(Re)birth of a twin city. Hinterland analysis in the region of Esztergom-Štúrovo

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Abstract

The study examines the current developments in the hinterland of the cross-border twin city, Esztergom–Štúrovo. It also suggests a gradual interweaving of the hinterlands of these previously separate cities that had been in a peripheral situation due to the State Border and thereby it suggests a process that enhances the twin city's spatial organisation power. In brief, the effects of border changes on spatial structure, the gravitational power differences between Esztergom, Štúrovo and the regional centres will be examined. Furthermore, a concise analysis of the two states' socio-economic situation after EU accession will be presented regarding the situation of both sides of the Hungarian-Slovak border. The main method of the research is to present gravity models.

Keywords: Esztergom, Štúrovo, twin city, Ister-Granum EGTC, cross-border hinterland, gravity model

Introduction

Providing better social, economic, legal etc. interoperability across the EU's internal borders is one of the most crucial prerequisites for the development of greater European territorial cohesion. It is not possible to realise any large-scale initiative in border-regions without having at least an indirect effect on the other side of the border or without being at least indirectly dependent on the developments of the other side (Illés 2002).

Large landscapes, like the Carpathian Basin (which practically surrounds both sides of the Hungarian borders), are frequently home to a mosaic of spatial structure distorted by social isolation and this dual peripheral nature is a negative consequence for all parties (Kovács 1990). Regional centres are in many cases on one side of the border, while parts of the gravitational area now belong to the other side of the border (Győri 2006). This results in the formation of specific



regions that artificially lack cities on both sides of the border and in some serious cases, they have come to a halt and lag behind their more rapidly developing counterparts. In some less serious cases, the establishment of new and gap filler centres are promoted or are forced to come about (just like in the case of Štúrovo).

Apart from geographical and historical constraints, borders break spatial continuity in social, economic and transport aspects as well, and they form a hindrance to spatial relations and spatial interactions (Nárai, Rechnitzer 1999). Hungarian borders have so far proved to be real and major barriers for both sides of the border from geographical, historical, ethnic, social, economic and transportation points of view as well. The success of cross-border cooperation can thus have positive effects on the future of the whole region and on achieving far-reaching purposes of territorial cohesion.

These types of cooperation therefore have special significance in the region. The frequent bottom-up regional cooperation can be exempt from political constraints and thus its stakeholders are able to focus on social and economic questions that may be beneficial for both parties (Illés 2008). Additionally, intermunicipal cooperation can facilitate the access to funding that can be used for the settlements' individual purposes. These local initiatives have a strong potential to heal the wounds that have been created by history alongside the borders, and more importantly they can give a new face to the European integration processes (Joenniemi, Sergunin 2011).

Cross-border regional development and cross-border social aspects have particularly sensitive common points: these common points are the twin cities that evolved in an environment without dividing administrative functions (Schultz 2002). EU practices have the potential to bring these cities together again after decades of forced separation. The region of Esztergom-Štúrovo is a suitable example of this practice and this makes it an ideal case study to observe the EU's inner, cross-border territorial cohesion.

As part of a collection of studies aiming at revealing the cross-border relations in the twin city and its region, this analysis seeks to point out how the twin city's theoretical hinterland has developed and what its current state in according to applied socio-physical models. The author is certainly aware of the inherent constraints of this purely theoretical approach; however, the core purpose of the examination was to theoretically complement other research foci, including those focusing on mapping the spatial habits of the region's population. Thereby the conclusion drawn can be more complete and coherent for the Reader.

Database; research methods

The collection of reliable data and the selection of appropriate methods proved to be the most difficult tasks during the research. It is therefore essential to briefly introduce the problems associated with the data and the methods of analysis, together with the resolution mechanisms developed for these problems.

The first issues arising in the preparation of the analysis were the delineation of the study area and the selection of competing centres that are counter-poles to Esztergom-Stúrovo. Geographical location helped facilitate the designation of the area: 11 counter-pole cities around the twin city mark the external borders of the area. These cities all follow the Esztergom-Štúrovo-centred circle of 50 km in radius and they are all equal counterpoints in space as far as their importance and function is concerned. The counter-poles are the following: Tata, Tatabánya, Bicske, Budapest, Vác, Rétság, Sahy, Levice, Nové Zámky, Komárom and Komárno. It is important to discuss a few issues arising at this point. First, even though Rétság is significantly smaller than Esztergom-Stúrovo, its special physical and settlement geographical conditions make it an important city and a more realistic counterpoint than the more distant Balassagyarmat, even if Balassagyarmat is on a similar level of urban hierarchy as Esztergom-Stúrovo. Next, the problem with Budapest was its oversignificance in the region. It was resolved in the interpretation of the methodology. Lastly, Komárno-Komárom, just as Esztergom-Stúrovo, is going to count as one city in the calculations.

As the region is currently located on the territory of two states, one of the main difficulties was to make the indicators from the two national statistical offices consistent with one another. While abundant data was available from the Hungarian side, lack of information and differences in settlement level data were common on the Slovak side. After all, we concluded that the selected standardised indicators contain sufficient reliable data for this analysis to be carried out.

The methodology toolbox had to be developed on the available data to be able to answer the original questions in the best way possible. Based on several completed works with similar scope (e.g. Stewart 1948; Converse 1949; Dodd 1950; Bajmócy–Kiss 1999; Győri 2006; Jaschitz 2010), it is more or less accepted by professionals that standard population size can lead to reasonable conclusions concerning the spatial position of cities and villages. The very analysis of demographic changes, the shift of the population's centre of gravity and the distances between settlements can already imply the current system of relationships and the hierarchy among them. If, however, the two factors (location and "size") are jointly considered, gravity models, developed especially



Changes in the representation of a borderscape The case of the Mária Valéria bridge

for this case, allow for excellent modelling opportunities. The basis of Reilly's formula (1929), used in spatial research, is the following: the attractiveness of centres is directly proportional to their size and inversely proportional to one of their distance's powers. The model allows the theoretical comparison of the directions of physical spatial interactions, especially those directions that cover administratively unfixed areas meaning that subjects freely choose where to go (Bajmócy, Kiss 1999; Tschopp, Fröhlich, Keller, Axhausen 2003). Attractiveness does not only depend on the availability of potential centres. In many cases, it also depends on the range of services and products available or also on quite a few of often incidental factors. Still, theoretical models can provide a good basis to assess the role of these factors in designing real spatial organisation/relation systems. After having considered different options, we decided to use the gravity model with Reilly's formula. By considering the mass of two centres and their distance, this method indicates the point where differences in attractiveness will disappear. In other words, it reveals the borders of their hinterlands (Dusek 2005; Bhattacherjee 2012). In the case of Esztergom-Štúrovo, its theoretical hinterland can be determined if the attractiveness of the 11 surrounding counter-poles are contrasted with the attractiveness of the observed twin city, and then the calculated coordinates are aligned. In our approach, road distance is the distance to be considered and mass always means the population size. This is particularly important for us since geographical conditions (e.g. difficult approachability of the Danube and Ipoly rivers, or the Börzsöny Mountains) in many cases result in a significant difference between the theoretical distance "as the crow flies" and the actual distance when driving. When calculating the distance when driving, we excluded river transport options where ferries operate (since they only play a limited role even in everyday contacts). Only bridges have been considered. In all cases, our key objective with the method was to ensure that the centres' theoretical level of attractiveness on neighbouring settlements and the actual territorial relations approach each other as much as possible. The results of the models were represented graphically on maps.

These models and the obtained results are not exact "facts of attractiveness" that can be paired with settlements, but factors indicating proportions and trends. Another shortcoming is the fact that only one type of relationship is considered, while "soft factors", playing an important role in regional cohesion (e.g. labour mobility, migration, regional and historical tradition-based cohesion, shared identity, mental maps etc.), are not. These methods are thus only an attempt (though scientifically accepted) to present actual spatial relations.

Figures of the current chapter are based on the author's own research and they were designed by Éva Gangl.

Theoretical analysis of spatial structures in the border region

Over the past decade, a specific form of reorganisation has been taken place in the border areas of the Carpathian Basin on territories that had mostly lost their natural relations and had severely distorted spatial structure.

This description is accurate for Esztergom and its wider urban surroundings as well. It is also a small region which is characterised by a specific unity, an organic interconnectedness from both geographic and historical perspective. What is more, the percentage of Hungarian population in the neighbouring Slovak region is relatively high (Sikos–Szarka 2008). Throughout the observed region, the percentage of people speaking Hungarian when big cities are included is above 50%, while in the case of several settlements this percentage is above 90% (Kocsis–Bottlik–Tátrai 2006). Moreover, even though the Slovak minority living on the Hungarian side of the border, e.g. in the Pilis Mountains is relatively small, but from the aspect of interethnic understanding their role cannot be overlooked. Hence cooperation is not hindered by language or ethnic/cultural barriers.

Although the region is organically interconnected due to its natural and historicalsocial relations, the development of the city was deformed because of the dictates of Trianon and the Socialist era. The opening of borders has increased until recently and it generated similar processes in the population's use of space.¹ These processes will continuously be reflected in the developments of settlement networks. The modern political climate of the European Union has contributed to a specific type of process: the reserve organisation and reorganisation of the region's spatial structure (Jaschitz 2010)². The old pre-Trianon urban hierarchy³ and the former urban relations are reversely arrange and rearrange themselves alongside unprecedented and newly emerged processes. The forces and directions of these processes have to be recognised as accurately as possible since their overvaluation or disregard can be great mistakes. One key question is whether the Esztergom-Štúrovo twin city has or will have the spatial organizing potential

¹ For further research about the use of space and mental mapping see the chapter of László Letenyei and András Morauszki in this book.

² Some segments of this analysis are based on the author's previous study which contains data that has since become outdated and which only focused on modelling the cross-border hinterland of Esztergom.

³ For more detailed description of the pre-Trianon administrative structure see the chapter of Bottlik et al. in this book.



necessary to become the actual centre of the region, and is it possible that by becoming a functional twin city, the region's economy will perform better?

Since Esztergom is not equally accessible from all directions and is located on a flat land, the (current) borders of its hinterland are significantly influenced by the natural regions, hydrography (and the settlement network which adapts to these factors). The Pilis and the Börzsöny Mountains are the two biggest natural areas near Esztergom. They have a major impact on the formation of intermunicipal relationships (Marosi-Somogyi 1990). Hydrography may even be a more powerful force-field forming factor since there are only limited numbers of transit points. The greatest barrier is undoubtedly the Danube, over which there are only bridges in Komárom, Esztergom and Budapest, other transit points are limited to a few ferry crossings. What is more, we should emphasise that this is a completely new phenomenon, the region's long history speaks about a "Danube that has never played a separating role in economic, social or ethnic terms" (Hardi - Mezei 2003, 67). Furthermore, the Ipoly and Hron rivers are also frequently used transit points in the region and crossing the former is more problematic. This is partly result of the river's relatively young historical heritage: it had a more dividing than connecting function for decades. Inter-settlement contacts are thus hindered by physical geography. Even though the level of accessibility is relatively satisfying, territorial cohesion would benefit from any kind of development in transport.

The standard population of Esztergom-Štúrovo and its spatial organisation power that is indirectly connected to population has always been highly sensitive to border changes in the region, and to the changes between its peripheral and central status, too. Results of extended model calculations help us to present a summary about the evolution of the settlement networks in Esztergom–Štúrovo and its rival neighbouring cities: Šahy, Levice, Nové Zámky, Komárom, Komárno, Tata, Tatabánya, Budapest, Vác and Rétság, and other intermediate settlements in the hinterland since 1900 (Table 1).

If we observe the broadening of the calculated theoretical hinterland, we can see that there was a general, consistent and slow loss of dominant position between 1900 and 1910. Changes in this period were characterised by the usual features of an organic development of a single spatial structure. No traces of anomalies can be found. However, it is already clear that the settlement structurally important Esztergom, then administrative capital of the county, already started to slowly decline even before the negative historical events and the border changes. This decline was partly caused by the increasing prosperity of Budapest and by the upsurge of other county capitals e.g. Šahy and Komárom, too.

	1900-1910	1910-1921	1921-1931	1931-1941	1941-1965	1965-1980	1980-1991	1991-2001
Budapest	-337	-105	-239	205	-754	264	10	253
Nové Zamky	-880	-921	-1 106	1 140	719	-1 019	-1 653	85
Šahy	-78	1 340	-607	-762	1 409	-1 950	-450	230
Komárno	0	1 352	-1 198	0	1 887	-289	-1 062	-10
Komárom	-397	2 776	-1 490	-785	3 867	-2 388	-190	-42
Levice	-582	-148	-1 589	1 368	-4	-2 343	-1 844	-445
Rétság	169	-856	-1 457	611	-220	494	-359	1 182
Tata	-1 813	2 523	-2 841	978	-1 239	-387	-209	84
Tatabánya	-401	-910	-3 024	183	-4 952	3	-79	58
Vác	-263	-56	-431	701	-414	-46	-62	-80

Table 1. Changes of Esztergom's Theoretical Hinterland in Meters Regarding theNeighbouring Cities in the 20th Century

Author's calculations.

Sources: www.world-gazetteer.com, SLOVSTAT, KSH, T-STAR, www.populstat.info

Komárom's split and other border changes between 1910 and 1921 severely modified the region's gravitational force field. On the one hand, the bordercrossing hinterland became increasingly theoretical beyond the Hungarian border. On the other hand, Komárom was split into two unequal cities, which resulted in the extension of Esztergom's dominance on the Hungarian side. Šahy is robbed of a slight advantage, as the city is in an even worse peripheral situation than Esztergom.

Subsequently, the loss of dominance is evident. Esztergom's peripheral situation means negative values on all fronts. The experience of the fact that border changes can transform space and the most important consequence is indisputable, namely hinterlands are always redrawn (Hardi 2008). Another consequence of the altering use of space could be observed in the differentiation of national policies (Pieris 2016). The new border situation, the drastic changes resulting in the breaking-up of centuries-old organic relationships and the inevitable consequences of the peripheral, border situation are all easily noticeable in the way Esztergom's attractiveness is declining. This situation is particularly typical in Levice and in Nové Zámky, both of which are further away from the border since these cities experienced a boom in population when the new Czechoslovak state was created. Decline characterises former Komárom on both sides of the border, especially in the Slovak part if compared with the artificially inflated Hungarian side. Tata took over some central role from Komárom and Esztergom, thus increasing its



influence as opposed to Esztergom. In these regards it is true, that "being a town is worth more than being on a border" (Gasparini 2014). Budapest and Vác were roughly stagnating while Šahy came to be in a peripheral situation thus meaning that these cities did not curtail Esztergom's dominance. Rétság took over some of the functions of the lagging Šahy, similarly to the case of Tata, these changes in the hinterland were detrimental to Esztergom.

The second (1938) border change – even the period of temporal re-annexations – provides a very important lesson for us because Esztergom gained dominance over all settlements except for the upsurge of two cities on the border, Komárom and Šahy. The original settlement hierarchy was "re-established" by the temporal return of the old hinterland. It also restored the attractiveness of the centres to a similar level as it was before the First World War. In effect, the population loss caused by the years before the separation recovered within a couple of years. This is a good example to illustrate how greatly artificial modifications of a city's hinterland can influence its population (or its gravitational mass in our case) (Beluszky–Győri 2004).

Afterwards, the shrinking of Esztergom's gravitational field was constant until the change of the regime. The repeated border changes between 1941 and 1965 together with the consolidation of Trianon borders reversed the processes started during the Second World War. Although, past trends continued until the end of the war, by 1965, Esztergom's hinterland became smaller at every point except for the other two border cities (Šahy, and Komárom which was separated again). The forced socialist industrialisation made Dorog a major employment centre in the region and it also contributed to Esztergom's increase in importance compared to the years before industrialisation; though its role in the settlement hierarchy declined significantly (Lettrich 1964).

Esztergom's hinterland might have been the smallest during the second half of the socialist era. The city did not have any influence on areas beyond the border anymore and it had less significance in the domestic settlement structure as well, partly due to the artificial boost of Tatabánya. (Similar efforts were made in Czechoslovakia with an additional neglect for border cities.) The status development of the industrial area in Dorog also contributed to Esztergom's loss of influence. In addition to these, Budapest grew to be the (also proportionally) biggest city in this period. The advantage due to location (the proximity of Dorog) gradually faded away until the end of that era, mainly due to the weakening competitiveness of coal-based industry (Nagy 1993). The situation of 1980 is the result of this gradual loss of dominance. However, it is worth highlighting that the shrinking process practically stopped from the direction of Tatabánya and Budapest. On the one hand, this indicated the already mentioned weakening competitiveness of coal-based industry, and thus Tatabánya's loss of dominance. On the other hand, it indicated the end of Budapest's expansion.

The decline for Esztergom and Štúrovo continued throughout the years of transition (1980-1991) (Williams, Balaž, Bodnárová 2001). The main reason for this decline may be the fact that the initial crises of the economic transformation affected Esztergom (and Štúrovo) more severely than other cities under our scope of analysis (Lados 1995). Esztergom lost most of its dominance for the benefit of Nové Zámky and Levice. This loss, however, was not the consequence of the shrinking of Esztergom, but that of the growth of Nové Zámky and Levice in this time. Around the change of regime, the shrinking process of the Hungarian side started to slow down and, later, came to a halt. This is mainly a corollary of the effect of economic transformation on settlement network. The stabilisation of the extension of the gravitational force-field happened alongside of lessening industrial opportunities in Tatabánya and Vác and increasing suburbanisation (and its effect that is decreasing population) in Budapest.

During the decade after 1990, the long period of shrinking began to slow down and then came to a halt before it would go against some of the examination points and would begin to increase its territory. Esztergom was less seriously affected by the difficulties of those times during the last part of the transition mainly because Esztergom did not have to deal with the extensive decline of its industrial heritage. What is more, an important employer, the Suzuki factory was established in the city thus helping the catch-up and triggering further development (though its benefits were first perceptible only around 1994-1995). The new economic, political and social relations immediately modified the extension of the gravitational force-field and the settlement network as well. The almost half-century-long shrinking finally stopped and was replaced by a more or less stagnating force-field. This partly means that integration has a transformative power on territorial relations (Diez, Stetter, Albert 2006). In our opinion, this was not exactly when the old spatial structures were revived (as for example in 1941), though the gradual reopening of borders undoubtedly contributed to the creation of the new picture. More importantly, the period brought about such significant (mostly) economic changes that had enormous effect on the centres of the region (and thus also affected our results). The calculated values may also imply a specific "frozen" condition of the spatial structure. What is indisputable, even with extreme caution, is the fact that while the border status was an unavoidable disadvantage around the beginning of the period, by the turn of the millennium, this status was no longer a disadvantage and gradually became an advantage. It also marked the end of a long period of mutual isolation, not



only figuratively but also practically, as the rebuilt Mária Valéria Bridge could function again and connect people. Accordingly, Esztergom became a real spatial structure forming factor again even in the Slovak parts of the region. Similarly, Štúrovo's attractiveness reached the Hungarian part as well – and thus the two cities began to intertwine.

The year of 2001 marked the beginning of a new era in the region. It was the time when the evolving tendencies of the previous period started to have a wider impact. The changing political situation brought about new possibilities. Crossborder movement and communication had less and less barriers. The Mária Valéria Bridge provided a transit option that grew to have fundamental importance in the region (together with the recently opened ferry dock). During the first period, when Esztergom's hinterland extended beyond the border, especially with regard to labour mobility and education (Bódiné Vajda 2004), Stúrovo's hinterland extended beyond the border due to shopping tourism. Mutual (mostly positive) experiences further increased the need for contact in the region for other functions as well. These facts jointly led to the formation of an institutionalised cooperation, the Ister-Granum Euroregion, later the Ister-Granum EGTC.⁴ The spatial consciousness of this bottom-up pattern of cooperation is implied by the fact that it almost perfectly overlaps with the potential hinterland of the twin city (or that of the Mária Valéria Bridge). This hinterland has been expanding with varied intensity, though continuously, since the accession of both countries to the European Union at the expense of its neighbouring counter-poles.

Figure 1, presents the expansion of the theoretical hinterlands of Esztergom– Štúrovo and its counter-poles (the large-scale hinterland of Budapest is not presented on the map for better visibility). The influencing zone of the two cities loses considerable territories from the direction of the Hungarian capital, while it is the most remarkable along the Danube and Ipoly rivers and on the Slovak side as well where it occupies a wide, coherent area. In practice, this means that the attractiveness of Esztergom–Štúrovo is greater than any of the other centres within the territory of the 59 hinterland-settlements. It is essential to highlight that the primary hinterland covers 59 settlements, out of which only 19 are located on Hungarian territory, 40 of them are in Slovakia. These proportions explain why Esztergom and Štúrovo were so sensitive to border changes in their historical analysis. Furthermore, they make the *raison d'être of* cross-border cooperation unquestionable.

⁴ Compare with the chapter of Bottlik et al. in this book.



Figure 1: Theoretical hinterlands of the main and subcentres of the region in relation to their competing centres, determined with Reilly formula, 2015

The attractiveness of Esztergom–Štúrovo has practically secondary importance where it overlaps with the other hinterlands in the East, in the Börzsöny Mountains. Due to the underdeveloped transport network in this region, no other centres (firstly Vác, secondly Rétság, Šahy) can truly fulfil the central role they wish for. Their rivalry will probably end within the next few years when the Ipoly Bridge is built between Ipolydamásd and Chl'aba. Esztergom–Štúrovo is expected to be the winner of this rivalry mainly because the bridge will facilitate the access to this centre from the settlements in the Börzsöny Mountains and from the Lower Ipoly Area, too.

As for the development of the hinterland over the past decade, Esztergom– Štúrovo has won the most space from Nové Zámky, Komárno and Levice on the Slovak side. The direction of this expansion strongly correlates with the existing ethnic proportions in the region.⁵ This phenomenon has the potential to further

⁵ For more detailed research of the ethnic frames see the chapter of György Farkas, *Linguistic* and ethnic border changes: within the frames of Ister-Granum Euroregion settlement group' in this book.



influence the expansion. Another important point to make is that the expansion is neither artificially developed nor does it have a distorted spatial structure. It is developing from the opportunity of an organic, shared development resulting in a naturally slow restoring process.





On Figure 2, the calculated joint hinterland of Esztergom-Štúrovo (as a true twin city) is shown separately from the hinterlands of Esztergom and Štúrovo, respectively. This theoretical model is especially useful for presenting the importance of cooperation even there, where close regional contact is not possible. On the one hand, it reveals how similar their regional interests would be. On the other hand, it displays which part of the region does not have a centre (e.g. settlements in Slovakia located on the outskirts of the shared hinterland and settlements in the Lower Ipoly Area in Hungary).

Open borders and cooperation between Esztergom and Štúrovo can therefore be more beneficial for the whole region if the city is functionally unified, economically efficient and its institutions and developments do not compete with each other, but they sensibly share resources thus enhancing each other's possibilities.



Figure 3: Territorial distribution of public services in the region of the Ister-Granum EGTC, 2015

The above-mentioned conditions would not only be beneficial but also necessary for reason of the serious anomalies which can be detected in the territorial distribution of public services in the region (Figure 3.). If we observe the map where 20 types of public services are considered (train station, bus station, airport, petrol station, bank, shopping centre, hotel, cinema, sports complex, community centre, hospital, higher education, school, library, museum, court, police station, post office, convenience store, pharmacy), we can see that the distribution of public services is less efficient in smaller settlements, and more efficient in Štúrovo and Želiezovce. In comparison with this, the distribution of public services is more homogenous on the Hungarian side even in the case of smaller settlements. Rich supply of public services characterises Esztergom though many functions have been developed and now operate in parallel with Štúrovo as a consequence of decades of separation. Some of these public services could not function in any other way due to distinct national administrative reasons, other public services for instance healthcare, tourism, public transport or logistics etc. have the potential to be even more integrated - to have joint operation and planning - which would be mutually beneficial to both parties.



Changes in the representation of a borderscape The case of the Mária Valéria bridge

Socio-economic complementarity in the border region

Socio-economic disparities in the observed region are considerably sharp even in our days. The decade-long cooperation with the European Union has, of course, had a favourable impact (and was financially supported), still, regional disparities that emerged during socialism remained. Nevertheless, there is a slow improvement and differences between multiple important factors (such as employment rate) on both sides of the border started to be progressively similar in comparison with the significant differences in the 1990s. With respect to the narrow scope of this study, we will only present two "telling" indicators to expose the division in economic development in the border region.





Figure 4 shows the territorial distribution of enterprises in the region in 2013. The proportion of registered enterprises is generally higher on the Hungarian side despite that Slovakia has a better tax environment and less administrative burdens (Grosz–Tilinger 2008). Moreover, the difference in some settlements can be 1,5-2-fold compared to the benefits enjoyed by the Hungarian settlements;

the standard density of enterprises within the Ister-Granum EGTC is 90,7 on the Slovak side and 117,3 on the Hungarian side. Further differences can also be detected between the two sides of the border. Similar to the territorial distribution of public services, the indicator of economic efficiency is also significantly influenced by the centres: the distribution of enterprises is denser mostly in micro-regional centres (e.g. Štúrovo, Želiezovce). The Hungarian side however, does not follow the same logic. Distribution already begins on a higher level and it is more heterogeneous. Furthermore, it reflects the effects of major transport links and the economic stimulation from the Hungarian capital. If we narrow down the scope of this research to large enterprises (employing min. 250 people), the centres will be visible on the Hungarian side as well. But what is more important here is the better visibility of the greater economic and employment potential of the Hungarian side.

Overall, the economic performance of the region south of the border is well above its neighbour's level in the north.



Figure 5: Territorial distribution of unemployed population in the region of the Ister-Granum EGTC, 2013



These tendencies are even more remarkable in the region's situational picture about employment. Figure 5 presents the distribution of unemployed population in different settlements. The difference here is even bigger, generally three times bigger: the average unemployment rate is 10.2 % in the Slovak settlements of the Ister-Granum EGTC, while this rate is only 3.1% in the Hungarian parts. In 2013, the Slovak part was an absolutely peripheral region within the national economy of Slovakia, while the Hungarian part, Esztergom and its surroundings, occupied a more fortunate position in the Hungarian national economy. This is not only due to their industrial heritage, but also to the proximity of Budapest.

The favourable situation of having higher economic potential on the Hungarian side and a high number of people (the majority of whom can speak Hungarian) available to fill jobs on the Slovak side was discovered and is being exploited by the region's economy. Despite its fluctuating intensity, employment-related commuting (typically from Slovakia to Hungary) has been stagnating on relatively high levels since opening of the borders.

The complex givens of this region resulted in many commuters, along with not so many migrants (Huber, Nowotny 2013). It is important that crossborder employment flows were caused mainly by the Slovak side's bilinguals⁶, but it doesn't necessarily mean a real binational twin city, it is more like a border crossing city (Buursink 2001). Apart from the previously presented two factors, many other factors indicate significant differences between the two sides of the border (e.g. the structure of vocational training and education, landscape geography, development level of economic infrastructure to which the cooperating parties respond for example with the creation of an integrated cross-border economic-logistics zone)⁷. From the perspective of cross-border cooperation, these disparities and differences, however, are more typically a fortunate complementarity. When secure connectivity and mutual thinking concur, one side can add what is missing from the other side and this can be a catalyst for successful cooperation in the future.

⁶ Compare with the chapter of László Letenyei and András Morauszki and with the chapter of György Farkas, *Linguistic and ethnic border changes: within the frames of Ister-Granum Euroregion settlement group*' in this book.

⁷ Compare with the chapter of Bottlik et al. in this book.

Conclusion

The results of our extensive analysis depict a complex image of settlement hierarchy, intermunicipal relationships and theoretical hinterlands in the observed region.

Roughly over the past century, border changes (and related hinterlanddistortions), socialist settlement policy and economic recession during the initial stages of the transition period negatively affected the centres. Aside from Komárom-Komárno and Šahy, these events had more detrimental effects on Esztergom-Štúrovo (Lados 1995). At the same time, however, among twin cities, it was Esztergom-Štúrovo (and Komárom-Komárno) which gained the most from the impacts of the European integration and from the related "blurring" of borders (Bódiné Vajda 2004). It should be specified that the events of the past decade (the gradual reopening of borders) were beneficial for the purposes of spatial structure development. These events contributed to assume real, natural and historical role of the region within the settlement structure, and are expected to provide its cities with better relationship network. As long as the migrant crisis and its consequences (closing of borders) do not reach the Hungarian-Slovak border, the current opening process can generate positive (natural and automatic) development in socio-economic terms for both sides of the (in many aspects theoretical) border. A possible closing of borders would have disastrous effects on this fortunate course of events with developing social inclusion and territorial cohesion.

Our calculated models reflect the reformed spatial habits evolving in the border region in the shape of the twin city's slowly growing theoretical hinterland. We can list many elements of this phenomenon such as the opening of administrative borders, the reconstructed bridge, historical and cultural precedents, relative linguistic homogeneity, exploitable economic complementarities or the "spatial consciousness" of the institutionalised cross-border cooperation in the region. These elements have a high potential to provide a good basis for a greater functional integration which could be economically favourable for the whole region.

Finally, I should emphasize once again that we may have come close to give good answers to the questions raised during our research, but we cannot answer them fully. Still, these observations are complementary to other studies with different focus and methodology in this collection.



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