants. Production was outsourced even to rural places (to subsidiaries of local cooperatives) exploiting cheap labour. Statistically, it reduced spatial inequalities in industrial employment and output, but also entailed hierarchical-dependent relations between major cities (primarily, Budapest) and the rest of the country. Such relations were reflected by the centralisation of decision-making, the concentration of innovation capacities, and also by unequal wages (Barta, 2002). The uneven power relations had a negative impact in the time of the transition crisis (early closures, layoffs). In many cases, however, branch industry was preserved in many small towns and some of them emerged as driver of economic recovery locally (Voszka, 1997; Molnár, 2018).

2.4. The post-socialist transition was a top-down process, which prioritized the reduction of state ownership by mass closures and privatization, and supporting FDI as the engine of industrial restructuring. Hungary was considered a textbook story of the FDI-led model in the 1990s: the FDI/GDP proportion reached 33% in 1997, that was far higher than in the most of EU core economies. Global embedding was

spectacular in the manufacturing sector, almost 70% of the output was produced by firms with foreign ownership by 2000. State ownership remained significant in small and medium-sized industrial firms, which were predominantly under domestic ownership, while newly established major corporations were dominated by FDI. The new spatial organisation was defined by external control (FDI), the continued dominance of Budapest and a small group of major towns (mostly with over 100,000 inhabitants) in decision-making (firm headquarters), and increasing West-East regional inequalities in production capacities (Barta, 2002). However, each firm had its own locally embedded story of transition, decline, collapse or recovery, which shaped local economic paths over the past three decades.

The 2000s was a period of regional embedding, the emergence of new, dependent relations in industrial production, driven by firm (owner)specific strategies. Nevertheless, while major infrastructure schemes (motorways, IT networks) supported the spread of productive capital, state policies (tax reduction, investment support) and a shift toward individual bargaining in capital-state relations indicated a change: a fiercer 'race to the bottom' (Bohle, 2009) within CEE for investments, and a stronger state agency in path change and place-making in the industry. The FDI shifted more toward services and industrial investments in already-existing sectors and firms grew dominant. This period was also about a geographical shift, new and recovering old industrial centres (including small towns) grew more important in production and employment in the eastern regions of Hungary (Kalotay, 2010; Barta et al, 2008).

The great financial crisis (GFC, 2009–2013) clearly revealed the structural weaknesses and risks arising from the dependent relations of the national economy in both the financial and productive sectors. Hungary reached its lowest point with a GDP decline of -8%, and the recovery was painful and slow (-2% in 2012), resulting in job losses and the largest welfare system cutbacks within the EU. The meltdown severely affected the new, globally embedded enclaves; nevertheless, they demonstrated greater resilience and recovered rapidly, while the southern and eastern regions, as major labour reservoirs (notably for long-distance commuting), continued to suffer from the negative backwash effect of the structural crisis until approximately 2017. The crisis prompted the introduction of new economic policies across Central and Eastern Europe, focusing on financial stability, more selective sectoral policies, a more pronounced state role in market relations, and greater embedding in global production networks (GPNs). In Hungary, the situation took a specific turn after 2010, resulting in an overly centralised institutional structure in public services, central state control over channelling FDI into the national economy, and over the geographies of production. In summary, (re)industrialisation is being used as a pillar of the current political regime.

3. The political economy of (state) capitalism in Hungary: changing agency shaping local economies

The CEE industrial periphery entered a new accumulation regime exhibiting the vulnerability and the lack of resilience stemming from the dominance of low value-added activities and dependent market relations of domestic firms within GPNs (Nölke, Vliegenhart, 2009). In Hungary, finance and manufacturing (almost 20% drop in industrial output in 2009) were the sectors hit to the largest extent by the crisis. The shock redrew social relations after the GFC, which we grasp in re-shuffled state–capital–labour nexus.

3.1. Post-crisis FDI influx was declining throughout CEE, yet Hungary suffered from the greatest decline of FDI stock/GDP ratio in the 2010s which was explained by strategic decisions of MNEs such as capital withdrawal by parent companies, by the new EU entrants absorbing FDI, and also by the deficits of statistics (Szanyi, 2022). As a response, a 'patriotic' national economic policy was introduced to achieve more domestic control over strategic sectors (energy, finance and construction and selected manufacturing sectors such as food), which was more about building a system rested on clientism than

upgrading, innovation and supporting domestic SMEs to get rid of low-value added equilibrium trap (Szalavecz, 2017; Szanyi, 2022). Therefore, a new selectivity has been introduced in state policies and the state-capital nexus: FDI-led industrial restructuring was supported with clearly defined sectoral preferences, predominantly in motorcar production and electronics. The mode of state intervention reinforced the selectivity of these policies, as non-transparent, individual bargaining between firms and the government over major investment schemes became dominant, alongside direct central state intervention through the allocation of public funds to selected projects and the assumption of direct regulatory control over investment locations.

3.2. The latter process was related intimately to rearranging the scalar division of state power, i.e. shrinking the municipal agency in economic development. Local leadership, relational capital and industrial culture had a substantial role in responding up until the early 2000s. After 2010, the power of communities was being undermined systematically. Here we stress four momentums: (i) public services were taken under direct central governmental control including institutions which are strategic for labour market processes such as education and health care. (ii) The scope of municipal finance (e.g. getting loans) was strictly controlled, along with expropriating municipal incomes by the government (personal income taxes, vehicle taxes, and partly, local corporate taxes). (iii) The regulative power of municipalities has been curtailed; in general, it was done by relaxing control over land use and in particular, eliminating community power completely over places of major development schemes in key industries, by identifying them as 'strategic' projects/spaces and bringing them under direct central governmental control (lifting regulations by the need of investors, and harvesting corporate taxes). (iv) Meanwhile, the political power of municipalities was undermined e.g. by reducing the number of municipal council members, and limiting their remuneration, and rearranging MP districts which left many small towns (their hinterland) without representation at national scale. Such steps left local communities particularly, small towns and rural places defenceless against external interests and actions, and supported the unfolding clientism at local scale (Nagy et al., 2021).

3.3. The new accumulation regime also relied on redefined labour relations. The subsequent revisions of the Labour Code (2012, 2018) increased employers' ability to organise production and working hours flexibly (giving them greater control over paid leave, allowing delayed payment for extra working hours, increasing net working hours, and reducing shift allowances and layoff pay, etc.), and to strictly limit labour union activity (Laki et al., 2013). The workers' position was further undermined by a shift in labour policy, as from 2017, the number of third-country employees rose exponentially, mainly at major firms with foreign ownership; in 2025, over 250,000 guest workers were registered in Hungary. Case studies from small towns with limited labour opportunities reflect the growing pressure on domestic employees to accept lower pay and worse working conditions.

In sum, the pandemics resulted in a massive economic crisis, which also presented an opportunity for power consolidation, as international control was relaxed, there was an influx of international aid (EU), and domestic resistance was limited by the ongoing (still sustained) state of emergency. Since then, the central government has regularly crossed legal boundaries in market relations, for example, by limiting the agency of capital (firms) through the designation of special economic zones subject to arbitrary regulatory changes, allowing state-owned companies and state-financed foundations to avoid public scrutiny, undermining municipal finance and property ownership and control, operating a non-transparent tax system, and implementing support schemes that distribute public resources selectively to firms, municipalities, and projects (Bohle et al., 2022). The state also redefined labour relations through changes to the Labour Code, reducing the number of public servants, and limiting collective rights. Meanwhile, the central government remained indifferent to the unfolding crisis in all areas of social reproduction, introducing cuts in childcare, elderly care, and public school capacities, reducing health care capacities, and pursuing an openly (middle) class-biased housing policy.

4. Current trends in industrial restructuring

Current macroeconomic data indicate a continuing recession since the end of the pandemic; the performance of the Hungarian economy has lagged behind the (almost zero) EU average. Gross value added (GVA) in manufacturing also showed a sluggish recovery: in 2024, the performance of the 'C' sector was only 102% of the 2015 GVA, while the EU average was approximately 110% (Figure 14).

Meanwhile, the central government kept pouring public funds in supporting major investment schemes and infrastructure development, including a state-owned industrial park network (Inpark) covering 19 towns since 2017 (https://inpark.hu/projects/) and exceptionality schemes, which rested on individual bargaining between the government and the investors. The public money invested in such schemes was over 1018 bn HUF between 2014-2023, of which 76% was spent between 2019-2023. In the period 2017-23, 70% of public support was supporting FDI projects (Állami Számvevőszék, 2025). The prime beneficiaries were TNCs (only one-fifth of project money landed in domestic firms), with a clear dominance of the automotive industry, and German and currently, overseas (primarily, Chinese and South Korean) companies (www.gov.hu). Major firms like Bosch, Audi, Continental, Mercedes, and Hankook received subsequent support packages. Such preferences reflected and also reinforced the spatial selectivity of development policy, yet it is not reflected in the resilience of the sector in the current recession. Up until the late 2010s, the focus was on job creation, settling giga-projects of productive capital to enhance domestic supply networks and reducing spatial inequalities by directing investments to the East. Indeed, industrial employment grew substantially: 776,000 new jobs were created, of which 115,000 were in the B+C+D+E sectors; nevertheless, industrial employment remained below the 2001 level. In addition, there was a clear eastward shift in industrial employment: 39 of the 71 towns with above-national-average dynamics are located in the eastern regions or outside the broader Budapest metropolitan area (Pest County).

Nevertheless, in terms of value added and productivity, the B+C+D+E sectors have not performed well recently. The share of industry in national value added peaked in 2016 at 26%, but has declined since then; in 2024, these sectors contributed only 20.9% to national output. Moreover, while state policies openly supported the integration of Hungary-based firms into GPNs, export performance is clearly shrinking: in 2023 and 2024, even the nominal value consistently declined (Fig. 14), and preliminary data suggest poor performance for 2025 as well.

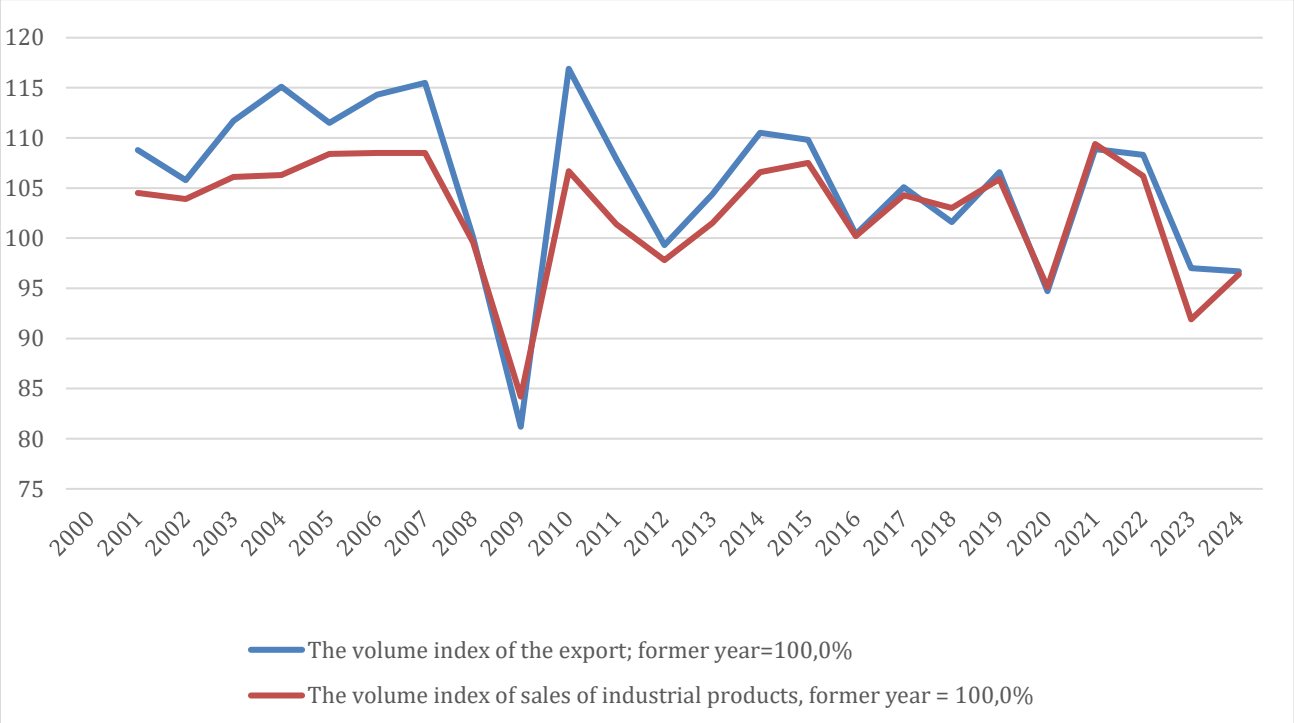
Sectoral restructuring is also a powerful process which is driven by ongoing rearrangement of GPNs, the introduction of trade barriers/the revival of protectionism, unfolding geopolitical crisis (militarization), the EU's clean industry priorities and also by government policies which target enhancing VA, productivity and preserving jobs in the sector. The current shifts entailed a substantial growth in motorcar production (25,7% of industrial output in 2024), in the production of electrical equipment (CJ sector) which doubled its share in 5 years over 10%, due to the arrival of e-car battery producers from South Korea and China. Metallurgy (7,2%), electronics (9,8%), and rubber/non-metal materials' production (8%) are holding their position, yet many firms in these sectors also entered motorcar GPNs recently. The food industry which is on a roller-coaster trajectory also exhibited the signs of recovery recently (Figure 15).

The economy is highly dependent on the performance of FDI-based firms. The manufacturing (C) sector is dominated by foreign productive capital, which operates only 3.8% of companies yet produces 71% of industrial output, a proportion that has changed only slightly since 2015 (73%). The share of FDI in sectoral output declined substantially in the energy sector due to government policies openly supporting domestic capital. The organisational structure remained strongly polarised in manufacturing and in the construction industry, with a high number of small firms struggling with a lack of capital and occupying a dependent

position in GPNs, versus major firms with FDI, high value added, and productivity. Nevertheless, the gap between the two groups in value added has been shrinking since 2021.

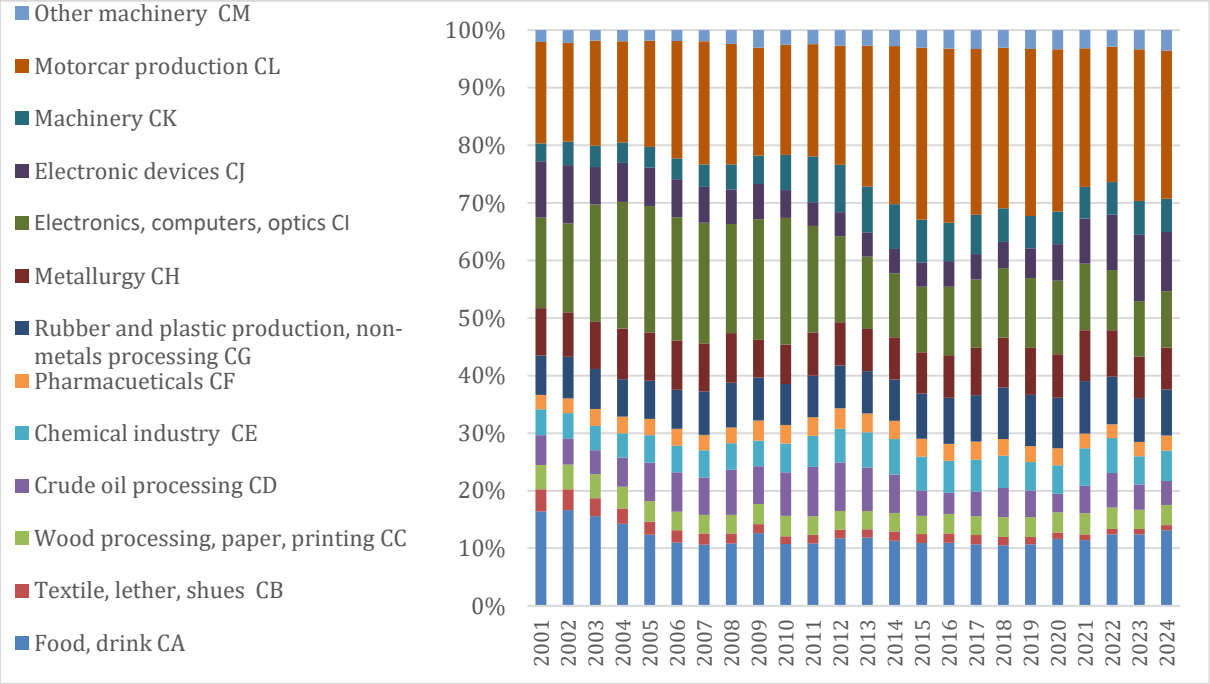
The above processes reflect the peripheral position and ongoing vulnerability of the industry. National policies seeking stability by supporting more sectorally focused and geographically diversified investments, and by channelling local resources (labour, water, etc.) into more spatially decentralised industrialisation processes, have not yet produced economic recovery. Instead, they induced a number of local environmental conflicts and significant social problems due to the human costs of economic restructuring (labour relations, housing crisis, increased commuting).

Figure 14: The change in the volume of industrial production (2000-2024), previous year = 100%.



Source: HCSO STADAT, 2025, https://statinfo.ksh.hu/Statinfo/QueryServlet?ha=ID403_W

Figure 15: Sectoral restructuring in manufacturing 2001-2024.



Source: HCSO STADAT, 2025; https://www.ksh.hu/stadat_files/ipa/hu/ipa0004.html

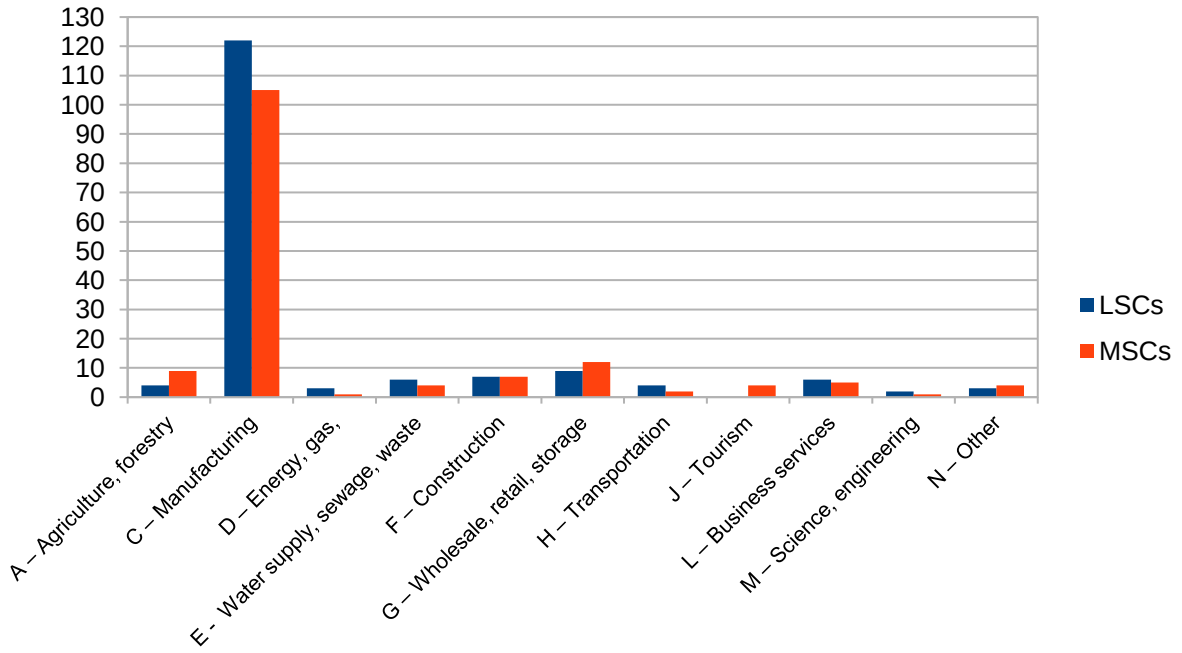
E) Hidden champion towns and firms in Hungary

5. Spatial distribution and general characteristics

The definition of hidden champion firms in Hungary includes 'large medium-size' (150 to 250 employees) and large firms (>250 employees) located in smaller towns (<30,000 inhabitants) that exports goods or services above the national firm average (the share of export of net sales revenue of medium and large firms was 40% in 2024) and has above-average added value per employee in the relevant economic sector (agriculture, manufacturing, mining, etc.). The data were provided by OPTEN Company Register (private company working in association with Registry Court of Hungary). As a first step, we excluded the urban centres with more than 30.000 inhabitants and smaller towns (43) located in the Budapest metropolitan area (Pest County, which is basically overlapping with the agglomeration zone of the capital city).

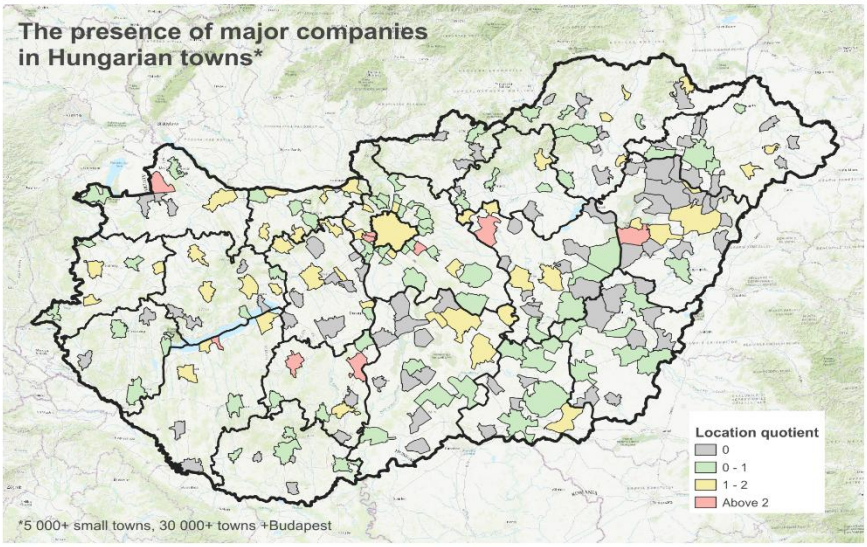
The final results show that there are 310 hidden champion firms (166 large, 144 medium-sized) distributed across 168 municipalities, each in smaller towns (<30,000 inhabitants) in the countryside. Manufacturing is the predominant economic sector, particularly, among large hidden champion firms, followed by mostly medium-sized firms in trade, transportation, science and engineering, and ICT sector. In the company register, there were no proper data about ownership structure, but in the case of hidden champion towns the vast majority of the firms included operate under foreign control (majority ownership) (Fig. 16).

Figure 16: Sectoral composition of large-scaled and medium-sized firms in Hungary



There is no clear pattern in the geographical distribution of HC firms in Hungary. Although, they are more frequent in larger municipalities, the location quotient indicates that they are disproportionally (highly) represented in the capital city's fringe, in second-tier towns (30-100 thousand residents) also close to Budapest, and in major cities (regional centres with more than 100.000 inhabitants), but in more suburban or semi-rural environments, even in peripheries. A certain part of the towns emerged under the socialist era as a consequence of "industrialisation of the countryside" from the late 1950s to early 1980s. Another important group could strengthen its economic position just after the transition period, as place of first generation of green field investments, or locations of a successful (mostly) industrial plant in the era of mass privatisation (after 1994). The third important period could redraw the spatial structure of Hungarian economy began after 2010, and based on a centrally-led investment policy attracting (mostly industrial) FDI into formerly lagging-behind areas. The highest values of location quotient belong to i) suburban small towns close to Budapest (3); ii) small towns with certain industrial basis (5). (Fig. 17).

Figure 17. Location quotients of HC firms in Hungarian towns.



6. Economic performance

We built a composite index of economic performance of municipalities of five indicators, each explaining a distinct economic dimension:

- Average monthly salary captures labour market outcomes,
- Investment per capita by municipality captures capital formation and investments,
- Share of high-growth companies of all firms captures economic dynamism and competitiveness,
- Company revenues per capita captures the economic output (profit/loss) of firms,
- Share of employees in medium-high and high-tech captures knowledge and technology intensiveness.

The indicators were standardised into z-scores, equally weighted averages were calculated, and three groups of economic performance were created based on standard deviation cut-offs (below average: index < −0.5; average: −0.5 to +0.5; above average: > +0.5). Figure 18 shows a link between above-average economic performance of towns and the presence of HC firms. There were 14 towns above the average, most located in the north-western and north-eastern parts of the country, largely overlapping with the former 'industrial axis' of the socialist period. However, a few of these towns had no substantial industrial capacity before 1990. Only four towns with HC firms performed below average, all located in the eastern periphery of Hungary. Their common feature was a weakly performing local economy dominated by a single sector or a major plant with routine activities.

This conclusion was also supported by the Kruskal-Wallis statistical test, which showed that all indicators differed significantly between the three groups (towns with large HC firms; towns with medium HC firms; towns with both large and medium HC firms; towns without HC firms). Individual z-scores of economic indicators in different types of towns show a strong link between better economic performance and the presence of HC firms; having more HC firms and a mix of large and medium-sized firms entail a better performance (Fig. 19). The most outstanding result was the z-score values of added value (AV) in different groups. It suggests, that the presence of large-scaled and medium-sized companies has no direct consequences on higher level of AV, which likely means that the majority of the existing large companies pursue low added value activities.

Figure 18: The presence of HC firms according to the economic performance of towns.

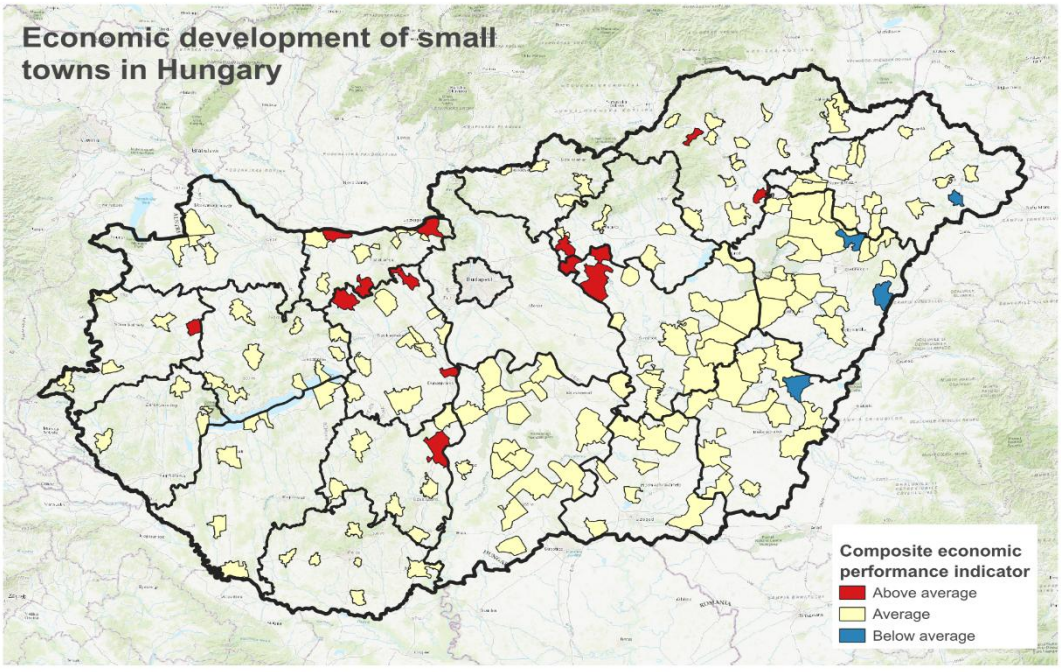


Figure 19: Average z-scores of economic indicators in four types of towns according to the size of HC firms and their origin of foundational capital.

Z-score values	**No MSC, or LSC**	**Only MSC**	**Only LSC**	**Both MSC and LSC**
Gross income/capita	-0.397225	-0.357045	0.192898	0.598286
Investments	-0.184422	-0.138695	-0.055781	0.346261
Export share	-0.354190	-0.094576	0.128384	0.404912
Added value	0.124822	-0.221657	0.173343	-0.169091
Revenue / empl.	-0.359687	-0.275256	0.296299	0.423469
High tech share	-0.416215	-0.326446	-0.047087	0.743185

7. Socioeconomic performance

We collected an additional 21 indicators reflecting basic social, environmental, and health dimensions in all municipalities. Z-scores reveal several new findings (Fig. 20). The most significant process identified in the analysis is that a more diverse local economy, with both large-scale companies (LSCs) and medium-sized companies (MSCs), performs at a higher level than all other categories. In general, towns with only LSCs perform better than centres with only MSCs; the poorest performance (as a group average) is observed in small towns without either of these company categories. The key factors indicating better performance in the group of 'the best' were: personal incomes, technology-intensive industries in the local economy, a higher proportion of industrial employment, the presence of foreign workforce in local economies, and being an in-commuting centre with a relatively smaller number of out-commuters. All these factors result in a significantly lower level of poverty in local societies, a higher average level of education, and higher living standards. In the case of small towns without LSCs and MSCs, low levels of industrialisation, an increasing share of ageing population, lower technological levels in local economies, a lower share of in-commuting and higher intensity of out-commuting, lower living standards, and particularly, the lack of wired internet connections, defined the group of low-performing local economies and unstable social processes. Nevertheless, there were two indicators by which towns with only LSCs performed the worst: they had the highest share of vacant homes and declining population dynamics, which was contradicted by the highest rate of newly built houses (after 1990) in these towns.

Figure 20: Z-scores of socioeconomic and health & environment indicators according to the presence of HC firms and their size.

Z-scores (avg)	**No MSC, or LSC**	**Only MSC**	**Only LSC**	**Both MSC and LSC**
PIT-basis per capita, 2023 (EUR)	-0.40	-0.36	0.19	0.60
Investments per capita, 2023 (EUR)	-0.18	-0.14	-0.06	0.35
Export share, 2023 (%)	-0.35	-0.09	0.13	0.40
Revenues per capita, 2023 (EUR)	-0.36	-0.28	0.30	0.42
Share of employees in high- and mid-tech companies	-0.42	-0.33	-0.05	0.74
Share of out-commuters in local labour force	0.54	0.07	-0.24	-0.55
Share of in-commuters in local employment	-0.44	-0.32	0.37	0.52

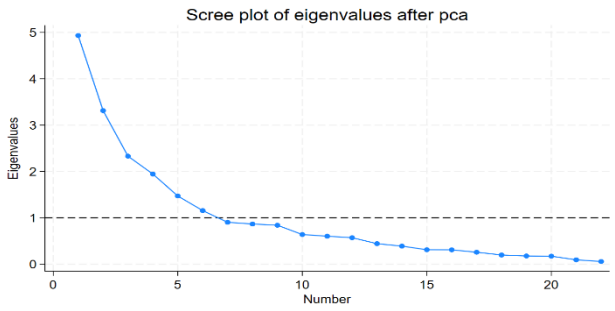
Share of foreign employees (2024)	-0.33	-0.27	0.10	0.51
Role of industry in employment	-0.62	-0.24	0.24	0.78
Share of low comfort dwellings %	0.39	0.15	-0.32	-0.40
Lack of sewer connection %	0.39	0.15	-0.31	-0.40
Lack of central heating %	0.21	0.31	-0.26	-0.35
Wired internet connection %	-0.45	-0.21	0.08	0.38
Dwellings built after 1990 %	-0.06	-0.06	0.22	-0.11
Share of vacant homes %	-0.26	-0.09	0.44	0.07
Population dynamics	0.20	-0.26	-0.85	-0.15
Ageing-Index-2022	-0.54	-0.05	0.32	0.26
Share of poverty in active working population	0.18	0.18	0.15	-0.44
Unemployment rate	0.18	0.12	-0.06	-0.26
Share of population with diploma (2022, %)	-0.30	-0.29	0.04	0.41
General crime cases	-0.23	-0.13	0.15	0.27
Sick leave days per employee	-0.05	-0.06	-0.29	0.07

8. Classification of towns with HC firms

The classification was done to reduce the number of indicators based on principal component analysis. First, we had "cleaned" the autocorrelated indicators to eliminate multicollinearity, and created nine synthetic components that explained over 80 % of all variance (Fig. 21); then, we ran a hierarchical k-means clustering analysis to derive five distinct types of towns. Fig. 22 shows those types.

Figure 21. Primary results of principal component analysis

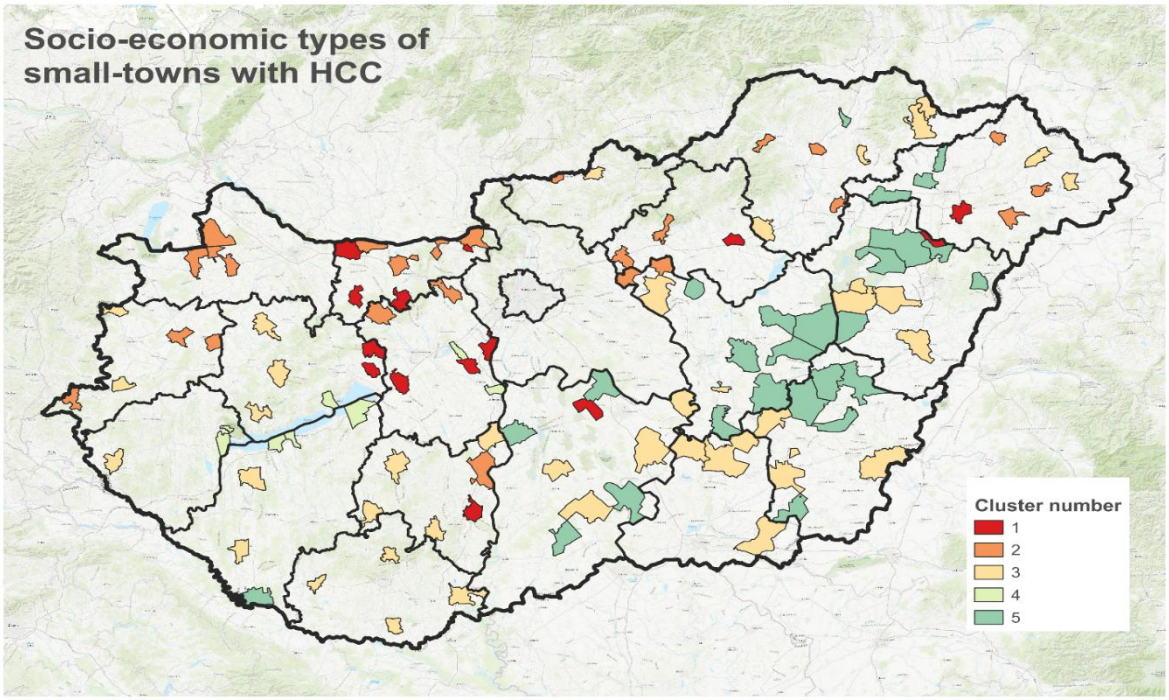
Component	**Eigenvalue**	**Difference**	**Proportion**	**Cumulative**
Comp1	4.932	1.619	0.224	0.224
Comp2	3.313	0.982	0.151	0.375
Comp3	2.331	0.386	0.106	0.481
Comp4	1.944	0.473	0.088	0.569
Comp5	1.472	0.315	0.067	0.636
Comp6	1.157	0.252	0.053	0.689
Comp7	0.905	0.037	0.041	0.730
Comp8	0.867	0.026	0.039	0.769
Comp9	0.841	0.201	0.038	0.807



The first cluster is labelled as "Small towns with safe living conditions, close to larger economic centres". These towns have relatively good economic indicators with a predominantly manufacturing profile, with a dominance of just medium-sized companies or a mix with a single LSC and smaller other actors in local economy. The housing conditions and ageing show a better picture than the average, likely, very much related to their location (being in the vicinity of the wider Budapest metropolitan zone, or in the suburbs of non-metro regional centres). Their economic centrality emerged mostly after the post-socialist transition due to vast greenfield investments in industrial activities. We labelled the next group as "Small towns with strong and successful local economy". The economic performance is far higher than the average, which is partly rooted in the state socialist past. Cca. a half of them were targeted by industrial decentralisation (form 1958), and these capacities were privatised and upgraded after adopting new business models; the 'other half' of the group emerged as locations of different waves of FDI influx just before and after the EU accession. The public and business service background is sound in these small

towns, and their geographical accessibility is above the average. These places are located mostly in the northwestern and northeastern regions of Hungary. The most problematic and more diverse type of our centres were "Small towns with no characteristic profile". This category is the largest by number and the most diverse. What makes this result disconcerting is the lack of specific features as all indicator values are around the average. It does include economically stable, dynamic small towns, which also exhibit diverging social processes in living conditions and incomes. This group remained intact throughout four different clusterisation process (from 4 to 7 clusters). We had much less problems to identify the next category which includes "small towns with a touristic or suburban character". This small group covers urban centres around Lake Balaton and Lake Velence, and Rácalmás, an emerging industrial centre with approx. 5.000 inhabitants in the neighbourhood of Dunaújváros (a former socialist 'town of steel'). The majority of this group has no significant industrial character, tourism and services dominate the local economies. The distinct social characteristics here is ageing, stemming from sub/de-urbanization of the elderly, entailing above-the-average living conditions, health services, and incomes. The fifth type covers "small towns with social problems and weak local economy". These places are located dominantly in the Southern and Eastern periphery of Hungary, emerged as 'market-towns' with (still) strong connections to agricultural and food-producing industrial past. The majority of the group has a major deficit in living conditions and safety; they face ageing, persisting poverty and low level of incomes, while the overall performance of the local economy is moderate or poor.

Figure 22: Types of hidden champion towns in Hungary according to the statistical analysis.



F) The local context: case study of HC towns in Hungary

The selected case study towns represent different development trajectories (Grillitsch, Asheim, Trippl, 2018). Each experienced industrialisation under state socialism; however, Ajka emerged as a socialist industrial town in the 1950s, building on its natural resources and pre-Second World War capacities, while Jászberény was targeted by decentralised industrialisation in the 1960s, resulting in a stable and relatively

independent position nationally by becoming an industrial headquarters. Nyírbátor received smaller-scale industrial investments, and its local economy remained in a strongly dependent position. After the transition, the towns followed different paths. Ajka underwent combined restructuring, relying on path renewal and path importation led by foreign direct investment, while contending with the polluted legacy of its industrial past. The town falls into category 1 by location quotient, the first quintile by economic performance, and group 3 in the cluster analysis. Jászberény experienced path upgrading, path branching, and path importation. Like Ajka, it falls into category 1 by location quotient, the first quintile by economic performance, and group 3 in the cluster analysis. However, it is located in a region dominated by several small industrial centres with complex relationships, relatively close to the Budapest metropolitan area; moreover, local capital played a substantial role in restructuring. Nyírbátor is the smallest centre, situated in a peripheral geographical location. It became an industrial hub after 2000, relying entirely on foreign direct investment and depending heavily on inward commuting. It falls into category 1 by location quotient, the first quintile by economic performance, and group 2 in the cluster analysis. It exhibits a path importation model; however, due to the dominance of external agents and dependence on external resources, we also identified it as a typical case of peripheral industrialisation.

9. Ajka

Ajka is located in County Veszprém, the Central Transdanubian region in Hungary (https://www.google.com/maps/place/Ajka/). The transportation links are strong to the East and the West on main road no. 8, and the Székesfehérvár-Szombathely main (electrified) railway line. The closest access to the motorway network is at Herend (20km). Its town status was chartered in 1959.

The history of local industry goes back to the 1930s when the local electric power plant, the alumina factory and the aluminium smelter were constructed (kick-off: 1937) as part of the militarization of the national economy (the 'Győr program' (Pirisi, Sókuti, 2013)). The 'aluminium city' status was developed further in the era of state socialism, relying on the lignite and bauxite extracted in the region. The processes were backed by the agreement with the USSR (1962) which entailed the outsourcing of the energy-consuming bauxite refinement to the Soviet Union, and the return of semi-processed alumina for further production. (As it has been revealed recently, the great business for the USSR was the extraction of high Titanium content for military ad space industry.) In the early 1980s, the heyday of Al industry, 2 M tons of lignite and 2,1 M tons of bauxite (both very poor quality) was produced annually. Ajka emerged as a model-town of socialist industrialization, entailing large scale infrastructure developments, yet also a massive air and ground water pollution which survived the post-socialist transition and ended up as an environmental disaster in 2010 (the 'red mud' flood: https://rtl.hu/video/2023/10/04/ezen-a-napon-vorosiszap-katasztrofa-devecser-ajka-kolontar). Due to rising costs, lignite and bauxite mines were closed and the aluminium industry entered a deep crisis in the early 1990s. The glass industry, an innovative branch of local industry relying on low-cost (coal-based) energy which produced high quality goods ('Ajka Crsytal', https://ajka-crystal.com/pages/menu-the-legend-of-ajka-crystal) was also impacted and faced a slow agony from the 2000s. These industries employed 60% of local over-18 population before the transition, therefore, the town faced a deep social crisis after the transition.

As an industrial model town, Ajka was growing rapidly in terms of population (at the peak in the early 1980s, the number of residents was over 30.000 for a short period time), and also of urban infrastructure. In 1971, in the new public administrative system, Ajka was defined as a regional para-centre functionally

and a district[1] centre in the urban hierarchy which entailed major investments in the road network, a local housing estate, and institutional services such as a local hospital, and secondary education. The town held its central position even in the time of the transition crisis, and became the engine of the municipal association 'New Atlantis'. This organisation invested community resources in an industrial park (in Ajka) which grew as the core of re-industrialization from the 2000s on.

Currently, the number of residents is slightly over 26.000 and resulted by the population decline which accelerated btw. 2001-2023 (-17%). Industrial employment among locals is far over the national average (38,5% in 2022). Local industrial firms employed over 5.000 people in 2022, maintaining a substantial inward commuting (45% of employed in the local industry). Nevertheless, recently, the role of the sector in the labour market has been declining (-21,5% btw. 2011-2022). Unfortunately, this process has not been going along with a qualitative shift: the share of residents with diploma (12,9%) is below the small-town average, and so is the dynamics of highly qualified labour. Nevertheless, Ajka reflects the overall correlation of household incomes and the level of industrialization. Personal incomes grew by 113% btw. 2012-2023 I average (=1089 euro/person in 2023) thus, it's holding the 39th position among the 168 towns of 5-30 thousand residents.

Ajka is also a centre of public services. In 2024, 1500 students were commuting to local (dominantly, secondary) schools. The key agents in education are:

- Bródy Imre Grammar School with specialization to English language, Geography, and IT;
- Ajka Vocational Training Centre specialized to architecture, construction, wood industry, tourism, machinery, IT, retail, and business management;
- Szent-Györgyi Albert Vocational Training School focusing on nurse and social worker training, tourism, and public administration.
- Local institutions provide specialist medical care services. Ajka also has a local hospital with regional functions, a town library, a cultural centre, a local spa (https://kristalyfurdoajka.hu/), and museum dedicated to local industrial history.

Local 'hidden champion' firms in Ajka

One of the dominant agents on the local labour market is the *Le Bélier Magyarország Formaöntöde Inc.* which represents the continuity in metallurgy, operating an aluminium foundry (https://lebelier.com). The firm is in domestic ownership, it's a founding member of the Association of Hungarian Foundries. The primary products of the company are aluminium brake systems. In 2024, they produced 156 M euro net sales revenues. Currently, they employ 791 people, yet this number has been declining constantly for years due to the persisting crisis of the motorcar industry. Nevertheless, they also operate local plants in Mohács and Veszprém.

The only enterprise in the NACE 'high tech' category in the *Bourns Ltd*. It is owned by a Silicon Valley firm (Bourns Inc., Altadena, CA) which is a global lead firm in motorcar electronics. Ajka is a production site for sensors (*https://bourns.hu*). They have an R&D lab in Veszprém (30km). The net sales revenues sum up over 50 M euro (2024). In 2025, they employed 638 people, and the pattern shows upward dynamics. Their products go for export in 100%.

[1] District ("járás") = an administrative unit below the NUTS(county) and above the municipal level.

The *Poppe+Potthof Hungary Ltd*. is owned by a German family business. They produce motorcar parts, for the global (dominantly, European) market. The net sales revenues (87,4 M Euro in 2024) and the employment (534 persons in 2025) are growing dynamically. By NACE classification, it is a mid-tech company, yet the productivity (net sales revenue/employee) is the second highest after Le Bélier.

The *Ajkai Elektronika Zrt*. (www.ajkaelektron.hu) is also a motorcar industry supplier. Since 1962, they have been partners for OEMs as metal plate parts producers. Currently, they are a Tier 1 supplier of the Suzuki Hungary. Their net sales revenues summed up to 15,7 M euro in 2024, and employed 215 people in 2025. Both data show a downward dynamic due to the persisting crisis in the car industry and their strong dependence on the domestic market (75%).

The *AE Plasztik Zrt*. (www.aeplasztik.hu) is a successor of 'Videoton', the giant in electronics under state socialism; the local plant produced radio sets for military purpose. The factory was privatized and merged in the 'Műszertechnika Group' (1992) owned by Gábor Széles, the former (the last) chief executive of Videoton. Since 2008, it's an independent firm yet still belongs to the 'Műszertechnika Holding' therefore, it's in domestic ownership. They produce plastic motorcar parts dominantly, for the domestic market (86%). The sales revenues have been stagnating in the last 3 years (14,5 M euro in 2024); the number of employees was slight growing (248 persons in 2025).

The *Schwa-Medico Ltd*. (https://schwa-medico.hu) was co-founded by a German and a Hungarian business people (2008), specialized to the production of electric engines and power generators. The net sales revenues (4,5, M euro in 2024) and the employment (144 persons in 2025) has been declining recently. The firm responded to the decline by the strategic restructuring of the activities, i.e. investing in the production of medical electronic devices and smart sports suits, and also into reorganising logistics and the maintenance services.

The local power plant is also operating, relying entirely on a biomass source. It is owned and operated by *Veolia*, a global leader in renewable energy and the circular economy (water and waste management). Veolia employs 2,500 people in Hungary across energy, water, sewage and waste management, and engineering consultancy. The Ajka plant is one of 12 facilities run by Veolia in Hungary.

10. Jászberény

Jászberény is a small town of 25.844 residents (2025) in an 80 km distance from Budapest, which is close enough to be targeted by investors seeking for space and free labour beyond the capital city. Being a regional transportation hub (of the main roads no. 31 and 32, railway connection to the S/N, with good access to M3 motorway) settled Jászberény's position as one of the economic centres of the Hatvan-Gyöngyös-Jászság industrial region in the 2000s. The town is a rank 3 (district) administrative centre, and historically, the 'capital' of the 'Jászság' region which is a powerful source of identity for local people. Beyond its massive regional labour market functions, Jászberény is a centre for institutional services including a local hospital and a full spectrum of specialized health services, three grammar schools and two vocational training centres, a university faculty of education (the predecessor established in 1917 as a local teachers' training college), and institutions of specialized social services and culture (a public library, an art gallery, a school of arts, 'Jász' Museum of ethnography est. in 1842.).

The population dynamics followed the national pattern of overall decline; however, the 10% decrease in the number of residents was below the national average. Moreover, the slowdown in decline during the 2010s (-2%) reflected an improvement, which we attribute to the stability of the local labour market. The overall educational skills of the residents have been well above the small towns' average since the 1980s. In 2022, 19% of locals held a diploma; nevertheless, the rate of improvement lagged behind the national average in the 2010s, reflecting a quantitative rather than a qualitative change in the local job market.

The modern history of Jászberény was defined by its market town functions i.e. trade and craft industry, and the resulting growth of local institutional services up until the second world war. The industrialization process was launched by the top-down decentralization of productive capacities under state socialism. One of the key local actors was the 'Lehel' refrigerator company (a SOE) which rested on local metal processing capacities combined with the production capacities moved here from Budapest. The first 'Lehel' branded friger was manufactured in 1960. In the 1970s, new Lehel models relying on a Bosch licence were produced for the whole COMECON market. In the 1980s, the company employed over 3.000 people on 8 sites. The first CEO of Lehel, Ignac Gorjanc is considered as an iconic agent of local history; he was successful in lobbying for development resources not only for the factory but also for the whole town. The 'Lehel' factory was deeply interwoven with the everyday life of locals from supporting local cultural institutions and sports events to supporting local infrastructure. The firm was privatized and bought up by the Swedish Electrolux in 1991, which produced refrigerators under the label of Zanussi and Electrolux only from 1999. The owner introduced a new cost-reduction strategy which entailed a step-by-step reduction of production capacities in Jászberény, ending up as a planned closure of the factory in this year (2026).

The other actor of pre-transition local prosperity was the 'Aprítógépgyár' (Shredding machine factory) established in 1952, as a local plant of the legendary Ganz Co. (expropriated by the communist regime in 1949) to support the construction industry in the post-war recovery. The firm was consolidated in the 1960s as an independent SOE, by adapting a working business model and a new technology from Austria, which laid the foundations of growth and an enhanced export activity of construction machine parts to the East and also to the West. In the heyday, the late 1980s, they had 1200 employees, run several plants in the region (including the nearby small town, Hatvan), and supplied Hanomag, Eder, Poclain, Caterpillar, SMS, Mannesmann Demag, Orenstein und Koppel, and Zettelmayer. 75% of annual revenues was derived from export. The company was privatized in 1991; 36% of shares was bought up by employees and 15% by the management. The latter group got a majority control and sold the firm to the Finnish RUUKKI Group in 2007.

I sum, due to the smooth privatization process, and the early entry of Swedish and Finnish investors, the transition did not entail a major economic shock locally; it was reflected by the constantly high (far over the national average) proportion of industrial workers in the post-1990 era. Today, 35% of active residents are employed in manufacturing, and the town emerged as a labour market centre for almost 10 thousand in-commuters (2022) of whom, 58% worked for manufacturing and construction firms.

Out of the 9 major local employers (250+) 5 are settled in manufacturing (electronics, machinery), running over 6000 jobs in 2023. By employment, value added, export revenues and technology (NACE/high and mid-tech), the key agents of local industry are: *Jász-Plasztik Ltd., Electrolux-Lehel Ltd., Steel Construction Partners Co., Dometic Co., Rosenberger Automotive Cabling Ltd*.

The dynamics and robustness of the local economy is reflected by local corporate tax revenues (4,11 Mrd HUF), which is the 39th position in the urban hierarchy; the per-capita tax revenues exceeded the national average substantially (159.000 HUF/resident and 131.000 HUF/resident). The town's stable position

reflects the scale and also the resilience of the local economy rooted very much in its diversity. Local incomes also reflect this rank, an 'average' resident earned 85% of the national average of personal incomes, calculated without Budapest (2023). Although, the dynamics of personal incomes was weaker in Jászberény in the 2010s, the number of taxpayers increased by 21%. Nevertheless, the data do not reflect the impact of the planned closure of the Electrolux plant.

Hidden champion firms in Jászberény

The *Jász Plasztik Ltd*. was founded in 1994. It's a supplier of major motorcar producers; they identified their primary activity as battery production. Nevertheless, they are also involved in packaging, production of paint, plaster, insulation material, and plastic motorcar parts. They employed 2780 people in 2023, their net sales revenue was 112,66 Mrd HUF of which 44% was derived from export. It's in domestic ownership; by NACE, it's a mid-tech firm. The headquarter is in Jászberény, yet they have plants in Nyíregyháza and the nearby Jászapáti.

The history of *Electrolux-Lehel Ltd*. goes back to the privatization of the local refrigerator factory in 1991. Their main profile is the production of household electronic dives, i.e. refrigerators and ovens. In 2021, the parent company also set up a CEE regional logistic hub in Jászberény. Currently, they employ more than 600 people. The firm's net sales revenue was 270 M euro in 2023 of which, 74% was derived from export. The owner is the Electrolux Group, Sweden. Although, their subsidiary in Jászberény falls in the mid-tech NACE category, the parent company's bonds are traded on the Stockholm Nasdaq. The Electrolux-Lehel Ltd. is a founding member of the 'Industry 4.0' platform.

The legal predecessor of *Steel Construction Partners Co*. was founded in 1992, yet the history of the firm goes back to the state socialist era, it was the above-discussed 'Aprítógépgyár' which produced parts for industrial equipment. The takeover by the Finnish RUUKKI Group in 2007 and 5 years later, by the FORTACO Group (Finland) integrated the firm in global production networks of the industrial machinery sector. Currently, they produce machines for mining and construction. In 2023, they employed 273 people, their net sales revenues was 21,6M euro of which ,96% was derived from export. By NACE classification, it is a mid-tech manufacturing company.

The *Dometic Co*. was founded in 2001 by a Swedish parent company. They are specialized to the production of household electronics, i.e. equipment customized for hotels, cruise ships and yachts, offices, and caravans. In 2023, their net sales revenues was 59M euro (95% from export), and they employed 282 people. By NACE classification, it is a mid-tech manufacturing company.

The *Rosenberger Automotive Cabling Ltd*. is an innovative actor in the local industry, it is a high-tech firm by NACE classification. It was founded in 1998 by a German high-tech firm which is a global actor with production capacities and sales on 4 continents. The Jászberény subsidiary produces electronic parts for the automotive industry. It is expanding, just completed a new 12.000m2 production site in the town. They employed 280 people locally in 2024. Their net sales revenues were 117,3M euro in 2023, 98% derived from export. They have production sites outside Jászberény, in Jászárokszállás, Nyírbátor, and Taksony.

11. Nyírbátor

Nyírbátor is a town of 11.137 residents (2025) which emerged as a regional centre of industrial production and employment very recently. This major turn was supported by the town's position in the hierarchy of public administration (3rd rank, district centre) which entailed institutional diversity, as well as by the location, i.e. access to M3 motorway (10km), main road and railway link to Debrecen (the nearest regional

centre, 55 km) and Mátészalka (a dynamic industrial sub-centre, 20 km), and a being well-connected to western Romania (20 km).

Local history goes back to the late Medieval Ages and the early modern period; Nyírbátor grew as the centre of the estate of powerful noble families (Báthori, Rákóczi, Károlyi) and emerged as a market town. The place held a town status up until the 1872 administrative reform, which they could regain as late as in 1973. Local history and related built (late Gothic) heritage, along with the local spa and a nearby pilgrimage place (Máriapócs) is a powerful source of local identity and an asset for tourism industry today (https://nyirbator.hu/latnivalok-nevezetessegek).

Recently, Nyírbátor is functioning as a regional sub-centre in NE Hungary by economic potential, labour market dynamics and also pooling institutional services. The latter covers the full spectrum of specialized health care services, a cultural centre running as the focus of community life, and also surprisingly broad range of education facilities, including local school and services for children with special needs, a bilingual primary school, a vocational training centre and an integrated school (for age 6-18) focused on humanities (Leonardo Media Academy).

The post-1945 trajectory of the town as a small market centre had been changed substantially by the policy of decentralized industrialization in the 1960s, by settling vegetable oil industry, shoe production, and machinery (production of drilling machines) plants. The latter was a subsidiary of the legendary flagship SOE, 'Csepel Művek', headquartered in Budapest (formerly owned by Manfred Weiss, nationalized in 1948), and operating as the largest vertically integrated trust in the 1960s with a number of outlets in small towns across Hungary. As a result, Nyírbátor emerged as a minor industrial centre; in 1990, there were 3500 industrial jobs settled here, and 47% of economically active residents were employed in manufacturing.

The second major turn in local economic history unfolded after the transition, due to the closure of former SOE plants (1990s), and from the early 2000s, by the arrival of various global agents of productive capital which resulted in a new, 'imported' development path (https://legyelnyirbatori.hu/munkahelyek). The process was speeded up by the establishment of the local industrial park (2004) by the municipality. This shift entailed a substantial growth of industrial jobs; in 2022, 6500 people were employed by local manufacturing and construction firms (53% of all local jobs), of whom, more than 5000 were in-commuters. Currently, Nyírbátor is the 3rd largest labour market centre among small towns in Hungary by the number commuters. Rapid industrialization is also reflected by local corporate tax incomes: in 2023, it was 3bn HUF and, the per capita value was twice as much as the national average.

Nevertheless, economic restructuring did not entail a substantial shift in local social processes. Since 2001, Nyírbátor has lost 17% of its population, and the change was speeding up in the last decade, which is worse than the national and the small-town average. Industrialization did result a major qualitative shift in education skills either; the proportion of residents with diploma is 14,8% which is around the small-town average, even tough, the dynamics of growth after 2001 looked promising.

Local incomes do not reflect a substantial turn in the well-being of locals; personal incomes liable to taxation are around the 77% of the national average calculated without Budapest. This is not in line with the dynamics of employment and local industrial output which reflects the peripheral character (low-cost labour and resources-focused) of industrialization.

Nyírbátor: Hidden champions

The *Unilever Hungary Ltd.* represents the (only) continuity with the state socialist past, as it runs the local vegetable oil plant privatized in 1991. Nevertheless, the company is headquartered in Budapest, having productive capacities only here outside the capital city. The Unilever (all together) had 1111 employees in Hungary in 2024, the net sales revenue reached 355M euro of which, 32,5% was derived from export. The firm is in British ownership, they produce cleaning detergents in Nyírbátor. By NACE classification, they run a medium-tech activity.

The *Coloplast Hungary Ltd.* was established in Tatabánya (2001) in the first wave of CEE peripheral industrialization and expanded further to the East (only in Nyírbátor) in 2009. In 2024, they employed 4546 people altogether (cca. 2500 in Nyírbátor), produced 612M euro net sales revenues derived almost completely form export. They produce devices made of plastic for health care. By NACE classification, it is medium-tech company.

The *Rosenberger Magyarország Ltd*. Is a further example of eastward expansion of FDI within Hungary. As an electronic motorcar parts' producer, it is classified as a high-tech firm. It is in German ownership, and headquartered is in Jászárokszállás (East Hungary) where they also run substantial production capacities. In 2024, the firm employed 3189 people (1200 in Nyírbátor), they had 105M euro net sales revenues of which, 98% was from export sales. They have been running the plant in Nyírbátor since 2017.

The *Diehl Aviation Hungary Ltd*. was founded in 2011, headquartered in Nyírbátor since beginning. It's in German ownership, specialized to civil aircraft and spacecraft production, and classified a high-tech firm by NACE. They settled the productive capacities in Nyírbátor, while running an engineering lab in Debrecen. They had 1134 employees in 2024, their net sales revenues were 207M euro, derived almost completely from export.

The *MSK Hungary Ltd*. was established in 1993; up until today, it is headquartered in Nyírbátor. It is in German ownership, and produce specialized vehicles for industrial purpose. By NACE, it is a mid-tech firm. They employed 338 people and got 38M euro net sales revenues (86% form export) in 2024.

The *Farmol Hungary Ltd*. is a local firm, established in 2010 by Italian investors. They are in the cosmetics business (producing body lotions), and identified as a mid-tech firm by NACE. In 2024, they employed 316 persons and had 35,5M euro net sales revenues (99% from export). They were on the edge of closure in 2025, yet still keep running.

The *Serioplast Hungary Ltd*. was established 2008 by Italian investors, headquartered in Nyírbátor. They are specialised to packaging industry, exporting their products in 100% to Europe. They employed 229 people and produced 47M euro net sales revenues in 2024. By NACE classification, it is a low-tech firm.

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G) Conclusion

As mentioned in the introduction, this analysis first examined the macroeconomic conditions in Slovenia and Hungary that led to the development of hidden champion firms and towns. This macro-scale analysis shows that in both countries export-orientated manufacturing has been a powerful driver of global economic embedding and employment growth, which is probably true for most CEE countries. Despite belonging to the former socialist bloc, the two countries had different transition and political economy models. Slovenia took a more gradual approach to transition, favouring domestic capital and slower privatization. In Hungary, an early Neoliberal turn entailed a rapid privatization and a more deliberate expansion of foreign direct investments (FDIs), the main engines of post-socialist restructuring. In both countries, the state agency is strong: In Slovenia, it acts as a regulator and owns companies (the neo-corporate model), while in Hungary, the central state took control on negotiating FDI and distributing public assets (an authoritarian capitalist model, Bohle et al, 2022). Regarding local agencies, there are discrepancies: In Slovenia, municipalities seem to play a greater role in directing development, mainly by developing business zones and infrastructure. In Hungary, however, municipal power has been hollowed out since 2010, making communities strongly dependent on the bargaining of external agents. Slovenia also retains an important role of the Unions through collective pay negotiations and social dialogue, while in Hungary the power of economic actors is greater and labour rights have been undermined step by step since 2006 (Czirfusz et al, 2019). Global economic shocks in 2008 and 2020 revealed both countries' dependency on exports and global supply chains, making them vulnerable to external factors. Small towns and more peripheral areas seem to play a significant role in hosting hidden champion firms. This stems from historical industrialization paths and the role of the socialist state. In Slovenia, this occurred through the intentional industrialization of rural areas via polycentric development policies since the 1970s. In Hungary, decentralised industrialization occurred in the manufacturing sector targeting smaller towns, mostly by establishing subsidiaries of large state-owned companies in these areas in the 1960s and early 1970s. Nevertheless, unfolding labour shortage stimulated a second wave of ‘industrialization of the rural countryside’ from the mid-2010s, oddly, orchestrated by the central state again.

In both countries, we used similar criteria to identify hidden champion firms and towns. We consider towns with less than 30,000 inhabitants that host firms that are medium-sized or large, have above-average export orientation, and have high sectoral added value per employee. Due to data limitation, there are some discrepancies in criteria between both countries: In Slovenia, we considered firms that have 50+ employees, while in Hungary this threshold was higher at 150+ employees. We identified 302 hidden champion firms in Slovenia and 310 in Hungary, which are located in 83 hidden champion towns in Slovenia and 168 in Hungary. In both countries, manufacturing is the main sectoral orientation, with some differences in origin of capital: predominantly domestic in Slovenia, while Hungary has more foreign-owned firms, which is in-line with a more FDI-orientated post-socialist transition in Hungary. In both countries the geography of hidden champion towns is complex, yet it exhibits non-metropolitan, more peripheral patterns. Location quotients show that secondary, peripheral and suburbanised locations are predominant or that older centre-periphery relations are being reproduced. In both countries the socialist legacy of industrial development is still reflected in present-day spatial structures (East-West divide in Slovenia, NW-SE divide in Hungary).

The presence of Hidden Champion firms is associated with better economic performance of towns in both countries. Towns that have more of such firms and a mix of medium- and large-sized firms exhibit better economic performance ¬ in fact, only one town in Slovenia and four in Hungary exhibit below-average economic indicators. Similar observations can be made regarding socio-economic, health & environment indicators: hidden champion towns have larger populations, a higher incoming commuter index, more industrial employment, better educational attainment, and better housing conditions. In both

cases, however, it becomes clear that economic success comes with health and social risks since they are associated with more workplace injuries and slightly more crime. In both Slovenia and Hungary, the diversity of hidden champion firms appears to matter for their economic performance and other social, health & environment indicators. A more varied firm structure, combining medium-sized and large firms as well as domestic and foreign founding capital, is associated with better indicators. While this relationship is more consistently positive in Slovenia, the Hungarian case shows that more uniform firm structures, especially those dominated by only a few very large firms, may be linked to weaker outcomes and more vulnerable communities if we look at time series of the indicators.

The Slovene and Hungarian classification of HC towns follows the same method (principal component analysis). In both countries, the classification shows that hidden champion towns are not a homogeneous category. There are various types: older industrial towns, new suburbanized economic centres, vulnerable post-industrial towns, and successful local industrial hubs. The types in the Slovenian typology are strongly linked with historical development paths: socialist industrialization, post-industrial vulnerability, and new suburbanized business areas. The Hungarian typology draws sharper distinctions between towns that are integrated into new investment flows and those that remain on the socio-economic (and political) periphery; here we identified the old path both as a source of recovery and also of constant social and economic decline.

In both countries, hidden champion firms are significantly associated with the economic performance of smaller towns, but the mechanisms behind this success differ. In Slovenia, success could be more closely linked to locally embedded firms, industrial continuity (“older” socialist firms transforming into new successful ones), a polycentric spatial legacy, and local institutional agency. In Hungary, success could be linked more to large firms, foreign ownership, waves of FDI, and state agency. Consequently, Slovenian hidden champion towns more closely reflect the logic of locally embedded economic development, while Hungarian ones reflect the logic of a more externally driven, and spatially uneven industrialization. At first sight, this is consistent with earlier studies focused on macro-scale transition trajectories in CEE (Bohle, Greskovits, 2007); nevertheless, the diversity of local paths suggests that we need a deeper insight to find out how local agency, regional assets, and power relations driving change along external interests are connected and raise conflicts in small towns.

Finally, based on statistical analysis and our analytical concept, we have selected six case study towns in both countries. Our goal is to present contrasting examples of the connection between development and hidden champion firms. We wish to show how industrial continuity is enabling them (Ajdovščina and Ajka), how new development paths can be created by such firms (Kočevje, Nyírbátor) and how local institutions and policies can guide new development through hidden champion firms (Komenda, Jászberény). The case study towns can therefore potentially show the emergence of hidden champion towns through different combinations of industrial histories, local agency, state interventions, foreign investments and community actions. This allows us to move beyond a simple "economic success narrative" and show how strong economic performance can coexist with dependence on large employers, environmental problems, and labour-market pressures. However, thus far, we have only been able to identify associations, rather than causality. This will be the focus of the next research step.

We will conduct semi-structured interviews with key agents (local, regional, and national and international; economic, community, and institutional) in these places. We will examine the strategies and actions of the agents to understand how they overcome their peripheral location and small size and the causal relationship between hidden champion firms and local development outcomes. We will examine firm agency, i.e. what local assets they mobilize, how firms cooperate globally to compensate for their limited labour pool and attract innovators, how they obtain supra-national support. We also scrutinize the role of external agents with substantial power, such as national officials, investors,

mediators, service providers, and academic institutions shaping firm agency and the life of local people. To capture the voice of the local community as a whole, we will administer a structured questionnaire to learn (i) how people in the communities are impacted by the entry and operation of large firms in terms of their income, consumption, environment, social relations, and mobility moreover, (ii) how major firms impact the making of subjectivities and community, conditioning further development path (e.g., company loyalty, cultural values, identity, and tacit knowledge), (iii) what is identified as a problem by locals and what sources of discontent emerged in relation to economic change (e.g., environmental, social, employment, and political issues); (iv) how local power dynamics changed and (v) what injustices are perceived and how those are remedied.