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From Rust to High-Tech Hubs: FDI-Led Upgrading of Urban Economies in East Central Europe

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Abstract

In the semi-peripheral-dependent market economies (DME) of East Central Europe (ECE), foreign investors are major contributors to economic growth and tend to establish low value-added operations. At the same time, they enjoy superior bargaining power over central governments. The domination of FDI constrains domestic agency in shaping economic outcomes, thereby locking DMEs into the semi-periphery. Moving to the sub-national level, this paper challenges these views by arguing that there is considerably more scope for local development agency in DMEs than the comparative political economy literature suggests. Moreover, FDI-led upgrading, defined as multinational companies engaging in high value-added activities, can take place at the local level even without the direct involvement of the state. The paper draws on fieldwork conducted in two formerly declining industrial cities in ECE (Cluj and Gdańsk) that have recently emerged as knowledge-intensive hubs targeted by high value-added FDI. The paper shows that FDI-led upgrading in Gdańsk occurred with the active contribution and cooperation of both local private and public economic actors, whereas in Cluj, upgrading took place with the contribution of local universities and through the forging of business links between foreign capital and local firms established by expatriates and local engineers.

Keywords Dependent market economy · ECE · Economic revival · FDI-led upgrading · Semi-periphery · Urban development

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Introduction

How to achieve economic upgrading in semi-peripheral and peripheral areas is a recurring question in the social sciences. While peripheries tend to face severe disadvantages in every aspect of their economies, semi-peripheral places have a mix of both favourable and unfavourable legacies and endowments and thus bear the potential to move onto a high road of growth (Avlijaš and Gartzou-Katsouyanni 2024). At the same time, they are also vulnerable to becoming permanently stuck in a semi-peripheral position. Given these double-edged structural conditions, whether upgrading takes place in a semi-peripheral setting depends largely on local developmental agency.

This paper examines local economic upgrading in the dependent market economies (DME) of East Central Europe (ECE), which are semi-peripheral in nature. The varieties of capitalism (VoC) stream in comparative political economy argues that local developmental agency in DMEs is severely constrained by structural characteristics, in particular by the excessive exposure of these countries to foreign direct investment (FDI), which is the main driver of their economic growth (Nölke and Vliegenthart 2009). Foreign investors dominate these economies, potentially limiting the ability of local actors to take autonomous development action. At best domestic agency serves the interests of foreign capital (Drahokoupil 2008; Šćepanović and Bohle 2018). Furthermore, it is argued that FDI inflows tend to reinforce the structural characteristics of DMEs, especially their functional specialization in low value-added activities (Stöllinger 2021), which contributes to their semi-peripheral position in the global economy (Galgóczi and Drahokoupil 2017; Szent-Iványi 2017).

While research focusing on the state-level economic consequences of FDI in DMEs is abundant, surprisingly little empirical work has been devoted to exploring how multinational companies influence local development trajectories in DMEs. The existing literature that has found a positive relationship between local economic upgrading and FDI in ECE relies on old data (Altomonte and Resmini 2002; Smith and Ferenčíková 1998) with few notable exceptions (Fekete and Rechnitzer 2019). A large-N study has found some empirical evidence of successful FDI-based restructuring in ECE (Chapman and Meliciani 2018) but a substantive, in-depth, qualitative exploration of the underlying mechanisms of upgrading through FDI is still lacking.

The above gap in the literature requires a theoretical and empirical reassessment of subnational development in DMEs. The study of successful cases of local economic upgrading can inform both comparative and international political economy scholarship about how these trajectories are possible with the joint contribution of foreign capital and domestic actors in an environment that is unlikely to be conducive to upgrading. Excessive reliance on low value-added foreign investment, the consequent narrowing of domestic policy space for developmental action, and the threat that upgrading may undermine traditional sources of semi-peripheral competitiveness contrast sharply with a potential scenario in which foreign investors and domestic actors work together to reposition the local

economy with high value-added activities. The latter possibility is what this paper defines as FDI-led upgrading, which applies specifically to the context of DMEs.

Drawing on economic geography scholarship, this paper challenges those scholarly accounts that see considerable limitations to domestic economic agency in DMEs and view FDI as an obstacle to economic upgrading. Economic geographers emphasise the importance of local agency in changing development trajectories, focusing on local economic actors rather than the quasi-deterministic role that certain macro-structural conditions may play in economic outcomes (Grillitsch and Sotarauta 2020; MacKinnon et al. 2019). In line with this approach, the paper focuses on the sub-national rather than the state level and explores the economic development of two cities in ECE, namely, Gdańsk in Poland and Cluj in Romania. Over the past two decades, these cities have transformed from semi-peripheral locations to knowledge-intensive centres with a consistent inflow of high-value added foreign investment.

This research is thus y-centred (Panke 2018) in that it focuses on two semi-peripheral urban cases in a DME setting where the dependent variable, FDI-led upgrading is present. In other words, with the help of foreign multinationals, both cities have managed to transform their local economies from a low to a high road of development. A related research has examined local development coalitions in the two cities and concluded that the local governments' embedded autonomy from the central state has paved the way for the revitalisation of these economies (Ban et al. 2024). This study differs in that it introduces the concept of FDI-led upgrading by focusing on the process of transformation in the business ecosystems of the two cities, and instead of local and regional governments, it concentrates on the interaction between local and foreign firms. The paper thus explores how legacies and local agency have created favourable conditions for foreign investors to establish high value-added activities.

The two cities illustrate how, contrary to the claims of the DME literature, foreign capital can become the main driver of economic upgrading. The paper shows that in Gdańsk, FDI-led upgrading occurred through the concerted efforts of the local private and public sectors, which helped attract high value-added foreign investment into knowledge-intensive segments of the local economy. In contrast, the upgrading of Cluj took place without significant involvement of the local government, which initially blocked FDI inflows and, after a liberal change in the city's leadership, became an enabling factor for high value-added FDI. Both Gdańsk and Cluj show that, in addition to favourable legacies that created the conditions for the upgrading of the local economy, a cooperative culture, an entrepreneurial social context, and expatriates' transnational linkages to foreign businesses were necessary for the transition to the high road of growth.

The paper is structured as follows. The theoretical framework is presented in the next section, followed by the outline of the research design. A detailed discussion of the case studies is then presented in two consecutive sections. The final section assesses the similarities and differences between the two cases and draws conclusions.

Economic Upgrading in the Semi-periphery: A Literature Review

The central research question of this paper is how the combination of local agency and foreign capital has contributed to FDI-led upgrading and the revitalisation of the local economy in the two selected semi-peripheral cities. Specifically, it explores how these cities overcame their declining status and semi-peripheral position. While addressing similar issues, both state-centred and subnational-focused developmental economics and political economy literature offer contrasting theoretical claims about the possibility of economic upgrading in such circumstances.

Modernization theory contends that forging strong economic linkages with the most advanced economies through foreign capital benefits the semi-periphery through spillover effects that contribute to their economic catch-up (Gilpin 1987; Rostow 1980). To the contrary, dependency theorists, originally drawing on the Latin American experience, argued that semi-peripheral countries' developmental trajectory was determined by the international economic system rather than their internal characteristics (Prebisch 1959). Within this context, foreign investors, who were the pillars of dependent development, played a crucial role in locking the state's economic trajectory into a semi-peripheral position without much prospects for upgrading (Cardoso and Faletto 1979). Dependent development can also be associated with the concept of the middle-income trap, in which semi-peripheral countries can experience stagnation because they are no longer able to compete with low-wage countries and are similarly unable to match the rapid innovation in the rich ones (Gill and Kharas 2007). The role of foreign firms in the middle-income trap is that they have no incentive to invest in developing the skills and infrastructure needed for higher value-added production if they can easily find them in another, more advanced country (Doner and Schneider 2016).

Contrary to the above structuralist accounts, the developmental state literature is more agency focused and enumerates several success stories where semi-peripheral countries managed to converge with the core. These authors mostly point to the example of East Asian economies and stress the significance of the state as the main actor contributing to the upgrading of the former low-road developmental trajectory (Johnson 1982; Kohli 2004). However, the East Asian model was not easily replicable in other semi-peripheral contexts because of the lack of sufficient domestic capital accumulation, lack of access to modern technology and, most importantly, weak state capacity.

Although the East Asian experience may not be repeated in most of the contemporary semi-periphery, Evans (1979) has shown that dependent development relying on foreign capital can lead to economic upgrading. Using Brazil as an example, Evans argued that countries with sufficient state capacity may be able to create a mutually beneficial relationship between foreign multinationals and domestic firms, which, over time, would lead to economic upgrading. By entering into a triple alliance with domestic and foreign capital, the state can create a balance between the two and invite multinationals to bring in new technology and expand industrial production. For this to happen, as Evans (1995) argues, the state must

enjoy embedded autonomy, meaning that it is not under the influence of particular private interests, be they domestic or foreign firms. The key to economic upgrading through dependent development is therefore a strong, autonomous state that is able to negotiate with foreign investors on an equal footing.

However, as several scholars argue, the neoliberal turn in the global economy unfolding since the early 1980s has deprived the semi-peripheral states of their former instruments for managing economic development. With the liberalisation of trade and investment rules, multinational companies became more powerful than before at the expense of the state, and, as a result, semi-peripheral states have gradually lost the capacity to act as strategic coordinators of national development, and their scope for autonomous developmental action has diminished considerably (Wade 2003; Naseemullah 2022).

The DME literature echoes these arguments about the contemporary limitations to state agency. Although dependent growth through foreign investors has brought several benefits to ECE such as rapid integration into the European and world market, DMEs represent low-wage 'assembly platforms' (Pavlínek 2018) for efficiency-seeking investors in complex manufacturing, who primarily establish low-value-added, export-oriented activities. Therefore DMEs have limited innovation potential because technology transfer and innovation are subject to the decisions of foreign firms, which are keen to keep these activities in their home countries (Weresa 2017). Another critique of the DME model is that foreign firms have rarely developed strong links with the local economy, being at best 'cathedrals in the desert' (Hardy 1998) without sustainable links and substantial embeddedness with the local environment (Pavlínek 2018). Moreover, domestic skills shortages may be a further obstacle to placing these economies on the high road of development (Botrić, Božić, and Tomić 2022). Overall, the DME model exposes these countries to high vulnerability to external shocks (Vukov 2021), while the limited growth potential of the system does not allow them to catch up with the most advanced economies (Myant 2018).

It follows from the above that the opportunities for economic upgrading remain limited, as ECE has been integrated into the world market as a semi-periphery, with cheap and skilled labour as the region's main competitive advantage. This is also the reason why some scholars argue that the DME model has reached its limits and that the opportunities to grow by attracting ever more FDI have been exhausted (Galgóczi and Drahokoupil 2017; Szent-Iványi 2017). These circumstances may threaten ECE with the middle-income trap (Győrffy 2022; Myant 2018; Riedel 2021), where rising wages may lead to the loss of cheap labour as ECE's main competitive advantage, and the lower quality of domestic human capital, weak innovation, and low productivity prevent further economic catch-up (Iammarino, Rodriguez-Pose, and Storper 2019). In other words, the region may be permanently stuck in the semi-periphery with meagre prospects for economic upgrading (Gerőcs and Pinkasz 2018).

Based on the DME model, dependent development as portrayed by Evans (1995), where the state is an autonomous actor forging mutually beneficial alliances between domestic and multinational firms, is unlikely in the context of DMEs. If this is indeed the case, then instead of leading to economic upgrading, dependency

becomes a vehicle for the middle-income trap, placing DMEs in a permanent semi-peripheral position. Comparative political economists have already shown that developmental state agency in ECE has been much more active and autonomous than envisaged by the DME literature (see for instance Avlijaš 2020; Bohle and Greskovits 2012) and that those state capacities have been externally strengthened by the European Union (Bruszt and Langbein 2020).

Nevertheless, even if CEE states possess greater embedded autonomy vis-à-vis foreign investors than previously thought, this may not necessarily apply at the sub-national level where local actors are subject to both the influence of the central state and that of foreign investors. This may render FDI-led upgrading of the local economy very challenging, to say the least. Similar to the state-centred studies, the literature on local development, which can provide the theoretical basis for how local economic upgrading may take place in the DME context, is divided over structuralist and more actor-centred approaches.

Drawing on the theory of circular causation, which posits that market forces can create virtuous and vicious circles of development leading to persistent economic disparities and core-periphery divisions (Myrdal 1957), some economic geographers emphasise path-dependence or regional 'lock-in' (Grabher 1993; Coenen, Moodysson, and Martin 2015; Martin and Sunley 2006). Path dependencies can create obstacles to economic development and hinder the formation of institutional constellations that could contribute to catching-up (McDermott 2007). When considering local development in DMEs, the historical legacies and local endowment may indeed play a decisive role in determining the areas preferred by foreign investors. Several works on DMEs in ECE (Brown, Greskovits, and Kulcsár 2007; Medve-Bálint 2015) have empirically demonstrated this spatially divisive mechanism that follows local endowments. However, path-dependence and regional lock-in do not suggest anything about how economic upgrading can occur in areas that are otherwise favoured by foreign investors. Path-dependence becomes especially problematic in the case of declining regions where it would imply a permanent economic downturn.

The more agency-focused political economy and economic geography literature informs about the conditions of local upgrading. It has been shown in non-peripheral contexts that an urban growth coalition, a politically mobilized local elite aimed at stimulating growth can serve as a vehicle for local economic upgrading (Molotch 1976). In general, the sub-national level is best placed to develop the complementary skills, infrastructure, and services that may be attractive to firms, including foreign companies. This approach, contrary to the dependency and DME literature and the structuralist accounts in economic geography, focuses on the role of local agency in generating growth and highlights the significance of cooperative arrangements between different local actors, including the private sector, civil society, and local government. However, the success of such growth coalitions in the case of declining areas may depend on historically rooted local social and economic structures that define the level of local social capital (Safford 2009) or facilitative institutions that can overcome cognitive obstacles to cooperation (Gartzou-Katsouyanni 2024). In addition, industrial legacies and, in particular, labour skills may also be key factors in overcoming economic decline (Treado 2010). Last but not least, the presence of

universities, especially in the fields of science, technology, engineering, and mathematics (STEM), can contribute positively to the reinvention of the local economy (Breznitz 2014; Rodríguez-Pose and Lee 2020).

Reports about successful upgrading in formerly declining US and Western-European industrial cities confirm the above arguments: they all emphasise that the main factors contributing to economic revival were the central role of local leadership, a long-term commitment to a developmental strategy, the partnering of the private sector and developers with city agencies and investment in education (Carter 2016). A comparative study between Pittsburgh and Cleveland in the US rust belt has revealed that stimulating partnerships between local universities and innovative companies is a key element of upgrading whereas investment in already declining legacy sectors may not break the declining trajectory (Armstrong 2021). According to these accounts, the local government's developmental agency plays a crucial role in economic upgrading, which contradicts structuralist views that prioritize historical endowments (see Hill 2021 for the critique of Armstrong 2021).

The above, agency-centred empirical studies explored the economic revival of declining semi-peripheral cities in advanced economies. However, it is important to note that the context of these studies differs from that of ECE in one fundamental aspect. None of the US and Western European cities were embedded in DMEs, where foreign-owned companies are the primary sources of technology, innovation, and economic growth. Local governments in these cities have formed partnerships with domestically owned companies, rather than foreign ones. Although foreign capital can contribute to the upgrading of the local economy by bringing innovation and technology to the host area (Iammarino and McCann 2013), in none of the examined US and Western European cases was FDI the main pillar of economic upgrading (Carter 2016).

However, in the DME context, due to the lack of sufficient local economic capacity, FDI can be expected to become the prime contributor to local economic revival, but only if foreign capital shifts from low to high value-added activities. Thus, FDI-led upgrading differs conceptually from Evans' dependent development in that it places foreign investors, rather than the state, at the centre. The question is under what conditions FDI-led upgrading takes place in this semi-peripheral setting. Taking into account the role of other local actors, including domestic firms, universities, and local and regional governments seems necessary, as suggested by the agency-centred literature on local economic development. In short, studying the evolution of the local business ecosystem can shed light on how FDI-led upgrading occurs in a semi-peripheral context, particularly in DMEs, where such phenomena are unlikely, according to political economy scholarship on the DME model of capitalism.

Research Design

FD-led upgrading is operationalised here as a sustained, above the national average inflow of high value-added foreign investment into an urban locality. According to the smile curve concept, business activities in the early or late stages of the supply chain generate the highest value added (Rungi and Del Prete 2018). Specifically,

headquarters services, design, research and development, logistics, and post-production services are considered high value-added activities, while production and assembly, which occupy a middle position in the value chain, are considered low value-added. Focusing on business activities in the value chain is important because it allows for a more nuanced distinction between different types of investments than looking only at the main profile of investors. For example, the same company operating in the automotive industry may establish a low value-added assembly plant and, in another location, a research and development centre or a business services centre that carries out high value-added activities. To give an example, in 2018, Jaguar Land Rover set up a low-value-added manufacturing plant in Nitra, Slovakia, while in the following year, it opened a high-value-added engineering centre in Budapest, Hungary. The two operations are at very different positions in the company's value chain.

First, Poland and Romania were picked among the semi-peripheral DMEs in ECE to identify cases of local economic upgrading. Although both Poland and Romania rely on the inflow of transnational capital, Poland is considered an embedded neoliberal market economy (Bohle and Greskovits 2012) where the central government shares a developmentalist attitude (Naczyk 2022), while Romania is a neoliberal economy (Ban 2016) where the market remains largely disconnected from societal demands and the state has failed to orchestrate institutions that promote sustainable economic upgrading (Medve-Bálint and Šćepanović 2020). Moreover, although both are unitary states, Poland stands out in ECE in terms of the degree of political, administrative, and fiscal autonomy of local and regional governments, while self-rule below the central administration is significantly more limited in Romania (Ladner, Keuffer, and Bastianen 2022). Finally, Poland has a relatively stable political environment in that central governments tend to serve their full terms and early elections are rare, while Romania faces persistent problems of political instability with frequent changes of government. These two semi-peripheral countries are similar in their model of capitalism in that both are dependent on FDI, but the domestic political and regulatory contexts of local and regional governments differ, which may also affect the path towards FDI-led upgrading.

The next step was to identify the inflow of foreign investment into the main urban settlements in each country. The Financial Times' commercial dataset, the fDi markets, was used for this purpose, as it is currently the only international database providing comparable FDI data that records foreign investment projects by the physical location of the investment at the municipal level. Excluding investment projects in health care, retail trade, retail banking, and construction, the dataset contains 5049 new foreign investment projects (including greenfield projects and expansions of existing facilities) in the two countries (3187 in Poland and 1862 in Romania) for 2004–2020.

The data were coded for value added according to the smile curve concept, taking into account the position of the foreign investment in the value chain. The fDi markets include information on the business activity of each project, which was classified into five different categories representing value chain functions, following the approach of Stöllinger (2021): headquarter services, R&D and related services, production, logistics and retail services, and support services. Value added was then

ranked on a scale of one to five according to the position of the activity in the value chain: headquarters and support services received the highest score (5), R&D and related services and logistics and retail services received a medium score (3), and the lowest score (1) was given to production. Finally, the data on value added were aggregated by taking the average score of all foreign investment projects. In Poland, the average score of all foreign investments was 2.89, while in Romania, it was 2.85.

The list of cities with at least 15 foreign investment projects recorded and ranked by the average value added of foreign investment served to identify those cities where FDI-led upgrading has taken place (Table 1). The territorial distribution of foreign investments is very uneven, with capital cities securing a disproportionate share. Not only have capital cities attracted a large number of foreign investors, but high value-added investments have also been concentrated there. This is not surprising. These core cities have the best infrastructure, the most skilled workforce, and the largest population in their countries, making them natural targets for foreign investors. The highly uneven distribution of high-value-added foreign investments also means that the average score is heavily skewed upwards by the capital cities. Consequently, if a city scores well above the national average, it indicates exceptional performance in the national context.

It follows that few cities have experienced FDI-led upgrading, which is consistent with the expectations derived from the DME literature. Nevertheless, the rare positive cases call for further investigation. The fact that there are some cities in ECE that have managed to engage in FDI-led upgrading despite the structural constraints of the DME model suggests that, under certain circumstances, dependence on foreign capital can become a vehicle for economic revival, thus it shows the relevance of the concept of FDI-led upgrading.

In the end, Gdańsk and Cluj were selected for the case studies. As Table 1 reveals, both cities have been popular destinations for foreign investors with a high number of foreign investment projects. Moreover, both cities were among the top performers in attracting high value-added foreign investment, well above the national average, making them examples of FDI-led upgrading. In addition, both cities faced an industrial legacy of declining complex manufacturing, chemical and heavy industries in the 1990s. As this type of industrial legacy proved attractive to low value-added foreign investors in ECE, the two cities could easily have followed the typical DME path of low road growth based on foreign capital in complex manufacturing sectors. However, they did not do so. The two cities also share a semi-peripheral position within their national context. Although they are large urban centres, they lag far behind the capital cities in terms of population size and quality of infrastructure, but are well ahead of the truly peripheral areas of their countries.

A further reason for selecting Gdańsk and Cluj was that in both countries there are cities with very similar initial conditions which, however, failed to upgrade their local economies. For instance, Szczecin is a major Baltic port in Poland, with a comparable population to Gdańsk and a very similar industrial heritage and academic tradition. However, unlike Gdańsk, Szczecin has not become a preferred destination for high value-added foreign investors. The Tricity metropolitan area (consisting of the cities of Gdańsk, Gdynia, and Sopot), home to over 1.5 million people, certainly gave Gdańsk an advantage over Szczecin as the latter cannot rely

Table 1 Top 15 cities ranked by mean added value of foreign investment projects (2004–2020) in Poland and Romania with at least 15 investment projects recorded

Poland			Romania		
Municipality	Mean added value of foreign investment projects	Number of foreign investment projects	Municipality	Mean added value of foreign investment projects	Number of foreign investment projects
Warsaw	4.54	685	Bucharest	4.16	607
Gdynia	3.97	31	Iaşi	3.95	65
Kraków	3.86	211	Conştanţa	3.42	24
Gdańsk	**3.70**	**131**	**Cluj**	**3.34**	**125**
Poznań	3.55	160	Timişoara	3.05	126
Wrocław	3.40	243	Braşov	2.51	81
Katowice	3.36	101	Sibiu	2.40	57
Lublin	3.00	28	Târgu Mureş	2.33	15
Bydgoszcz	2.94	34	Craiova	2.19	32
Szczecin	2.93	59	Arad	2.03	29
Toruń	2.78	18	Piteşti	2.00	24
Opole	2.68	19	Ploieşti	1.74	46
Łódz	2.51	139	Oradea	1.74	38
Strykow	2.44	18	Satu Mare	1.32	19
Sosnowiec	2.08	26	Slatina	1.00	17

Source: author's calculation based on fDi markets

on such an extensive agglomeration. However, the failure of economic upgrading in Szczecin cannot be solely attributed to this factor. The absence of strategic efforts to promote creative industries (Markiewicz 2014), and, according to the Szczecin city council, 'a lack of cooperation and dialogue at various levels' (quoted by Tölle 2014:46) have contributed to the city's economic development lagging behind that of Gdańsk. Thus, the economic trajectories of Gdańsk and Szczecin may differ due to variations in their local development agency.

In Romania, the city of Braşov, which was the industrial powerhouse of the country during state socialism, shared very similar legacies with Cluj: comparable population size, similar multiethnic traditions, favourable industrial legacies, and renowned higher education institutions. However, the city did not experience FDI-led upgrading or any upgrading at all. On the one hand, until the mid-2000s, there was a lack of coordination among stakeholders regarding the development of the local economy (Marinescu 2011). On the other hand, when a strategy for the development of the city was finally adopted in 2007, the document identified the promotion of tourism and FDI in the automotive sector as priorities. As a result, foreign automotive investors arrived, setting up low value-added production facilities, and a large number of local companies were established in the tourism sector, but this segment offers little profitability (Bărbulescu and Constantin 2019). Thus, the case of Braşov is an example for limited initial local cooperation and investment in legacy sectors, which, as already shown in the US context, does not lead to upgrading (Armstrong 2021). Cluj experienced a different trajectory, thus the drivers behind that are worth exploring.

Cluj and Gdańsk provide an excellent opportunity to examine how economic restructuring has taken place through FDI-led upgrading in semi-peripheral urban contexts within two semi-peripheral, FDI-dependent countries. The following sections present the two case studies. The analysis is based on secondary literature and 17 semi-structured interviews (details listed in the references) conducted in autumn 2019 and spring 2020 with representatives of the local business ecosystem in the two cities, including domestic and foreign companies, higher education institutions, and local and regional government organizations.

Gdańsk's Economic Revival Through FDI-Led Upgrading

Located in the Pomeranian region, Gdańsk, with a population of 486,000 (2022), is Poland's historic port on the Baltic Sea, near the Vistula river delta. In its rich and turbulent history, the city has witnessed several events of global significance. The first military actions of WWII took place here, and it was also the cradle of the Solidarity civic movement, which played a significant role in the downfall of communism. The city's current motto ('the city of freedom') proudly reflects its strong civic traditions. Left with declining shipbuilding and heavy industry after the change of regime, Gdańsk has recently managed to reposition and diversify its local economy. Over the past decade, the city has attracted several high value-added foreign investments in ICT, logistics and business services. In addition to relatively favourable regional endowments (out of the 24 higher

education institutions in Pomerania, 13 are located in Gdańsk, the third largest international airport in Poland, good land and rail connections), an active local and regional government has also contributed to the city's success in securing these investments.

As a major port, Gdańsk's economy was traditionally based on trade. However, after the partition of Poland in the late eighteenth century, the city came under Prussian rule and state-led industrialization followed. The first shipyard opened in the 1840s. By the turn of the century, other companies, such as a steel mill, electric power plants, and another shipyard, had started production, and the city's transport infrastructure, including its railway connections, had also been built (Müller 2015). After WWII, the communist government strengthened the shipbuilding profile: by 1968, the sector's share of local economic output had risen to 45%. Gdańsk became an industrial port complex whose economy rested on three main pillars: steel and metallurgy, petrochemical industry (oil refinery), and power generation (Lorek 2015).

However, the decline of heavy industry began as early as the 1970s, leading to a gradual de-industrialization. The Gdańsk Shipyard (*Stocznia Gdańska*), which at its peak employed more than 16,000 workers (Prawelska-Skrzypek and Morgan 2020), went bankrupt in 1996 after several failed attempts at restructuring. Unemployment had already risen to 14% by 1992 and jumped to 22% a decade later as the leading sectors of the economy declined. In these circumstances, the city's economic prospects did not look bright, but there were some glimmers of hope.

A report published in 2002 by the influential Gdańsk Institute for Market Economics (*Instytut Badań nad Gospodarką Rynkową*, IBnGR) found that the city's competitive position was unsatisfactory (Brodzicki et al. 2002). It noted that the local economy was dominated by traditional, often declining, low value-added sectors and that the high value-added, knowledge-intensive segments were of marginal importance. The authors of the document suggested that the local economy should be adjusted so that knowledge-intensive business services become more important. They outlined two possible scenarios for the structural transformation of the economy: through the inflow of high value-added FDI (equivalent to FDI-led upgrading), or through the promotion of domestic research and development and the forging of intensive cooperation between local academia and SMEs. The authors also urged the city government to take the initiative and become the driving force behind collaborative arrangements between universities and local businesses.

Although the local economy was indeed dominated by declining sectors in the 1990s, it was more diversified than the data might suggest. The city has traditionally been strong in logistics, electrical machinery, construction, and tourism (Interview L 2020), while a considerable pool of IT talent has been growing since the 1980s from graduates of the technical university. Poland's first ever IT company, Prokom, was founded in 1987 (Wojnicka-Sycz 2018) in the nearby city of Gdynia with the financial help of an expatriate, former Gdańsk University of Technology graduate Ryszard Krause, who first had made his fortune working in Germany. Several other small IT firms were established, which incrementally created the high-tech base on which foreign investors could build. Thus, the seeds of the endogenous development path identified by the IBnGR report were present, as in 1999 Gdańsk had almost 700

SMEs based on advanced technology, mainly spin-offs from technical universities, R&D units, and individual inventors.

The gradual development of the local IT sector could not keep pace with the influx of foreign investment. However, the arrival of knowledge-intensive multinationals has not been straightforward. The turning point came with the entry of US technology giant Intel in 1999, when it set up a research and development centre. This investment had its roots in the IT business of another Polish expatriate. In 1991, Tadeusz Witkowicz set up an R&D laboratory in Gdańsk for his US-based company CrossComm, which specialized in manufacturing routers for large computer networks. Six years later, a Danish IT company, Olicom, acquired CrossComm, and in 1999 the network development part of the company was bought by Intel. Intel's R&D centre in Gdańsk was based on Olicom's branch (Jadczak 2015). Intel has expanded its operations and currently employs more than 3000 engineers, making it the company's largest R&D centre in Europe, with plans to open additional facilities focused on artificial intelligence, machine learning, and autonomous vehicles (Wilczek 2021). Witkowicz contributed to another IT business in Gdańsk when he founded the software development company Adlex in 1998, which opened an office in the city. In 2005, the company was acquired by the US technology firm Compuware, which opened a development centre in the Adlex premises.

Following Intel's successful entry, foreign firms have subsequently become the main drivers of economic restructuring and upgrading. Building on the relatively high share of inhabitants with tertiary education, Gdańsk began to attract foreign-owned ICT, business services, and other tech firms. Besides Intel, another big foreign investor is Amazon, which in 2013 acquired the Gdynia-based tech firm Ivona, which by that time had already become an industry leader in text-to-speech technology (Shontell 2013). Other big tech firms have also established their businesses in the city, making it the most dynamically growing tech hub in Poland. By 2019, the tech sector employed nearly 8% of the total local workforce, representing a fivefold increase since 2011 (Invest in Pomerania 2020).

As suggested by US and Western European examples (Armstrong 2021; Carter 2016), the universities, particularly the large pool of engineers and IT graduates were necessary for attracting foreign tech firms. However, several other factors have contributed to FDI-led upgrading, including the city's cost-effectiveness. As a director representing a large French digital services company explained, by the end of the 2000s, all other major cities in Poland with considerable IT talent, such as Warsaw, Kraków, and Wrocław, had already saturated the market, while there was hardly any competition for IT experts in the Gdańsk region (Interview M 2020). For this reason, Gdańsk has offered good value for multinational IT firms.

The entry of knowledge-intensive foreign firms has been facilitated by a shift in the technology industry: while ICT was dominated by hardware in the 1990s, the competitive edge now lies in software development, which is beneficial for the local IT talent (Interview O 2020). However, foreign investors would not have come to Gdańsk without the availability of the necessary infrastructure, especially quality office space, which was in short supply until the late 2000s. The first major development of office space was a public investment initiated jointly by the city council, the regional government, the central government-owned Pomeranian Special Economic

Zone, and Gdańsk University of Technology. With EU co-financing, a former printing plant was transformed into the Gdańsk Science and Technology Park, which opened its doors in 2006 and became one of the first large-scale office development projects for business services (Interview B 2019). However, the profile of the park is not suitable for attracting multinational companies, as it functions more as an incubator for small biotech, IT, and energy companies. Because of the scattered nature of the available office space, large foreign business services companies do not consider locating there (Interview D 2019).

Instead of such publicly funded property developments, local private developers have created the infrastructure for foreign technology giants. One of the most important developers is Torus, a company founded in 2002 by former maths teacher and expatriate Małgorzata Dobrowolska, who first established a highly successful textbook publishing company in 1991 and entered the property market after her husband had passed away (Grzegórska 2012). Torus has completed several major office development projects that now house foreign companies such as Cognizant, Jeppesen (Boeing), Hapag-Lloyd, and Thomson-Reuters.

The other key player in office development is local businessman Maciej Grabski, who traded in car parts in the early 1990s and later co-founded *Wirtualna Polska* (Virtual Poland), Poland's first and largest e-commerce and multimedia portal (Wiak 2012). He financed the construction of northern Poland's largest business centre, Olivia, which he sees as part of his mission to contribute to the city's development (Korczak 2012). He shares the view that attracting young and talented people to the city and creating conditions for their development works better than 'spending a lot of money on science and technology parks', which he considers risky and costly investments (Grabski 2015).

Grabski's views are important because they seem to be in line with the strategy of local and regional authorities: since the mid-2000s, they have emphasized the promotion of knowledge-intensive foreign investors, i.e. an FDI-led upgrading strategy, while at the same time devoting efforts, albeit to a lesser extent, to supporting the development of local start-ups. Cooperation between local public stakeholders has been a key element of a successful promotion strategy, which has been aided by long-term political stability and stable local finances, with high capacity of the city council to generate own revenues (Ban et al. 2024). The regional government and the leadership of the city council have long been on the same political platform, which also facilitates cooperation. In 2008, on the initiative of the late Mayor Paweł Adamowicz, Gdańsk established the InvestGDA agency and provided it with land to develop and lease, mainly to foreign investors (Interview C 2020).

The big step in coordinating investment promotion activities came in 2011, when the Pomeranian Regional Development Agency, a dedicated body of the regional self-government, established the Invest in Pomerania agency to serve as a one-stop-shop for prospective investors (Interview E 2020). The agency specializes in attracting investors in the IT, business services sectors, and, more recently, e-mobility, semiconductors, and energy. Its main aim is to present the region, including Gdańsk and the nearby cities of Gdynia and Sopot (the Tricity) as a single entity. This is 'because investors may find the location more attractive if they realize that they can draw on a population of over 1.5 million people' (Interview D 2019). Importantly,

the central government does not block regional development initiatives, although between 2015 and 2023 there was political tension between the right-wing central government and the liberal-centrist regional and local authorities (Interview A 2019). At the same time, the embedded autonomy of the city council allows it to pursue a development policy independent of the central government (Ban et al. 2024).

Foreign businesses have thus benefited from the constant supply of local IT talent and the promotional activity of the local and regional governments. Local real estate developers have been among the greatest beneficiaries of the massive inflow of foreign investors requiring high-quality office space. Besides these positive effects, FDI-led upgrading has yielded mixed results on the local business ecosystem. This is because the large foreign-owned firms can offer multiple times the salary that a local high-tech SME can afford; thus, competition with those tech giants is very challenging for the local businesses (Interview O 2020). Even if they stand this unequal competition, local firms lack management skills, including marketing, sales, business development, and customer services (Interview O, P 2020), and the foreign companies are not interested in offering their management experience; thus, spillover effects are rare (Interview Q 2020) although other experts share a more positive view on this (Interview D 2019). Another challenge facing the local business ecosystem is the lack of venture capital: while public funding is abundant, private funding for start-ups is limited (Interview P 2020).

Nevertheless, efforts by public authorities to develop locally based knowledge-intensive firms are noteworthy: the Gdańsk Science and Technology Park tries to accelerate start-ups (Interview C 2020), while both InvestGDA and Invest in Pomerania regularly organizes business meetings for local firms looking to enter foreign markets (Interview C 2020; O 2020). In addition, the business incubator Starter, an initiative of the Gdańsk Entrepreneurship Foundation established by the city council, not only provides office space for start-ups but is also involved in teaching entrepreneurial skills to primary and secondary school students (Interview P 2020). The technical university also has a centre that aims to commercialize innovative research carried out on its premises. However, the survival rate of these spin-off companies is low (around 20%), mainly due to a lack of management know-how (Interview Q 2020).

While the graduates of the universities are one of the main selling points of Gdańsk for foreign investors, the universities show a less cooperative attitude towards the local private and public sector, which contrasts sharply with US cities (Armstrong 2021). Co-operation with public universities on updating their curricula to meet the needs of the market is cumbersome (Interview M 2020), and the same view is shared by the promotion agencies (interviews C, N, P 2020). However, the technical university, which is Intel's main provider of employees, has established a long-term cooperation with the US tech giant, which also extends to joint research and development projects and theses supervision (Interview Q 2020). Moreover, the two largest office centres, Olivia and Alchemia, are located in close proximity to the main building of the University of Gdańsk, which is not only symbolic: the university and the centres cooperate to improve the employment of their graduates.

While FDI-led upgrading has taken place through the influx of foreign investors into knowledge-intensive segments, some other parts of the local economy unrelated

to the technology sector are also thriving, demonstrating that the city has a diversified economic profile and a deeply rooted entrepreneurial spirit. Although the shipyard went bankrupt, the most internationally competitive parts of it were privatized to insiders and the successor companies (such as Crist or Remontowa Holding) are now producing highly sophisticated ships for the export market (Interview L 2020). Gdańsk is also home to the headquarters of LPP, Poland's largest clothing company, which has grown from a small local firm importing clothes from Asia in the early 1990s to a company with its own leading fashion brands in more than 40 countries worldwide (Sobolak 2022).

Several elements therefore contributed to the city's economic revival through FDI-led upgrading: the emerging local pool of IT talent and the initial investment in technology firms by expatriates and local entrepreneurs helped the local technology sector to grow and attract foreign companies. Local property developers facilitated this process, as did the city council and regional self-government, which actively cooperated in promoting the FDI-led upgrading strategy. Nevertheless, a visible spillover from the foreign-owned tech firms to the domestic companies has not yet emerged, and venture capital is still missing to a large extent. All in all, the recent rise of Gdańsk's economy happened through concerted efforts of the local players, in stark contrast to the case of Cluj, which is discussed in the next section.

FDI-Led Upgrading in Cluj

Located in the heart of Transylvania, Cluj is the second most populous city in Romania, with more than 328,000 inhabitants (2022) in the city centre and more than 400,000 in the wider metropolitan area. Several ethnic groups have inhabited this centuries-old city, which has left a multicultural legacy on its history and culture. While in the mid-twentieth century, the majority of citizens were Hungarians, due to massive industrialization during the communist period, their share gradually declined and currently more than 80% of the population is Romanian. Traditionally, Cluj's economy was specialized in trade and crafts, and until the 1970s, it was a place of intellectuals, students, and a centre of culture and higher education (Maftei 2020). However, forced industrialization during the communist dictatorship transformed the city into an industrialized area with metalworking, heavy machinery, and refrigerator manufacturing, as well as more traditional leatherworking, milling, and food processing (Lakatos 2017).

The 1990s saw a long process of deindustrialization, with rising unemployment and the marginalization of industrial workers. This led to frustration and a growing sense of nationalism, which paved the way for the election of a xenophobic mayor whose political discourse resonated with workers' sentiments and blocked any potential foreign investment (Petrovici 2012). Meanwhile, many laid-off low-skilled workers left the city and were replaced by new migrants, who tended to be more highly qualified. Cluj's strong universities, including the Technical University and Romania's largest university, Babes-Bolyai, continued to attract young students and intellectuals. In 2004, the election of a new liberal-minded mayor, Emil Boc, marked a turning point in the city's post-communist history, and the internationalization of

the local economy began (Maftei 2020). Since then, Boc has served the city in the same role, except between 2008 and 2012, when he was Prime Minister of Romania. Political stability in Cluj is thus similar to that in Gdańsk, which is an important element for committing to a long-term strategic vision (Carter 2016).

Currently, more than 20% of the local workforce is employed in knowledge-intensive, mostly foreign-dominated sectors such as ICT, business services, research and development and financial services (Petrovici, Mare, and Moldovan 2021). Similar to Gdańsk, the entry of the first large multinational investor, Nokia in 2006, paved the way for further FDI inflows. Even though in 2011 Nokia left because it suffered heavy losses in the global market, its entry to Cluj opened the gates to transnational capital because it showed that the city was worth considering as an investment location (Interview F 2019).

In addition to the local government's openness to FDI after 2004, a nationwide income tax exemption for IT workers, introduced in 2001, has also facilitated the entry of foreign firms not only in Cluj but also in the whole country (Interview G 2019). The introduction of this tax relief was unexpected, as it was the initiative of a single MP without being part of any government programme. Nevertheless, the proposal was adopted and has since contributed to the expansion of the IT sector in Romania (Manelici and Pantea 2021). In terms of city-level factors, similar to Gdańsk, the supply of highly qualified graduates from local universities proved important, as did low wages compared to Western European locations (Interview J 2019).

The presence of local IT talent is a favourable legacy of the state socialist period, as is often the case with the supply of other competitive skills in post-communist countries (Avlijaš 2022; Beblavý and Kureková 2014). The Institute for Computing Technology, founded in 1968 in Cluj, developed the first electronic computer and the first software and operational system in Romania. The majority of the hardware and software specialists that form the basis of the current IT industry in the city have linkages to this institute, which was dissolved in the early 1990s (Bocu, Nedevschi, and Varga 2020).

After the collapse of communism, hundreds and thousands of IT graduates from Cluj emigrated to Western Europe, but in the late 2000s, they began to return with technical and managerial experience gained in the core EU countries. They set up domestic companies oriented towards international markets and carried out activities outsourced to them by foreign companies. Thus, as in the case of Gdańsk, firms set up by expatriates established links with foreign capital (Fan et al. 2019). In addition, local software engineers have contributed to this process by mobilizing their knowledge and financial resources and creating their own small software development companies to service external firms (Corodescu-Roșca, Hamdouch, and Iațu 2023).

One of the best examples of the above mechanisms is the company iQuest, founded in 1998 by Cornelius Brody, a graduate of the technical university in Cluj, who had worked in the German technology sector from 1988 until his return (Vasiu 2020). Brody targeted foreign clients to sell his company's IT services, and within two decades, iQuest turned into one of the largest software developers in Romania. In 2018, Germany's Allgeier Group became the company's majority

shareholder, but Brody remained involved in management as chairman of the board.

EBS Romania is an example of a foreign subsidiary that soon separated from the parent firm and grew as a local company until it was acquired by a foreign investor. A German software company, specializing in enterprise resource planning, founded EBS in 2000. At the time, it was one of the first foreign IT companies in Cluj. In 2002, however, the parent company experienced profitability problems and decided to close the Romanian subsidiary. The local manager, Daniel Metz, initiated a management buy-out and took over EBS (Produs in Ardeal 2015). In the following years, several large multinationals became the company's customers and in 2013, when it already had more than 500 employees and a turnover of 18 million euros, was acquired by the Japanese tech firm NTT data (Fan et al. 2019).

The above cases show that the growth of the city's technology sector has taken place without much support from the local and regional authorities, although the liberal political shift has enabled the internationalization of the city's economy (Corodescu-Roșca et al. 2023). However, unlike Gdańsk, Cluj has not established local investment promotion agencies. Although the city government enjoys a stable financial situation with a high share of own revenues in the budget (Ban et al. 2024), it is less active in promoting foreign investment (Interview F and J 2019). One of the main reasons for this is that, unlike the local government in Gdańsk, the municipality does not own substantial land property that can be offered to potential investors (interviews I and J 2019).

Another reason is the mayor's neoliberal convictions, which are reflected in his attempts to minimize bureaucratic procedures and remove any obstacles to FDI inflows (Vincze 2017). In line with this stance, the city council has frequently changed planning laws to allow for the construction of tall office buildings in the city centre, which multinational tech companies demand (Interview J 2019). As a result, more than 370,000 square metres of Class A office space had been delivered by private investors by 2021, with more construction projects underway (Petrovici et al. 2021). While the municipality enables FDI-led upgrading, it is not the driving force behind it as 'the success of the economy has rather surprised the city leaders' (Interview K 2019). Nevertheless, the city hall has some forward-looking initiatives. For example, the Consultative Council for Entrepreneurship and Innovation in IT brings together the mayor's office with representatives of ICT companies and universities to coordinate projects that can improve the local business environment (Fan et al. 2019).

The regional government of Cluj County has been more active in attracting investors. It has secured EU funding both for the development of the city's international airport and for the creation of the Tetarom industrial park in 2001 (Interview F 2019). The first investors established manufacturing plants, but later, the US-based Emerson set up an engineering centre. Initially, the company wanted to establish a production plant in 2006, but when the Tetarom management introduced the company's representatives to the Technical University and they became familiar with the supply of highly qualified engineers, Emerson decided to build an engineering centre in addition to the production facilities of electrical equipment (Interview I 2019).

Local universities contribute more actively to the process of FDI-led upgrading than in Gdańsk, partly because they enjoy greater autonomy from the central government. An entrepreneurial attitude characterizes the universities, which engage with company managers and form partnerships with them in research projects, internship programmes, and curriculum development (Interview H 2019). It is important to note that universities started to engage in such cooperative arrangements after the foreign firms had set up their businesses in the city. The cooperation between Bosch and the Technical University illustrates this mechanism: the university has developed two MSc programmes together with the company, and they cooperate in doctoral and postdoctoral research, too. They have also created an internship programme with the help of EU funding. The importance of this relationship is demonstrated by the fact that Bosch has appointed a contact person whose sole responsibility is to maintain cooperation with the university. Cooperation between universities and companies is now more widespread than before, including regular meetings and debates (Fan et al. 2019), which is another sign of the developmental agency of the local higher education institutions.

Although Cluj's economic revival has been led by FDI, the development of the non-ICT sectors have been determined by strong and enduring informal ties forged in the business elite, the seeds of which were sown during the communist era. The decades of forced industrialization and state ownership, and the subsequent xenophobic atmosphere did not kill the city's entrepreneurial spirit, which has gradually revived (Petrovici et al. 2021). The culture of cooperation is a specific asset of the city, which was reduced to private cooperation in the 1990s (Corodescu-Roșca et al. 2023:8). The local business elites, unlike those in other Romanian cities, did not manage to assume high political roles in the central government, which made it impossible for them to access nationally distributed resources (Petrovici and Simionca 2011). This, together with the lack of consistent urban regulations and, paradoxically, the ultra-protectionism of the 1990s, helped local businesses to grow and shielded them from external competition, creating favourable conditions for capital accumulation (Petrovici and Simionca 2011; Vincze 2017).

Instead of rivalry, local businessmen, mainly in the communications, real estate, and transport sectors, began to cooperate with each other in order to mobilize more resources and increase their chances of success (Pop 2009). In 1994, 13 individuals, mostly engineers who had already accumulated some initial capital, and a banker, Iosip Pop, who had previously worked at the National Bank, founded Banca Transilvania, which initially targeted SMEs in Cluj. The bank became the vehicle for the businesses of the entrepreneurs who founded it. Other local companies soon joined and Banca Transilvania emerged as one of the main engines of the city's economic revival (Petrovici 2012). As Horia Ciorcilă, one of the founders explained, 'the relationship was one of reciprocity: the bank supported local entrepreneurship by providing financing on commercial terms, and those who turned to the bank helped it by becoming its customers' (Juncu 2018).

Subsequently, some of Banca Transvilvania's founders engaged in property development, often becoming clients of foreign technology companies for constructing office buildings. However, the development of office space and other commercial property was far from conflictual. Real estate investment in Cluj is often

accompanied by the displacement of residents, whose former homes are converted into offices, while the displaced are left without housing or support (McElroy 2020). This is one of the consequences of the city hall's neoliberal approach, which promotes the private sector and neglects investment in housing projects (Vincze 2017). At the same time, in the last two decades, among the major Romanian cities, Cluj has recorded the highest improvement in various socio-economic indicators, including housing (Benedek, Ursu, and Varvari 2022), which suggests that FDI-led upgrading has had important trickle-down effects despite the neoliberal stance of the local government and the high degree of informality in the domestically owned economic sectors.

The economic revival of Cluj through FDI resembles that of US success stories in that local universities took a leading role in the process. However, unlike in Gdańsk and contrary to the empirical observations in non-DME contexts (Carter 2016), the local government has rather been a passive enabler than an active contributor to upgrading. Similar to Gdańsk, the availability of local talent, of which origins date back to communist times, together with transnational personal networks of expatriates have facilitated the entry of high value-added foreign firms to Cluj. This suggests that besides favourable legacies, an active local developmental agency, even if not formally channeled through public authorities, may play an important role in the revitalization of post-communist cities.

Conclusion

If endogenous development potentials are insufficient for upgrading, semi-peripheral places have to rely on external resources to break the trap that locks them into their less privileged position. Once established, this external dependence usually reinforces the semi-peripheral situation and rarely leads to economic upgrading. The exceptions are those cases where a strong, autonomous central state has managed to create a mutually beneficial alliance between domestic and foreign capital. In today's globalized world, however, semi-peripheral states are heavily exposed to the power of transnational capital and lack most of the tools for autonomous developmental agency. As the comparative political economy literature argues, these structural constraints apply even more to ECE, where the typical capitalist system of DME, in which foreign investors establish low value-added activities, has reinforced the region's semi-peripherality.

The case studies of the cities of Gdańsk and Cluj challenged these views on the structural constraints limiting domestic agency in DMEs, and confirmed economic geographers' arguments that a new economic path towards a high road of development in the semi-periphery requires local talent, cooperation between stakeholders, a favourable industrial legacy in terms of labour skills, and appropriate physical infrastructure. The two cities are among the rare semi-peripheral urban areas in ECE where the sustained inflow of high value-added foreign capital has transformed the local economy. Moreover, this process has not been directly supported by central governments, so that the interaction between local actors and transnational capital has produced this outcome.

However, there are important differences between the two cities, which seem to reflect the nuances in the respective countries' capitalist models. In Gdańsk, the deeply ingrained culture of cooperation allowed for a concerted effort of the public and private sector to simultaneously develop local businesses and engage in the attraction of high value-added FDI. The local and regional governments have been particularly active in this respect, which resonates well with the developmentalist attitude of the post-communist Polish governments. In contrast, cooperation in Cluj was restricted to the local private sector and the entry of foreign firms was not promoted by the city government.

Although both cities demonstrate a successful transformation of the local economy through foreign capital, the different paths that led to these outcomes explain why a significant part of Gdańsk's domestic non-tech segments are export competitive, while in Cluj local non-tech firms are more inward-looking. In Gdańsk, unlike Cluj, the local economy was not sheltered by a protectionist leadership, which exposed local SMEs to external competition at an early stage. The extreme nationalism and protectionism of the 1990s in Cluj allowed for the strengthening of informal ties between local firms, which grew without being exposed to external competitive forces. As a result, Gdańsk's business ecosystem has been competitive since the early years of transition, whereas in Cluj, this was only true for the technology sector, where companies founded by expatriates or local IT experts sought to attract foreign clients for their services.

As the paths of Gdańsk and Cluj suggest, FDI-led upgrading takes place in special circumstances in semi-peripheral contexts. The two cases share similarities in that they both had favourable local endowments in terms of industrial heritage, long-standing academic traditions, a cooperative civic culture, sustained political stability, and low financial dependence on, and often conflicted relationship with the central government. What makes Gdańsk and Cluj special in their national contexts is that they have been able to outperform cities with similar legacies in attracting high value-added FDI and in transforming their declining economies into knowledge-intensive hubs.

Replicating the success of Gdańsk and Cluj in other urban ECE contexts may be challenging, even if the initial structural circumstances are similar. In both cities, a socially embedded cooperative culture and entrepreneurial spirit, together with early transnational links with foreign companies made the difference and contributed to the upgrading of the local economy. In different ways, these intangible social assets led to the establishment of ties with knowledge-intensive foreign capital, resulting in FDI-led upgrading in both cities.

Notwithstanding the success of the two cities, there are several limitations and potential caveats to this research. First, as the two case studies show, FDI-led upgrading may take place in a limited number of locations, and the experience of the few positive examples may not be replicable elsewhere. Second, the arrival of large numbers of high-value-added foreign investors can create lasting local conflicts and tensions: both cities have experienced skyrocketing property prices, largely driven by high wages in the IT sector, and both cities face problems of urban congestion as the rapidly growing economy attracts domestic migrant

workers. Neither the downsides nor the sustainability of FDI-led upgrading have been fully explored in this paper; thus, these aspects require further research.

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Declarations

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