

Local investment promotion in a Hungarian medium-sized town and the implications of the COVID pandemic

Katalin Antalóczy

Budapest Business School,
Hungary

E-mail: antaloczy.katalin@uni-bge.hu

Imre Birizdó

Budapest Business School,
Hungary

E-mail: birizdo.imre@uni-bge.hu

Magdolna Sass

Center for Economic and
Regional Studies;
Budapest Business School,
Hungary

E-mail: sass.magdolna@krtk.hu

Tatabánya has been among the most successful Hungarian towns in attracting foreign direct investment (FDI), which now plays a determining role in its economy. Can already operating, foreign-owned firms, along with the attraction of new firms alleviate the negative economic consequences of the COVID pandemic? What other FDI-related policy options are available for the local government to handle the negative consequences of the crisis? This question is analysed based on publicly available information and interviews taken with representatives of the local government and industrial park. It shows that foreign-owned firms already operating in various industries and coming from numerous countries played a stabilising role during the crisis, especially in the labour market and local tax revenues, mainly because of the large-scale and diverse local FDI. However, this article also shows that local FDI is loosely embedded and shows limited signs of upgrading, thus its positive impact on Hungarian-owned local firms is limited. Further, new FDI projects initiated by non-local players due to the increasingly limited manoeuvring room of local authorities are assumed to increase the vulnerability of the town's economy due to their one-sided specialisation and contribution to low levels of embeddedness and upgrading. In addition, they may have negative local environmental and infrastructural impacts. Thus, in handling the negative consequences of the crisis, local authorities cannot rely on

attracting new projects, and those attracted by the central agencies have shortcomings from the point of view of handling the negative consequences of the crisis. Therefore, from the point of view of local authorities, a strategy aimed at increasing the embeddedness of FDI already present and fostering their upgrades may be fruitful.

Keywords: foreign direct investment, regional investment promotion, COVID-crisis

Introduction

The pandemic has placed a large burden on economies. Mid-developed open economies, such as Hungary, have been particularly affected. FDI plays a determining role in the Hungarian economy, and hence it can also be a solution to handle the consequences of the crisis. This may especially be the case for towns that have already been successful in attracting FDI. They have both experience and existing capacities built by foreign investors. Our analysed case, Tatabánya, is one of the most successful towns in Hungary in attracting FDI, which has been actively supported by the local government.

In this article, we analyse the following research questions: What are the impacts of the crisis on Tatabánya and how has the local government relied and may rely on FDI to handle the consequences of the crisis? How has existing FDI influenced crisis developments and their handling? How does newly attracted FDI influence this situation? In order to examine these questions, we first present a review of the literature and, second, our methodology. We then describe the history and main characteristics of FDI in Tatabánya. Next, we analyse the research question. The final section concludes the paper.

Review of the literature

Our analysis relies on numerous strands of the literature. First, FDI is of outstanding importance for Central and Eastern European (CEE) countries, especially Hungary. The importance of FDI for and impact on the host economies is widely analysed, with inconclusive empirical evidence, depending on the data, analysed periods, methods, and models used (Iwasaki–Tokunaga 2014). Another reason for the lack of conclusive evidence at the aggregate level may be that studies usually do not distinguish between types of FDI (Beugelsdijk et al. 2008), firm characteristics, economic conditions, policies, and institutions (Te Velde 2019), and between the sectors of FDI (Aykut–Sayek 2007). Based on the calculations of Alfaro (2003), manufacturing FDI has a positive impact on economic growth, whereas service FDI does not necessarily produce beneficial results. In the case of our study, the analysed town has been mainly subject to manufacturing FDI.

Connected to this strand of literature, the local impact of FDI is analysed in the ‘embeddedness’ literature (Andersson et al. 2002 or Józsa 2017 for Hungary) or theoretical and empirical studies about spillovers coming from foreign-owned firms to the local economy over time (e.g. Havranek–Irsova 2011). An empirical study by Elekes et al. (2019) should also be mentioned, which analysed the sectoral match between foreign-owned and domestic companies in Hungary and showed that foreign-owned firms usually deviate more from the location’s capabilities in the short run than domestic firms, especially in reindustrialised manufacturing regions, such as Tatabánya. In these cases, foreign-owned firms bring activities that are completely new to the town, benefitting from low-cost standardised production, and thus they have very limited positive spillover impacts on local firms because of the sectoral and activity gap between them.

Second, due to increased competitive pressure and opportunities brought up by technological developments and trade and FDI liberalisation, an increasing number of companies organise their operations internationally. The resulting structures involve an increased number of countries and cover several operational activities. These highly complex structures are called global value chains (GVC) (Gereffi–Sturgeon 2013, Kano et al. 2020). GVCs have proliferated in the global economy in recent decades. According to De Becker–Mirodout (2013, p. 8), ‘a global value chain involves all the activities that firms engage in, at home or abroad, to bring a product to the market, from conception to final use’. GVCs are now dominant in many industries (e.g. automotive and electronics). FDI and GVCs are highly interrelated: FDI, besides international trade, is the main defining feature and a key driver of GVCs.

Third, FDI and foreign-owned companies can play an important role in aiding the recovery effort against the economic problems and disruptions caused by the COVID pandemic (Kincses–Tóth 2020, Nyikos et al. 2021, Dániel et al. 2021). This increased role of foreign-owned companies is supported by the fact that foreign-owned firms are usually more resilient during the crisis than domestic ones (see e.g. Sass (2020) for the Visegrad countries). Furthermore, foreign-owned firms are more productive and innovative than their domestic counterparts and create a larger number of well-paid jobs, which also explains why they can contribute more during a crisis as well as during post-crisis recovery (for the Visegrad/CEE countries see e.g. Damijan et al. 2013, for an alternative view see Gál 2019). Additionally, foreign-owned companies are usually more financially stable, as multinationals support their affiliates and subsidiaries during and after a crisis if they get into a problematic situation (OECD 2020). For example, Alfaro–Chen (2012) showed based on experiences with previous crises that foreign-owned companies have access to the financial resources of their parent companies, thus they can show greater resilience during periods of crisis. This can be especially important in less-developed economies, with more unstable and weaker financial institutions. However, FDI may have shortcomings in addressing the crisis-related problems overall, as there has already been a decline in worldwide FDI flows before the pandemic, and further

decline is forecasted by UNCTAD (2021) and OECD (2020). Furthermore, reorganisation of the network of subsidiaries by multinational companies as a response to the crisis may lead to a fall in FDI inflows in certain countries and company closures in others. Additionally, low local linkages may result in reduced direct and indirect impacts and spillovers on the host economy and region, and thus, in a truncated positive local impact of FDI and foreign-owned firms. The rapid decline in FDI worldwide and the potentially positive role of FDI on host economies in terms of getting out of the crisis has resulted in increased competition for FDI (UNCTAD 2021). Furthermore, a reconfiguration of FDI networks is apparent after the 2008–09 crisis (Crescenzi–Imammarino 2017), which can be expected after the pandemic as well. This has increased the activities of investment promotion agencies (IPAs) worldwide (OECD 2020). However, many countries are aware that in crisis times, vulnerable domestic companies should be protected from hostile foreign takeovers and introduce restrictive measures in their FDI policies (UNCTAD 2021). Thus, FDI policies have undergone important changes during the crisis, whereby they have had to follow certain conflicting objectives: there is a need for more capital in crisis times, but at the same time, vulnerable domestic companies have to be protected from (hostile) foreign takeovers.

Fourth, the importance of increased FDI attraction calls attention to previous experience with FDI incentives and the role of IPAs. There is mixed evidence concerning the role of investment incentives and IPAs in attracting FDI, although, in the case of less developed countries, they are useful (Harding–Javorcik 2013). One aim of FDI policies and FDI incentives may be to reduce regional inequalities. Due to economic specificities, trying to ‘channel’ FDI in certain activities, sectors and regions and recent economic and political developments, IPAs underwent important modifications and there are different types of IPAs operating in the CEE region. The IPAs of the region can be characterised by different organisational approaches and different approaches to investment promotion. Szalavetz (2000) documented a gradual, hesitant but clear turn from centralised processes in investment promotion and regional development policies to decentralisation in Hungary. However, later studies (OECD 2018, Crescenzi et al. 2019) showed increasing centralisation in that respect. OECD (2018) ‘mapped’ the investment promotion agencies of the member countries along with various characteristics and they found that in the CEE region, Czechia and Slovakia are ‘basic prioritisers’, they tend to prioritise only sectors or countries; Poland is a ‘project centred prioritiser’ thus it also prioritises additionally specific investment projects. Hungary, along with Slovenia, is classified as a ‘super prioritiser’: it prioritises sectors and countries as well as projects and investors. In terms of their exclusion strategies, Hungary does not exclude projects, while Czechia and Poland are more selective and exclude certain projects. Slovakia and Slovenia are ‘non-excluders. This classification gives us an idea about the centralised nature of investment promotion, which is the highest in the case of Hungary. The high level of centralisation of the Hungarian system is also underlined by the fact that according to

OECD (2018, Figure 1.7), the number of mandates is among the highest in the Hungarian Investment Promotion Agency (HIPA), together with Czechia and Slovenia. The HIPA is characterised as moderately autonomous, together with the others from the region (except for Slovakia). Furthermore, it is considered to be a 'small generalist', with relatively limited staff but with a relatively large set of mandates (OECD 2018, Table 1.3, p. 34), offering a relatively large range of services in international comparison. The HIPA has nine 'sector targets' and tries to help and select certain countryside towns to attract FDI.

This development is actually in line with the organisation and focuses of the investment promotion agencies: the dominant level in investment promotion may change by country, the emphasis can be at the country level (centralised), at the regional or the town level. As the overall organisation of economic policy in Hungary has become increasingly centralised, this is increasingly reflected in the more centralised organisation and management of investment promotion as well. Both lower and higher (central) levels of organisations have their advantages and disadvantages. A central organisation may better respond to the requirements of large projects and 'moderate' the local specificities of towns to accept these large projects. At the same time, it cannot pay enough attention to local specificities and through a preference for certain regions or towns on non-economic grounds, it may choose a suboptimal location for a given (large) project. It may be less attentive to smaller-sized projects, which at the same time may be very useful for reviving the local economy by creating suitable jobs for locally available labour or investing in projects which are beneficial for the local economy. On the other hand, having a more dispersed organisation and giving more independence and emphasis to local specialised agencies may not help attract large projects, but at the same time, it may be efficient in attracting small-to-medium-sized investment projects, which are complementary to the localisation advantages available in the region or town. Only a few studies compare and analyse centralised and decentralised FDI promotion systems. An important study by Crescenzi et al. (2019) underlined that while there are national IPAs in the majority of countries, FDI promotion is increasingly performed by sub-national IPAs. As they put it: 'investment promotion is a multi-layered architecture that involves both national and sub-national organisations' (p. 4). Based on a new dataset, they show that European countries have different models, in line with the results of the OECD analysis: central IPAs (as Hungary or Czechia), only regional agencies, and both national and regional agencies (Poland). They found that regarding the efficiency of the activity of these agencies in attracting FDI, national IPAs have a limited role to play, either between or within countries, while the impact of sub-national IPAs is positive on the inflow of FDI. As they put it, 'regional IPAs are local organisations closer to the investor and its surrounding environment, and this proximity makes it possible for them to effectively influence investment operative conditions'. (p. 3) Dorożyński et al. (2015) analyse the role of local governments in attracting FDI in Central and

Eastern Europe based on the case of Lodz, Poland. According to their conclusion, local governments' activities in this area leave a lot of room for improvement. Thus, we can assume that in regional differences in attracting FDI, the role and efficiency of national and regional IPAs may also play a role. Furthermore, regulations and other institutions may also matter.

Fifth, the analysed town, Tatabánya, has already been examined from various aspects in Hungarian literature (Rechnitzer et al. 2019). According to the results of Koltai-Filó (2021), Tatabánya is among the top 15 most attractive towns in Hungary from the companies' perspective. The Central Transdanubia region excels according to its industrial structure and innovativeness. Tatabánya has been among the success stories of FDI-induced restructuring and growth in Hungary (e.g. Péter-Kalocsai (2003) mention it among the growth poles). Kiss (2001) pointed out the importance of industrial parks in the FDI attraction of Tatabánya. Baráth et al. (2001) showed that FDI played a determining role in the restructuring of Tatabánya's economy and that it was the only available way for such towns to get out of the transformation-related crisis. At the beginning of the nineties, large investment projects avoided Tatabánya, but small-medium sized FDI projects creating 30–150 jobs had already appeared, which was especially important because of the increasing unemployment rate due to the closing down of obsolete and non-competitive capacities. They underlined – besides other locational characteristics – the role of the local government in attracting FDI successfully, especially after 1996. They showed the history of the economy of Tatabánya, which suffered considerably after the transition process began, and how the local government tried to stabilise and then revive the local economy from the mid-nineties onwards. Interestingly enough, despite the efforts of the local government, it was mainly retail trade-related FDI that first came to the town. The first important manufacturing investor, Suoftec, arrived only in 1995. The role of local economic development agencies is of special importance. It carried out all the paperwork for the investors and acted as a kind of bridge between the local subsidiaries of multinationals and locally owned firms. The latter is especially important: they tried to help local firms become suppliers of foreign-owned subsidiaries. Baráth et al. (2001) also underlined the importance of the industrial park, not only in Tatabánya, but they showed that already operating industrial parks in geographically close towns and the availability of skilled and mid-skilled labour in these cities strengthened the attractiveness of Tatabánya to foreign investors. Three years later, Antalóczy (2004) reinforced the important role of local government, which has even increased further through the establishment of a specialised agency with an experienced leader, who had just returned from abroad. She also underlined the role of an ambitious mayor, who recognised the importance of attracting FDI to a relatively backward industrial town, which was hard hit by the transition process due to its high reliance on industrial activities. At the same time, in 1992, a college was established, which included the marketing aim of providing skilled workers to projects. Furthermore,

the mayor used various opportunities for this purpose (study tour to Belgium visiting industrial zones; feasibility study prepared with the support of a British foundation on the economic revival of the town and benefitting from the aid program of the Canadian government by inviting Canadian experts to prepare an economic development program and provide related training). There have been important steps taken to attract foreign investors to the location, which paid out: Antalóczy (2004) showed that attracting a few ‘blue chip’ investors (the already mentioned ‘first mover’ the USA–German, automotive supplier, Suoftec) in itself acted as a magnet for other FDI.

Methodology

We present a detailed case study of a countryside town in Hungary. ‘Case study is the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances’. (Stake 1995, p. xi) We chose this approach because it is amongst the most flexible research methods. With its help, we can illustrate and analyse our research problems, although the generalisation of the results is limited. However, we can present many details and trace previously neglected connections between various facts and factors.

While preparing the case study, we relied on multiple sources of information. We collected and analysed the related literature and consulted publicly available sources (internet and balance sheets) on the investor companies and their subsidiaries in Tatabánya. We could also rely on expert interviews taken with the present mayor and other representatives of the local government and the local industrial park. Three interviews were conducted between January and March of 2021. We obtained the data on local taxation. Two of the three authors of the present article have extensive experience working with the local government and the agency, with one foreign-owned company and a local college.

The case of Tatabánya

Tatabánya is located in the Central Transdanubian NUTS2 region in Komárom–Esztergom County. The region is highly specialised in manufacturing; it is ranked second in that respect in the European Union (EU) behind the Irish Southern region (Eurostat 2020, p. 92). Komárom-Esztergom County relies to the largest extent on manufacturing activities in Hungary, and in 2018, 50% of the value-added came from manufacturing (KSH 2021a). The county is among those with the most significant level of industry (Kiss–Nedelka 2020). Within the county, there are three ‘town-hubs’ of industry: Tatabánya, Esztergom, and Komárom. The county, and within it, Tatabánya was highly industrialised, even in the planned economy period. This industrial tradition and specialisation have been maintained and strengthened through attracting manufacturing FDI projects.

The history of attracting FDI to Tatabánya

Tatabánya has a long history of attracting FDI (Baráth et al. 2001, Antalóczy 2004). At the start of the transition process, smaller-sized FDI projects had already arrived there, and larger ones followed during the nineties. The local government realised quite early, that for a town, which had many outdated industrial capacities inherited from the planned economy and which relied on mining and ‘sunset industries’, it is of crucial importance to support the establishment of new capacities and help the restructuring of the existing ones. However, local financial sources, technology, and management knowledge were essentially non-existent, which turned the attention of the local government to foreign firms – who, on the other hand, just started to discover Hungary as a potential site for their investments, as it is in close proximity to the developed part of Europe with relatively good infrastructure, relatively cheap and skilled labour, and open arms toward foreign investors (Table 1). The result was a substantial inflow of FDI to the town.

Table 1

Location advantages of Tatabánya from the point of view of FDI

Group of location factors	Tatabánya-case
Spatial distribution of natural and created resource endowments and markets	Spatial proximity, resource endowment: obsolete, except for labour; evolving market with consumers with increasing disposable income
Input prices, quality and productivity	Relatively cheap and relatively skilled labour with precedence in industrial activities
International transport and communication costs	Relatively low: proximity plus developing infrastructure over time
Investment incentives and disincentives	Central and local present, relatively generous in regional/cross-country comparison
Artificial barriers to trade	Low in cross-country comparison
Infrastructure provisions	Relatively good and developing in cross-country comparison (motorway)
Cross-country ideological, language, cultural, business, political differences	Relatively low differences due to common history, culture, the role of socialist past decreasing
Economies of agglomeration and spillovers	Increasing over time as suppliers follow lead firms, but low in terms of local embeddedness
Economic systems and strategies of government; institutions	FDI plays an important/dominant role in the development path
The legal and regulatory system	Evolving market economy environment, then operational market economy environment

Source: own compilation based on Dunning–Lundan (2008, p. 101–102), Antalóczy (2004), Baráth et al. (2010), Sass (2020), and interviews.

We can distinguish six distinct phases in the FDI attraction of Tatabánya (Figure 1), based on three factors: changes in the regulatory environment in general (FDI policies in the wide sense); changes in the regulatory environment in particular (FDI

policies in the narrow sense); and changes in the world economy or the industry environment. Thus, two regulatory factors and one external 'business or industry cycle' factor were of determining importance for the FDI attraction of the town. Overall, there was one 'permanently positive' factor: the approach of the local government has always been open and proactive.

Besides these policy factors, the various analyses underlined others, which permanently made the town an important target for FDI. These include the geographical location of the town, its developed transportation and overall infrastructure, and the availability of a skilled/experienced industrial workforce with low wages (Baráth et al. 2001, Antalóczy 2004). Based on our interviews, the relative importance of these factors changed over time. At present, for example, geographic proximity to customers and partner firms for e-car investors play an important role.

Figure 1

Phases of FDI in Tatabánya Industrial Park/Tatabánya Inpark



Source: own compilation based on the interviews.

The six phases of the FDI policies (Figure 1) were built on each other. The first phase is about learning and experimenting, concentrating on smaller projects, and trying to attract a large 'blue chip' project to the town. Based on the experience and success of the first phase and the changing environment, where Hungary had been

placed increasingly ‘on the radar’ of foreign investors, the second phase brought with it a more solid institutional base for attracting FDI (the local industrial park) as well as further large ‘blue chip’ investors, who could attract other investors to the region. In phase three, there was a setback due to the high level of specialisation in electronics. In the fourth phase, EU accession resulted in a diminished manoeuvring room for institutional players, but this was compensated by the increased interest of foreign firms. In the fifth phase, the manoeuvring room for local actors diminished further, but additional investments and capacity extensions compensated for this. In the sixth phase, a new non-local actor appeared, and the turn towards e-cars also impacted the inflow of FDI, resulting in a new specialisation. The importance of regulatory factors calls our attention to the importance of various institutions that play a role in the FDI policy of the town.

FDI in Tatabánya

Central Transdanubia, and within that Tatabánya, is among the regional ‘hotspots’ in attracting FDI between 2003 and 2014 (Crescenzi–Iammarino 2017). Pre- (2003–8) and post-crisis (2009–14) periods compared, the region is among the best performers in Hungary, and a ‘mid-performer’ in Europe. The town has been among the most successful countryside towns in Hungary in terms of attracting FDI projects (Baráth et al. 2001, Antalóczy 2004). (As in other countries, the largest FDI stock is recorded in the case of the capital, Budapest (Antalóczy–Sass 2005, Gál 2019; Gál–Schmidt 2017).) The lack of regional and town-level statistics is an important barrier to assessing the relative position of Tatabánya in the Hungarian comparison. However, according to our estimation based on the capital of FDI projects operating in the industrial park, the total stock of FDI is at least 2 billion EUR. This represents 2.4% of the total FDI stock in Hungary in 2019. Compared to the share of Tatabánya in the total population of Hungary (0.8%), the relative success of the town is obvious. We can also rely on the list of individual government decisions projects, which refer to both greenfield FDI and capacity extensions supported based on the case-by-case decision of the government after 2004. These projects are predominantly FDI-related. Among 87 such projects between 2004 and 2010, six found their homes there – the highest number among the non-capital towns in Hungary, indicating its relative success. Thus, Tatabánya is an excellent representative of the FDI-based growth strategy at the town level, which is important in Central and Eastern Europe.

Main characteristics of FDI in Tatabánya

Tatabánya attracted a special group of FDI. There has been a dominance of manufacturing FDI, though within that, until 2017, activities covered various industries (Table A1 in the Annex). The very first, medium-sized project arrived in 1989 from neighbouring Austria: Alpha is a well-known family-owned plastic

packaging company. The presence of this company had an impact on further FDI inflows, as it produced innovative packaging for companies operating in chemicals, food, and other industries. A similarly important event was the arrival of SUOFTEC, the first large project in 1995.

Owing to the dominance of automotive-related and electronic projects, we can assume that Tatabánya is highly integrated into various GVCs. In addition to manufacturing, there is some FDI in services serving manufacturing plants, such as logistics or warehousing. Thus, the dominant share of activities can still be placed at the bottom of the smiling curve. In addition to new projects, extensions of existing capacities are important sources of FDI (Table A1 in the Annex), showing that the business and overall environment are appreciated by investors and that they plan long-term.

After 2017, a clear dominance of e-car-related investments has been observed. According to the interviewed experts, this may result in over specialisation in one low value-added activity and thus increased vulnerability to changes in business cycles and these activities have a relatively high negative environmental impact (high water use, high sewage load, and energy consumption) compared to previous projects. However, the town will become a long-term strategic participant in the electric vehicles (EVs) technology revolution and in the circumstances of the pre-pandemic labour shortage, the modest need for these projects for workers is beneficial, as well as the relatively high share of high-skilled jobs created (around 20% of total jobs).

The nationalities of investors were quite dispersed until 2017. In terms of the number of investors, Germany was leading, followed by the USA, Austria, Japan, Denmark, Canada, South Korea, and Spain. Three Austrian projects operate in Tatabánya, and the first FDI project also arrived from this neighbouring country. Denmark was relatively important – it seems that the good experience of one investor positively impacted follow-up investments and other Danish investors. Danish projects created the largest number of jobs (surpassed by only one USA company). After 2017, there was a clear dominance of South Korean investors, leading to a decrease in the level of diversity according to the investors' home countries, thus making the town more vulnerable to business cycles of one home country locally investing the FDI.

Embeddedness and local contacts of foreign-owned subsidiaries and upgrading

The establishment of a local college was promoted and supported by the local government and mayor. As a longer-term goal, the college was to ensure the supply of graduated workers, to establish a scientific basis and thus to contribute to economic development, to the embeddedness of foreign-owned firms, and the upgrading of the activities of companies participating in GVCs (both foreign and

domestic). The first ten years of operation of the college with an economic profile was successful; in 2001, its annual student ‘intake’ was more than 1300 students [1]. Since 2003, there has been a gradual decrease to 500-600 students per year. In 2011, the college merged with another one, taking 1000 new students that year. After a gradual decline, in 2020, only 148 new students began their studies there. Around ten years ago, engineering-technical training was also offered to fulfil the skill requirements of firms operating in the industrial zone, but this could not attract significant interest. Partly due to these changes, according to the expert interviews, the link between the town and the college is weak.

The spillover impacts of FDI in Tatabánya (Antalóczy 2004), were limited because of the greenfield entry mode; the investors kept their original (foreign) suppliers and operated as a kind of ‘island’ in the region. Our interviews reinforced that the links to the local economy at the beginning were limited to simple services, such as cleaning, catering, and horticultural services. Since 2000, there have been multiple changes: the broadening of these links and, in certain cases, significant deepening occurred. Within services, new activities emerged: passenger transport and transportation of goods and logistics services. Passenger transport has become an important activity, whereby local and country-wide Hungarian-owned companies are the key players, and they cover a wide range of activities from luxury transport (between the town and the airport) to everyday transport of workers to their workplaces. Similarly, in the transportation of goods and logistics, there is a considerable increase in related investments in industrial parks, such as Trans-Sped Ltd., in Hungarian family ownership with 156 employees or Ho-Máhr Trans Ltd. with 30 workers. Individual services previously offered by small and medium-sized enterprises (SMEs) (e.g. cleaning or lawn mowing) were replaced by facility management services, including the full technical monitoring of the facility, cleaning, maintenance, servicing, guarding, operational services, provided by Hungarian firms.

There have been developments in local supplier linkages as well since around 2004–2005, as our interviews indicated. Certain Hungarian-owned firms could get engaged in supplying tools, raw materials, and components. They are usually at the bottom of the supplier pyramid, carrying out the simplest activities. While foreign suppliers also come to Hungary with FDI, they usually offer more complex activities; thus, upgrading local firms is difficult. However, local companies from Tatabánya are not truly present among local suppliers.

In terms of upgrading, activity data of the local FDI projects (Table A1 in the Annex) hint at slow movement up the value-added ladder. For example, Sanmina-SCI originally concentrated on manual and automatic, high quantity low value-added assembly, carried out by semi-skilled workers and later installed high-tech assembling robots (see Kiss–Tiner 2021). At present, it has added some high-skilled activities, such as planning and design. Becton Dickinson added an R&D unit to

local activities, where the testing and development of reagents is carried out. Thus, upgrading is mainly functional with new services projects, in addition to product and process upgrading with more complex activities. Other companies still employ semi-skilled workers and technicians and concentrate on the low-value-added segments of the value chain. This could be one reason for the limited contact and links with the local college.

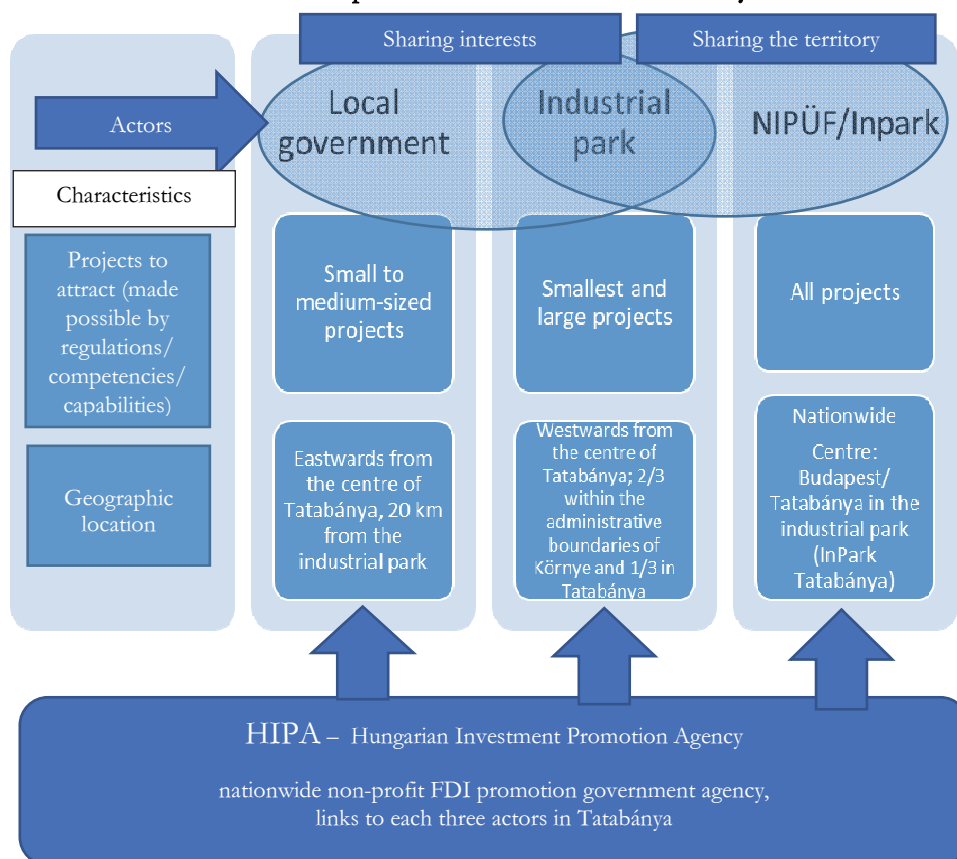
Main actors in the FDI policy of Tatabánya

In the FDI policy of Tatabánya, there have been many changes in the regulatory background (Figure 1) and in the most important actors (Figure 2). The local government and then the local industrial park played a leading role in attracting FDI. National Industrial Park Management and Development Company (Nemzeti Ipari Park Üzemeltető és Fejlesztő Zrt. – NIPÜF) is a centralised organisation, which was established in 2015 to coordinate and create a network of inparks in Hungary. There is now thus another local player, the local ‘arm’ of NIPÜF, Inpark Tatabánya. It is an ‘industrial property group focusing on developing logistics centres, manufacturing halls, and warehouses for Hungarian and international clients, offering standard and built-to-suit facilities for lease, as well as development lands for sale’ [2]. To this end, inpark can take already developed areas from local industrial parks and develop sites and facilities in existing industrial parks. That happened in Tatabánya as well: Inpark Tatabánya is the local ‘outlet’, which occupied already developed territories within the boundaries of the existing local industrial park. The fourth player is HIPA, the central organisation, which acts as a one-stop shop for foreign investors and offers them multiple sites in Hungary.

The relative importance of these actors has been changing from time to time (Figure 1), although the local government and later on the local industrial park have always been welcoming and supportive of foreign investors. In the first phase, it was exclusively the local government, which was active in attracting FDI, and in the second phase, it was joined by the local industrial park. Both organisations represented the interests of the town and worked in close cooperation with each other. HIPA brought various potential investors to these organisations from time to time. However, the regulatory environment has gradually deteriorated, making the manoeuvring room of these two local actors increasingly limited. In the sixth phase, the third actor, NIPÜF or Inpark Tatabánya appeared. It represents the interests of the town to a much lesser extent, cooperates to a limited extent with the two local actors and takes over certain activities and capacities from the local industrial park. This is in line with the centralisation tendency in the FDI policy in Hungary, affecting other industrial parks (e.g. Győr, Tatabánya, Komárom, Szentgotthárd) as well.

Figure 2

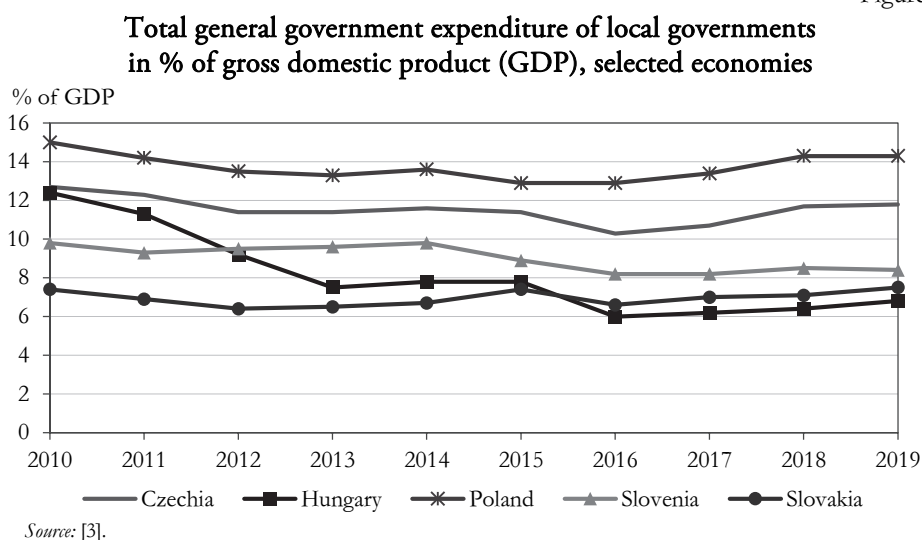
Competencies of and discrepancies between the main actors of investment promotion and HIPA in Tatabánya



Source: own compilation based on the interviews.

Overall, the maneuvering room of the local governments in Hungary, including Tatabánya, started to decrease considerably first, in 2004 (due to stricter regulations, and as a result of Hungary's EU accession) and later after 2010, due to a fiscal centralisation tendency. Local governments have fewer competencies, and their financial means have narrowed considerably (Figure 3).

Figure 3



The impact of the COVID-pandemic on Tatabánya and FDI

The economy of Tatabánya has been completely transformed, mainly due to FDI. The town's economy is highly reliant on manufacturing FDI. Besides the positive impacts, this specialisation introduced a vulnerability in the local economy: during the COVID pandemic, the fall of industrial production was the largest in this county (KSH 2021b). However, our interviews revealed that the pandemic-related economic crisis affected the companies differently: automotive and electronics firms were hit hard, they had to reduce their workforce, while Coloplast and Becton Dickinson, producing medical products or Grundfos, producing products for environmental protection were not affected; they even recruited new workers. In that sense, the diversified composition of local FDI stock in terms of activities proved to be beneficial.

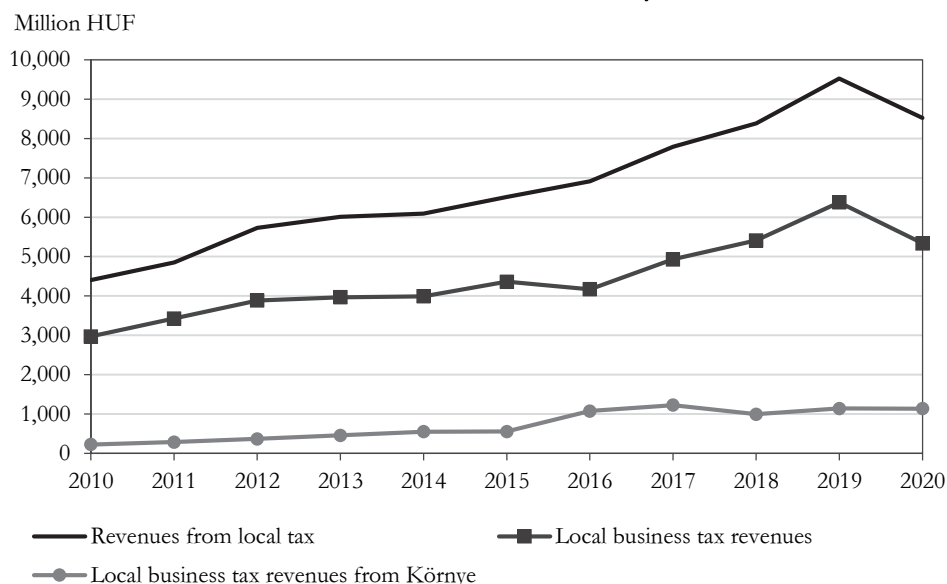
To assess the impact of the crisis, we rely on revenue data from local taxes. Between 2010 and 2019, revenues from local taxes continuously increased (Figure 4). Revenues from local business tax (iparüzési adó) are important. Their share in the total budget of Tatabánya between the 1990s and 2003 had been 70–80% (Antalóczy 2004). In 2010, this share represented 68% of total tax revenues; however, since then, tax revenues from the Környe industrial area have been added.¹ The share of local business tax revenues in the total budget of Tatabánya declined slightly to 62–67% by 2019–2020, according to the information gained

¹ The area of the Tatabánya Industrial park extends beyond the frontiers of Tatabánya to the neighbouring Környe. There is an agreement between the two local governments, according to which 60% of local business tax revenues from the Környe area of the industrial park belongs to Tatabánya.

from the interviews. However, this was still the most dominant item. Tracing the share of Környe is important, because in this area there are only large FDI-related projects, while in the overall tax revenues of Tatabánya, we can find many local SMEs. In 2020, when the various impacts of the COVID-pandemic emerged, unemployment increased and tax revenues from local firms decreased. As a result, the total local tax revenues fell by 10% compared to 2019. Within that, local revenues from business tax in Tatabánya fell by 17%, while revenues from Környe did not change because firms operating there were less affected, showing that large foreign-owned subsidiaries weather the crisis much better than their local counterparts. The situation has been very similar during the COVID-pandemic.

Figure 4

Local tax revenues in Tatabánya

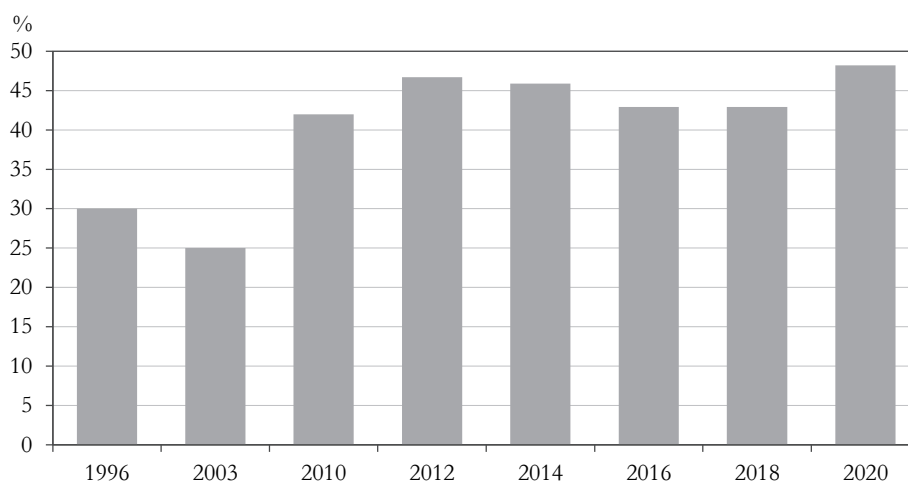


Source: Local government of Tatabánya.

The level of tax revenue concentration in terms of the number of taxpayers again indicates the importance of FDI. (Figure 5) The share of the top ten taxpayers (all foreign-owned firms) increased gradually to close to 50% by 2020.

Figure 5

The share of the top ten taxpayers in total tax revenue in Tatabánya



Source: Antalóczy (2004) and local government of Tatabánya.

Thus, the importance of foreign-owned subsidiaries from the point of view of stabilising the town in terms of demand for labour and providing local tax revenues increased considerably in the crisis year.

In the present crisis, numerous questions emerge in connection with the role ‘new’ (arrived after 2018, not fully operational yet) and ‘old’ FDI can play and if FDI can help the town’s economic recovery. As the interviewed experts and data indicated, foreign-owned firms acted as ‘stabilisers’ on the labour market and local tax revenues in the crisis, thus already existing FDI projects helped the town significantly. However, this diversity of FDI seems to decrease gradually, as new, centrally promoted projects are almost exclusively related to the production of e-cars. Another weakness comes from the low level of diversification toward services, and new projects again strengthen this one-sidedness. Furthermore, limited upgrading over time indicates that FDI is still attracted to Tatabánya mainly because of its cheap mid-skilled labour force, which is close to exhaustion. The increasing but still low levels of local embeddedness and local links of FDI make it easily separable from the local economy and thus potentially footloose. As for the new projects, due to their activities and newness, they will have a very low level of local embeddedness and contacts. Thus, we assume that while the diversity is low, the increasing level of local embeddedness of existing projects has been helpful from the point of view of weathering the crisis. Centrally induced large projects may decrease this level of diversity and thus make the town’s economy more vulnerable.

In terms of attracting further projects or inducing existing ones to extend their capacities, the gradually and increasingly reduced maneuvering room of the local

government and the industrial park was highlighted. This is especially problematic as these actors attract projects that fit local specificities much better and have less negative economic, environmental, or societal consequences compared to the centrally attracted ones. This is all the more important, as based on European experience, FDI promotion works better and more successfully at the subnational level (Crescenzi–Iammarino 2017)

However, local actors (such as the local government, local organisations, and associations) may have other opportunities, such as trying to help the embeddedness of foreign-owned companies by helping local firms and other local actors (e.g. the college) to become suppliers or partners of the former. In that respect, the accumulated knowledge about local specificities is undoubtedly an asset. As in many other parts of Hungary, local SMEs do not have the abilities and capabilities to become involved in the local network of foreign-owned subsidiaries – some (not all) of these abilities can be learned. Furthermore, the differences in the activities of local and foreign-owned firms underline the problem raised by Elekes et al. (2019). In that respect, the new projects again hide a trap as they hardly use any suppliers in the first stages of their operations, and due to their products, this may also be the case later on as well.

Conclusions

FDI plays an outstanding role in the economy of Tatabánya due to its relatively long and successful history of attracting FDI. Mainly, foreign-owned manufacturing firms operate there. They provide the majority of jobs for local people and the majority of the local government's tax revenues. However, their links to the local economy are limited, and their upgrades over time are quite slow.

First, the already present FDI played a stabilising role during the pandemic. Foreign-owned firms weathered the crisis better than domestic ones, and they were affected by the crisis to a different extent; thus, better-performing firms could take over employees from worse performing ones and make up for the local tax revenues lost because of the latter. Second, new FDI projects or extensions of already operational ones may also help towns.

However, compared to the previous years, the manoeuvring room of local players (local government, local agency, local industrial park) for attracting projects has decreased substantially. On the one hand, a substantial centralisation of FDI attraction occurred after 2010. On the other hand, local governments also lost revenue from the central budget. Thus, both organisationally and financially, they have less maneuvering room. However, large projects, centrally allocated here, still arrived. The main problem here comes from the fact that centrally allocated projects pay little attention to local specificities, as is the case for Tatabánya. Due to their largeness, they reduce the diversity of local FDI, making the town more vulnerable

to business cycles. Furthermore, reinforcing the findings of Elekes et al. (2019), these new projects have less potential for spillovers due to their activities but may have negative impacts on the local environment. The case of Tatabánya illustrates that excessively centralised FDI attraction policies may pay little attention to local specificities and thus may result in suboptimal local spillovers and other positive impacts. This is especially problematic in crisis environments. Thus, local authorities may concentrate on increasing the embeddedness of FDI already present and fostering their upgrades.

The limitations of our research come from the fact that we concentrated on the examination of one case. Furthermore, this town represents a successful case in terms of attracting FDI in Hungary; thus, other towns with fewer resources, with a much lower number of foreign projects face completely different problems and cannot rely on FDI in alleviating the impact of the COVID-crisis. A future research direction would thus include the analysis of other similar and dissimilar cases. Furthermore, the circumstances of the COVID pandemic and related economic crises brought the concept of resilience to the fore. While in Hungary the analyses are rare in that context, in other countries, detailed complex indicators are elaborated to assess the resilience of regions and, based on that, the modifications and adaptation of policy responses in recovery from the crisis (see e.g. Sensier–Devine 2020 for UK regions). This approach may also be fruitful in helping local governments develop new institutional arrangements and diversify their economies in a way that fits the local environment more. Future research may also consider this avenue.

Annex

Table A1

Foreign direct investments in Tatabánya

	Company name	Activity	Natio- nality	Start of operations	Number of employees
Companies in the Industrial Park					
1.	ALPLA Plastic Packing Ltd.	Productions of plastic packaging material	Austrian	1989	90
2.	EXEDY DYNAX Europe Ltd.	Coupling production	Japanese	1993	250
3.	OTTO FUCHS Hungary Ltd. (SUOFTEC)	Aluminium wheel production	German	1995	530
4.	SINBON Ltd.	Production of electric parts and equipment	Austrian	1996	238
5.	Aptiv Connection Systems Hungary Ltd.	Manufacture of electrical cables and adapters	USA	1999	2100
6.	Grundfos Hungary Manufacturing Ltd.	Production of electrical motors and water pumps	Danish	1999	1500
7.	Aalberts Surface Treatment Ltd.	Metal surface treatment	German	2000	136
8.	Coloplast Hungary Ltd.	Production of sticking-plasters, incontinence bags, breast implants, colostomy bags	Danish	2001	1500
9.	AGC Glass Hungary Ltd.	Autoglass production factory	Japanese	2005	937
10.	BECOM Electronics Hungary Ltd.	Electronic developments	Austrian	2006	142
11.	Bridgestone Tatabánya Ltd.	Production of high-performance tyres	Japanese	2006	1200
12.	Celo Hungária Ltd.	Automotive and electronics distribution industry for connecting elements	Spanish	2008	9
13.	Becton Dickinson Hungary Ltd.	Syringe production	USA	2009	900
14.	Lotte Advanced Materials Hungary Ltd.	Production of plastic parts for automobiles, LCD TVs and mobile phones	South Korean	2011	94
15.	Henkel Hungary Ltd.	Adhesives manufacturing	German	2011	200
16.	Crown-Mivisa Hungary Ltd.	Tin can production	USA	2012	52
17.	Rudolph Automotive Logistics Ltd.	Logistics	German	2013	140
18.	Ferdinand Gross Hungary Ltd.	Warehousing and sale of screws	German	2013	27
19.	Coloplast PDC	Coloplast Hungary's logistics centre in Tatabánya	Danish	2017	500
20.	Volta Energy Solution Europe	Manufacture of copper foil for batteries for Electrical Vehicles	South Korean	2020	180
21.	Lotte Aluminium Hungary Ltd.	Manufacture of aluminium foil for batteries for Electrical Vehicles	South Korean	expected start 2021	na

(The table continues next page.)

(Continued.)

	Company name	Activity	Natio- nality	Start of operations	Number of employees
Companies in Inpark					
1.	Soulbrain Hungary Ltd.	Manufacture of chemical Products (electrolyte) for batteries for Electrical Vehicles	South Korean	expected start 2021	na
2.	OTTO FUCHS Hungary Ltd.	Manufacture of aluminium car parts	German	to be decided	na
Companies outside of the Inpark					
1.	SCS Stahlscmidt Cable Systems Ltd.	Production of bowdens, hauling cables	German	1991	300
2.	Still Ltd.	Wholesale of forklift trucks	German	1992	100
3.	Dinox-H Ltd.	Production of steel vessels	German	1994	40
4.	Reckitt Benckiser Tatabánya Ltd.	Production of washing powder	USA	1996	1000
5.	Sanmina-SCI Hungary Ltd.	Assembling electronic parts for computers and telecommunication	USA	1998	1400
6.	CCL Design Hungary Ltd. (Worldmark)	Labels, labelling systems manufacturing	Canadian	1999	40
7.	Scepter Tatabánya Ltd.	Production of aluminium	USA	2011	100

Source: own compilation based on the information from the interviews.

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