

THE CZECH-POLISH AND AUSTRIAN-SLOVENIAN BORDERLANDS – SIMILARITIES AND DIFFERENCES IN THE DEVELOPMENT AND TYPOLOGY OF REGIONS

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Abstract

Cross-border relations and borderland issues are presented in this paper using two borderlands in Central Europe: Austrian-Slovenian and Czech-Polish. In the theoretical part, various types of cross-border links are described, mostly depending on previous political circumstances. Subsequently, the most important historical milestones in the development of the two borderlands are identified. This comparison of borderlands dwells on the statistical analysis of demographic and other socioeconomic characteristics, including the accessibility and types of settlement systems in the four countries. Finally, a cluster analysis and the development of five relatively homogeneous groups of territorial units presents a new viewpoint in the study of border areas, and enables a typology of both borderlands based on socioeconomic characteristics.

Shrnutí

Česko-polské a rakousko-slovenské pohraničí – podobnosti a rozdíly ve vývoji a typologie regionů

Článek se zabývá otázkami vývoje rakousko-slovenského a česko-polského pohraničí. První část je zaměřena na teoretické přístupy k vývoji přeshraničních vazeb a popisuje také historické mezníky ve vývoji obou zkoumaných pohraničí. Dále byla popsána metodologie výzkumu, který byl založen na porovnání a statistické analýze dynamických i okamžikových charakteristik územních jednotek v obou pohraničích (demografické, socioekonomické charakteristiky, dostupnost). Shluková analýza byla potom použita pro komplexní typologii územních jednotek v obou pohraničích. Bylo vytvořeno pět typů územních jednotek a byly diskutovány otázky jejich výskytu ve zkoumaných územích.

Keywords: *cross-border collaboration, regional disparities, Austria, Czech Republic, Poland, Slovenia*

1. Introduction

In this paper we focus on some aspects of the geography of border areas. The paper tries to introduce a more comprehensive and synthetic view on the processes and determinants of the current stages of development on the example of Czech-Polish and Austrian-Slovenian borderlands. The main aim is to bring a new viewpoint to the discussion about the border areas. As mentioned by Bufon (2007), "the literature written up till now on geography of border landscapes mainly comprises of works dealing with border areas as part of individual countries only, while rarely extending over the political borders to define and discover a so-called cross-border region". In this article, we would like to break this rule and analyze border areas (borderlands) as non-divided spaces. The aim of the common project between the Geographical Institutes of the Palacký University in Olomouc and University of Klagenfurt (founded by the Programme "Aktion Österreich-Tschechische Republik") was

to compare the two borderlands with a different history and development of the border situation and different conditions for cross-border interaction and collaboration. In this process, perceptions and valuations of local and regional stakeholder groups were gathered and analyzed. The paper presents a basic regional analysis of the borderlands including the development of the borders and border regimes as well as conclusions for cross-border collaboration and integration. The analysis of selected characteristics should describe the current stage of the development in both border areas where similar cross-border links are expected. In particular, we would like to answer the question whether there are more similarities between adjoining areas on both sides of the border or between areas along the border. In other words, is the political border the main dividing factor of the spatial structure or not? What does it mean for functional relations and for the development of an integrated border region?

2. Theoretical basics

Related to the European integration and enlargement in politics, society and science, the perspective has changed from border regions and their problems to cross-border interaction and development, from a national state point of view to an interregional or European point of view. National borders have lost a larger part of their function as a barrier meaning that cross-border interaction and collaboration have become increasingly important (Jeřábek, 2002). In the border research of the last decades, different approaches and fields such as Border area view (Ratti, 1993) and Transnational Regionalism View (Schmidt-Egner, 2005) have been developed.

The different types of borderlands interaction by Martinez provide a basis for the borderland analysis in our study. Using the example of the border between the USA and Mexico, he distinguishes four stages of borderland interaction: (1) Alienated borderlands, (2) Coexistent borderlands, (3) Interdependent borderlands and (4) Integrated borderlands (Fig. 1). In the “alienated borderlands”, the routine cross-border interactions are practically non-existent. The permeability of the border is very low. The

border is functionally closed and the residents of the neighbouring countries act as strangers to each other. In the case of the “coexistent borderlands”, the border is slightly open, so that international relations are possible but only a limited cross-border interaction develops. The borderland interdependence exists if regions on both sides of the border are symbiotically linked with each other. Economic complementarities generate cross-border interaction and collaboration, which stimulate the development of markets, capital and labour. Moreover, the “interdependent borderlands” are characterized by social relationships across the border. On the other hand, some factors such as over immigration, trade competition and ethnic nationalism influence the cross-border relations and the border regime negatively. In the “integrated borderlands”, no barriers exist to trade and human movement across the common border. The neighbouring regions merge economically, with capital, product, and labour flowing. The major political differences between the neighbouring countries are eliminated and the locals perceive themselves as members of one social system (Martinez, 1994, p. 1–5). In the sense of Martinez, the widely-used term “trans-border region” (or “cross-border region”) is equal to the “integrated borderlands”. That means that functional relations

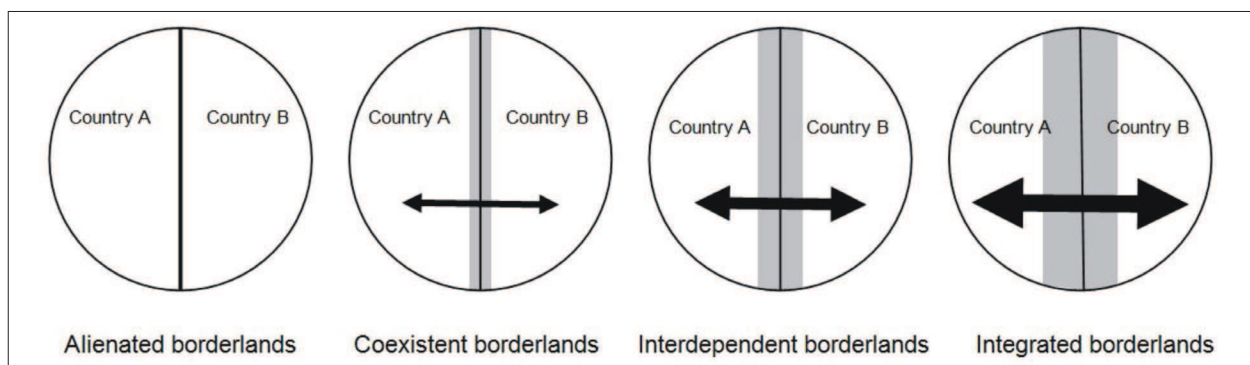


Fig. 1: Types of borderland interaction (by Martinez). Source: Martinez, 1994, p. 3

and interactions across the border exist and common cross-border regional identity has developed. Whereas the Austrian-Slovenian border was part of the Iron Curtain, there is a long tradition of cross-border interacting and cooperation. In the Czech-Polish borderland, the traditional cross-border cooperations were discontinued in the context of the two world wars. Interactions started developing again in the 1990s after the accession of the two countries in the EU. However, the development of integrated borderlands is not only based on the regional structures, it requires durable functional relations in particular.

When we look at the differences between border regions and cross-border regions in Europe, Bufon distinguishes three basic groups: West European,

Central European and East European (Bufon, 1998, cit. in Bufon, 2007). The Central and East European ones are typical for our case study region. In the Central European type, historical regions often do not match the actual spatial regionalization. Numerous delimitation processes have occurred there namely following the two world wars in the last century and divided the originally homogeneous historic regions into several units. Cross-border regions do not fit the administrative spaces and rather match the existing cultural or historic regions. Aside from the interstate cooperation and openness, they also display “a remarkably high level of social integration, which usually leads to the formation of special cross-border spatial systems that could be defined as “regions within regions” (Bufon, 2007, p. 6).

On the other hand, the East European regions are characterized, according to Bufon, by a combination of old and new borders in the traditionally less developed and sparsely populated space. During the communist regime, this unfavourable situation was magnified by causing or encouraging the emigration of autochthonous population and hindering the social and economic development in the border areas. Because of their low potential, such borderlands have even in the new circumstances only very limited possibilities for advanced forms of cross-border cooperation. This is why Bufon (2007) calls them "regions under reconstruction". It is obvious that institutional and political aspects, such as the border-crossing regime or institutionalization of cooperation on different levels, play still a very important role today and even for our studied border areas, which lag behind the West European type.

Until 1990, interaction and economic cooperation across the border between Austria and the former Yugoslavia were easier than in other parts of the Iron Curtain and were already institutionalized in the late 1970s in the form of the Alps-Adria working community, which was based on the former cooperation between Carinthia, Slovenia and the Friuli-Venzia Giulia region in Italy (Wastl-Walter and Kofler, 1999). Nevertheless, inequalities between Carinthia and Slovenia, resulting from conflicts at the end of the First World War (Carinthian struggle of resistance, Carinthian Plebiscite), were still strong (Valentin, 2005; Moritsch, 2001). In this sense, the border between Austria and Slovenia can be rather classified as that of the Central European type although it does not meet all criteria. The Czech-Polish relations regarding the border regime development are even more complicated. In spite of the fact that the two countries were members of the so-called "socialist camp" and faced similar problems of transition after 1990, the base to start collaboration was much lower and we can clearly name them as East European border regions although the potentials are higher than in other border areas of this type. To understand the current stage of cross-border relations and their development, it is necessary to look at the fundamental historical evolution of the study areas.

3. Historic milestones in the development of borderlands

The development of the state border between the Czech Republic and Poland is a result of a complicated long-term historic trajectory. Important political events especially in the 18th and 20th centuries determined the development of the current Czech-Polish border. One of the crucial milestones was

in 1742 when a substantial part of Silesia and the Kłodzko region (almost 37,000 km²) were lost by the Habsburg monarchy and became part of Prussia. The new border between Prussia and Austria often did not respect natural phenomena such as rivers or mountain chains and divided many settlements (e.g. in the Javorník region). These territorial changes (the loss of Silesia) lasted until World War I. Between the two wars, Czechoslovakia had its new borders for the first time also with the newly established Poland. The three border point between these countries and Germany was located on the Odra (Oder) River near Gliwice and Bohumín. As a result of World War II, the shift of this three border point to the west, to Lusatian Neisse, led to an enormous enlargement of the Czech-Polish border.

As mentioned above, the Czech-Polish borderland is composed of two specific and different parts. The original Sudetenland part is characterized by almost complete population exchange. On both sides of the border, the German population was expelled and the new Czech and Polish population was resettled. Consequently, the centuries-long continuity was interrupted in all aspects. Only the current 3rd generation of the new population established roots here more deeply. On the other hand, the shorter eastern part of the Czech-Polish borderland did not experience so many changes in terms of population exchange and the Polish population is here present on both sides of the border (Hannan, 1996). But if an observer were to assume that there are substantial differences in cross-border relations, their quality and intensity, it is not the case (Siwek, 2011). The originally very sharp divide between these two parts of the Czech-Polish borderland has been smoothed. One of reasons is that normal cross-border contacts along the whole border have developed only in the last twenty years. An illustrative example is a so-called Těšín/Cieszyn problem which has been solved at an international level. As late as 1958 the agreement between Czechoslovakia and Poland about the final delimitation of the state border was signed. But even today we can observe some tensions and examples of national intolerance on both sides (Blažek et al., 2006). Larger numbers of the Czech citizens of Polish nationality (in the sense of ethnicity) live only in the Czech part of the Těšín/Cieszyn Silesia. On the Polish side of the border, the Czech minority practically does not exist. This imbalance to a certain extent determines relations in this part of the Czech-Polish border.

Following the political changes in Czechoslovakia and Poland at the end of the 1980s, cross-border collaboration has changed. Until the end of the 1980s, boundaries in this region and generally in the

whole of Eastern Europe had the function of spatial barriers and their permeability was low. Border zones were peripheries of particular national, highly autarkic, economic systems (Stryjakiewicz, 1998; Turnock, 2002). Since the middle of the 1990s, cross-border projects between Czech and Polish partners have been supported by the EU, at first by Phare CBC Programmes and since the accession of the Czech Republic and Poland (2004) to the EU within the scope of INTERREG Programmes. As an institutional framework for the integration process of border areas and organisation of cross-border collaboration, six Euroregions were established along the whole Czech-Polish border: Neisse-Nisa-Nysa (1991, trilateral with Germany), Glacensis (1996), Praděd-Pradziad (1997), Silesia (1998), Těšínské Slezsko-Śląsk Cieszyński (1998) and Beskydy-Beskydy (2000, trilateral with Slovakia) (see INTERREG III A Programme Czech Republic-Poland, 2004). However, the integration beyond borders means not only the establishment of physical and institutional preconditions but also a dense network of contacts and interactions (Ladysz, 2006).

A crucial milestone for the present border between Austria and Slovenia was the end of World War I. Previously, Carinthia, Styria and Krain were provinces of the Habsburg Monarchy which were settled by the German- and Slovenian-speaking populations in different proportions. Due to the disintegration of the Habsburg monarchy and the emergence of new national states, the Republic of German Austria (as it called itself) and the Kingdom of Serbs, Croats, and Slovenes (later Yugoslavia), a national state border was established. This process was connected with different territorial demands, border conflicts and armed clashes (Carinthian struggle of resistance). The final delimitation of the border was determined on an international level by the Treaty of St. Germain (1919) and the Carinthian Plebiscite (1920). The most eastern area of the current Austrian-Slovenian borderland was transferred from Hungary (Treaty of Trianon, 1920) to Austria (Burgenland) and Slovenia (Prekmurje). Following these completely new boundaries, different ethnic minorities, e.g. Carinthian Slovenes and the German-speaking minority in Štajerska (former Lower Styria), lived in new national states (see Bufon, 1993; Klemencic, Bufon, 1994; Bufon and Minghi, 2000; Moritsch, 2001; Moll, 2007).

In Carinthia, the conflicts with Carinthian Slovenes and their organisations, and tensions between Carinthia and Slovenia exist up to the present day, although activities focused on solving the conflicts have been enhanced recently. On the other hand, the

cooperation between Carinthia, Slovenia and Friuli Venezia Giulia in areas such as spatial development, culture, tourism, transport and water management, already operating in the 1960s, is an early example of transnational cooperation. In general, contacts and co-operation between Austria and the former Yugoslavia were easier than in other parts of the Iron Curtain. Nevertheless, some of the reservations against Slovenes or Slovenia result from this period (Valentin, 2005).

Since the mid-1990s, cross-border projects between Slovenia and Austria are supported by the EU Regional Policy, 1995–2003 by INTERREG and PHARE CBC Programmes, and by the INTERREG Programme since the accession of Slovenia to the European Union. Between Styria and Slovenia, the Euroregion Styria-North East Slovenia was established (2001). In the Carinthian-Slovenian borderland, the Work Group – Cross-border Regional Partnership Karavanke (2002), founded from the initiative of regional development agencies in Carinthia and the northwest part of Slovenia, is responsible for cross-border projects (OP SI-AT 2007–2003, 2007).

4. Methodology of regional analysis

In recent times, geographical research on border regions has been focused mostly on cross-border collaboration, related to the stronger role of the institutional regional policy of the EU. The geographical structure of borderlands (natural environment, population, settlements, economy, transportation, etc.) and the day-to-day contacts of people across the border remain a rather marginal topic of research. In this paper, we would like to compare the regional structure of the Austrian-Slovenian and Czech-Polish borderlands using socio-demographic and socio-economic indicators in a more complex way, to understand better similarities and differences in the two types of European border areas. However, this kind of analysis is usually faced with many methodological problems, especially the comparability of statistical data and borderland delimitation. The selection of characteristics to be investigated was limited due to their availability, comparability and consistency from four different resources. Of course, for the analysis we tried to find more relevant characteristics such as the level of entrepreneurship, unemployment level or similar indicators, but our effort failed due to their inaccessibility and/or incomparability.

The delimitation of both borderlands is based on the pragmatic need of using administrative units for statistical and other analyses in the area. We wanted to select those kinds of units that would enable a detailed

enough insight into the territorial structures and that would be of a relatively similar size in terms of their population and area. The number of these units should be in every country large enough to be representative. Therefore, we used the district level: Bezirke in Austria, malé okresy (or správní obvody obcí s rozšířenou působností) in Czechia, powiaty in Poland and upravne enote in Slovenia. We selected for the analysis districts bordering with the neighbouring country.

Data covering the population are available and they indicate regional structures and development. Comparable data of other sectors like economy or transport are rare on the level of small-scale units. Moreover, at least a medium-term development should be considered. Therefore, the following regional analysis dwells primarily on four indicators: (1) population density; (2) medium-term population development; (3) age structure; and, (4) employment structure. This includes typologies and references to different types of area as well as basic functional relations and processes which could not be measured by quantitative data within this study but could be qualitatively described instead (e.g. main traffic routes, agglomeration and suburbanisation process). Data were visualised through cartographic methods using ArcGIS.

In Austria, Czech Republic and Poland, statistical data at the district level are available; in Slovenia, data about the upravne enote had to be aggregated from the communities. Further problems of data harmonization concerned different years for the population census in the national states (Austria and Czech Republic 2001, Poland and Slovenia 2002), availability of indicators in all four countries, different modes of statistical elicitation (beginning of the year, end of the year, different classifications). Therefore, for example, data about the population of Czech and Polish districts originate from 31 December 2010 and about the population of Austrian and Slovenian districts from 1 January 2011. In this context, the medium-term population development can be only calculated as a difference between the population of one year and the second year (only quantitative). The basic processes of natural population dynamics and migration could not be analyzed within this study. The basic year for population development also differs because of the administrative reform in Poland in 1995. Therefore, population development is calculated as an index 1991/2011 in the Austrian-Slovenian borderland and as an index 1995/2010 in the Czech-Polish case. The age structure is analyzed simply according to the share of inhabitants in the main age groups (0–14, 15–64, 65+). The employment structure is shown as a share of employed people in the main sectors of economy: primary sector, secondary sector and tertiary

sector based on the census data 2001 or 2002. In Austria, the data for the three sectors are calculated from 17 sections of the Austrian statistical classification of economic activities (ÖNACE).

The employment structure will be analyzed by means of the Ossan triangle which combines the shares of the three sectors (each sector has a share from 0% to 100% while the sum of all sectors is 100%). In this triangle graph, each district is represented by one point. Based on this triangle graph, a typology of districts showing the different relations between the sectors will be created. Additionally, as an indicator of urbanisation, the percentage of people living in municipalities with more than 5,000 inhabitants is used. The problem of this indicator relates to the strong dependence on administrative structures in the respective countries.

To get a more complex view of the socio-demographic and socio-economic situation in the two borderlands, a typology of all districts was created using the cluster analysis (k-average method). Fundamental rules of cluster analysis were respected. This method is to some extent subjective, concretely in delimitating the optimal number of clusters. The delimitation of five types was selected as the most relevant. The cluster analysis was calculated using the Statistica software programme and a matrix was constructed having 84 rows (districts) and 8 columns (statistical variables):

1. population development 1991–2011/1995–2010,
2. percentage of young population (0–14) 2010/2011,
3. percentage of working age population (15–64) 2010/2011,
4. percentage of older population (65+) 2010/2011,
5. percentage of primary sector 2001/2002,
6. percentage of secondary sector 2001/2002,
7. percentage of tertiary sector 2001/2002 and
8. percentage of people living in municipalities with more than 5,000 inhabitants 2010/2011.

5. Characteristics of the Austrian-Slovenian and Czech-Polish border areas

The two study areas along the Czech-Polish and Austrian-Slovenian borders vary significantly as to their size and total population (see Tab. 1). The border between the Czech Republic and Poland is more than twice as long as the border between Austria and Slovenia. Accordingly the Czech-Polish borderland is nearly twice as big as the Austrian-Slovenian borderland. On the Austrian side, the borderland consists of parts of the Federal States of Carinthia, Styria and Burgenland. In Slovenia, regions in the sense of planning or development units do not exist until recently and this is why the defined statistical regions are normally used

| | Czech-Polish Borderland | Austrian-Slovenian Borderland |
|--|--|---|
| Defined borderland (project) | 790 km border 22,468 km ² , 4.1 Mio people 33 Malé okresy (CZ), 23 Powiaty (PL) | 330 km border 12,283 km ² , 1.2 Mio people 11 Bezirke (A), 17 Upravne Enote (SI) |
| Administrative units on the regional level (NUTS 2 or 3) | CZ (Kraj): Liberec, Hradec Králové, Pardubice, Olomouc, Moravian-Silesian PL (woivodeship): Lower Silesian, Opole, Silesian | A (Bundesland): Carinthia, Styria, Burgenland SI (statistical regions): Gorenjska, Koroška, Savinjska, Podravska, Pomurska |
| Landscape | Mountain regions of the Sudeten Mts. and Western Beskids Mts. (above 1200 m, Sněžka/Śnieżka about 1600 m) Upper Silesian basin with coal deposits, hilly areas and lowlands of Silesia | Mountain regions of the Karavanke Alps and the Kamnik-Savinja Alps (above 2000 m/2500 m), Lavanttal Alps (above 2000 m), Klagenfurt Basin (on average 450 m), hilly areas and lowlands of Southern Styria, Podravje and Pomurje regions |
| Spatial structure | rural areas, urban or/and traditional industrial areas Agglomerations of Upper Silesia and Ostrava Biggest towns (population as at 31 Dec.2010): Ostrava (303,609), Bielsko-Biała (174,729), Rybnik (141,757), Wałbrzych (120,197), Liberec (101,865), Jelenia Góra (83,963), Havířov (82,022), Karviná (60,679), Opava (58,274), Frýdek-Místek (58,200) | rural areas, in Slovenia partly older industrial areas, urban area of Klagenfurt and Villach (Carinthian central region) Biggest towns (population as at 1 Jan. 2011): Maribor (111,730), Klagenfurt (94,303), Villach (59,285), Kranj (55,029) |
| Main traffic routes | Brno–Olomouc–Ostrava–Katowice–Kraków (rail, road), Ostrava–Český Těšín/Cieszyn–Bielsko-Biała (road) Hradec Králové – Wrocław (rail, road), (Prague)–Liberec–Zittau, Turnov–Harrachov–Jelenia Góra (road) | Wien–Graz–Maribor–Ljubljana (road,rail), Wien–Graz–Klagenfurt–Villach–Italy (road, rail not via Graz), Salzburg–Villach–Kranj–Ljubljana (road, rail) |

Tab. 1: Basic characteristics of the Czech-Polish and Austrian-Slovenian borderlands (CZ – Czech Republic, PL – Poland, A – Austria, SI – Slovenia | road – motorway, rail – main railway route)

Source: authors' compilation based on INTERREG III A Programmes Austria–Slovenia (2005) and Czech Republic–Poland (2004), Statistical Offices of Austria, Slovenia, Poland, Czech Republic

for regional analysis. The Czech-Polish borderland is situated in three Polish and five Czech administrative units on the regional level (Tab. 1). The mean size of the districts in Austria and Poland is larger than in the Czech and Slovenian border regions.

The western part of the Austrian-Slovenian border is formed by an alpine mountain range which complicates the economic development as well as the cross-border road and railway traffic. Besides the motorway and railway, Karavanke tunnels and some mountain passes provide for the cross-border road traffic. In the hilly areas and lowlands, natural conditions for border crossing are better but the infrastructure is less developed. The railway connection from Carinthia to Maribor along the Drau/Drava River is only a branch line. In the Czech-Polish borderland, mountain ranges are not as high as the Alps but their impact on the cross-border transport are similar.

5.1 Population density and different area types

According to Seger (2007), peripheries in border areas (twin) often adjoin each other. However, the number and intensity of cross-border functional relations and interactions is higher between the agglomeration and the central regions. By contrast, only little cross-border collaboration exists between the peripheral rural areas close to the border. The indicator of population density gives a first impression of the spatial structure and area types in the two analyzed borderlands (Fig. 2). In the Czech-Polish borderland, the population density is much higher than in the Austrian-Slovenian borderland (185 compared to 100 persons per km²). The highest population density in the Polish border region is more than twice as high as the lowest population density in the Austrian border region.

The Austrian part of the borderland is mainly a rural area of low or very low population density (Lower

Carinthia 52 persons/km²). In the Styrian and Southern Burgenland, borderland towns over 10,000 inhabitants are absent. Only the Carinthian Central Region with two larger towns of Klagenfurt and Villach can be characterized as an urban area because of suburbanisation processes in the surroundings of the towns (six other municipalities with more than 5,000 inhabitants). This suburbanisation area reaches near the Slovenian border. The same is true for Maribor. Even though the larger cities of Graz and Ljubljana are situated outside of the borderland, their urban agglomerations affect the borderland. In the Slovenian part of the borderland, moreover, rural areas alternate with early industrialized urban areas (e.g. in Koroška and in the Upper Sava R. valley) with a higher population density and a partly higher percentage of population in towns. The Austrian-Slovenian borderland is peripheral only partially. Klagenfurt, the capital of Carinthia, Villach, Kranj and Maribor function as high-order centres with different functions. Ljubljana, the capital of Slovenia, and Graz, the capital of Styria, are not very far apart. The main railway routes and motorways cross the borderland between Graz and Maribor, within Carinthia and Gorenjska. Following this, peripheral areas can be found especially in the high mountain regions closer to state the border or between Carinthia and Styria, as well as in the north-eastern Slovenian region of Pomurska.

In the Czech-Polish borderland the population density differs to a much greater extent (Fig. 2). There are areas of low population density such as the rural mountain area of Jeseníky in Moravia and the Kłodzko region in Poland (99 persons/km²) on the one hand, and the urban and industrial agglomerations of Upper Silesia and Ostrava with a high population density on the other hand. It can be seen that the population density of lowland areas is higher than that in the neighbouring mountain areas (e.g. the Nysa district and the Jeseníky Mts.). In the Upper Silesian basin, on both sides of the border, important industrial agglomerations developed based on coal deposits and mining. Ostrava, the largest town of the borderland, is the third largest city in the Czech Republic. On the Polish side, only the south-western part of the Upper Silesian agglomeration and the area of Bielsko-Biała belong to the borderland. Katowice, the capital of the voivodeship and the centre of the agglomeration, is situated outside the border region. The divided town Český Těšín/Cieszyn (25,445/34,408 inhabitants), located east of Ostrava, constitutes a special border situation. In the western part of the Czech-Polish borderland, the population density is very heterogeneous corresponding to the alternation of larger towns (e.g. Liberec, Wałbrzych, Jelenia Góra) or urban-industrial areas with more rural areas.

In the eastern part of the Czech-Polish borderland, the only cross-border motorway between Poland and the Czech Republic runs from Ostrava to Katowice and Kraków and via Český Těšín/Cieszyn to Bielsko-Biała, but it is partly under construction. Additionally the main railway connection between the Czech Republic and Poland goes via Ostrava and Katowice. In the middle and western regions, the capitals of voivodeships and townships mostly lie further away from the border. Only the town of Liberec is situated within the borderland. Consequently the west-east motorways are running also outside of the borderland via Wrocław, Opole and Katowice in Poland and between Liberec and Olomouc in the Czech Republic (planned). This is why some parts of the borderland, especially in the low mountain ranges, can be characterized as peripheral areas.

5.2 Population development as an indicator of regional development dynamics

The medium-term population development from the early 1990s to the present day provides first insights into the regional development. The comparison of the two borderlands shows a slightly positive dynamics of the Austrian-Slovenian borderland where the population growth and population decline districts balance out (index 1991–2011 in the Austrian part 1.03 and in the Slovenian part 1.01). In the Czech-Polish borderland, both sides of the border are characterized by the population loss (index 1995–2010 on the Polish side 0.95 and on the Czech side 0.98).

The Polish part of the borderland recorded the highest depopulation. The population grew only in the area around Bielsko-Biała and Rybnik. This could have resulted from suburbanization processes because of population decline in these two cities. All other districts lost the population, some of them more than 10% (e.g. Wałbrzych and Kłodzko). The depopulation processes in the border regions probably overlapped with the massive out-migration from Poland. On the Czech side, the situation is different. In the more peripheral mountain regions of Krkonoše and Jeseníky and partly in the Ostrava agglomeration, the population development was more or less negative. The area of Liberec and Jizerské hory Mts., the Orlické hory Mts. and some districts around Ostrava recorded a slight population growth (Fig. 3).

In the Austrian-Slovenian borderland, a substantial population growth is visible in the areas of Klagenfurt, Villach, Maribor and Kranj. This reflects the dynamic development in Klagenfurt and the Carinthian central region, in the Maribor region as well as in the agglomerations of Ljubljana and Graz, including suburbanization processes. The municipality of

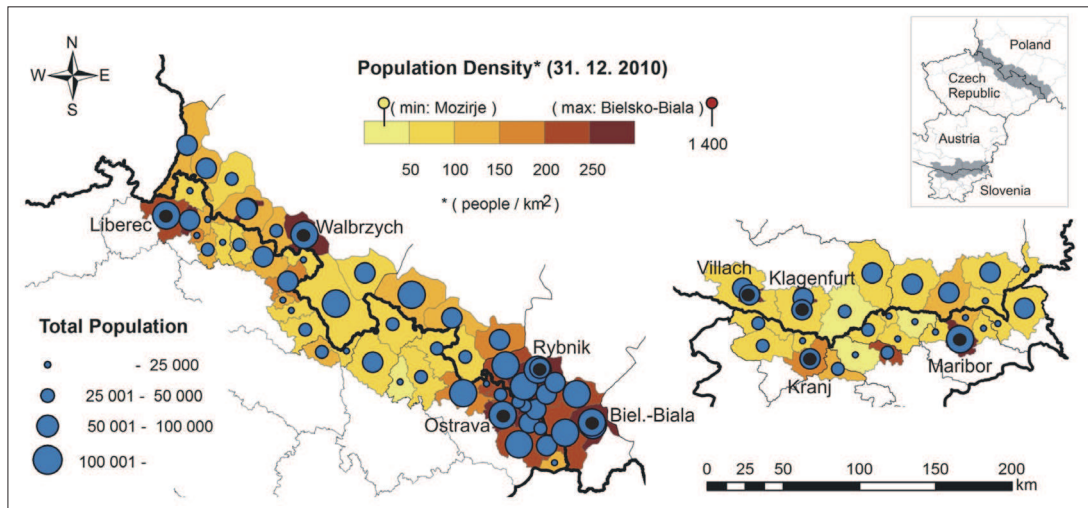


Fig. 2: Population density in the Czech-Polish and Austrian-Slovenian borderlands 2010/2011
 Source: Czech Statistical Office, Central Statistical Office of Poland, Statistik Austria, Statistical Office of the Republic of Slovenia

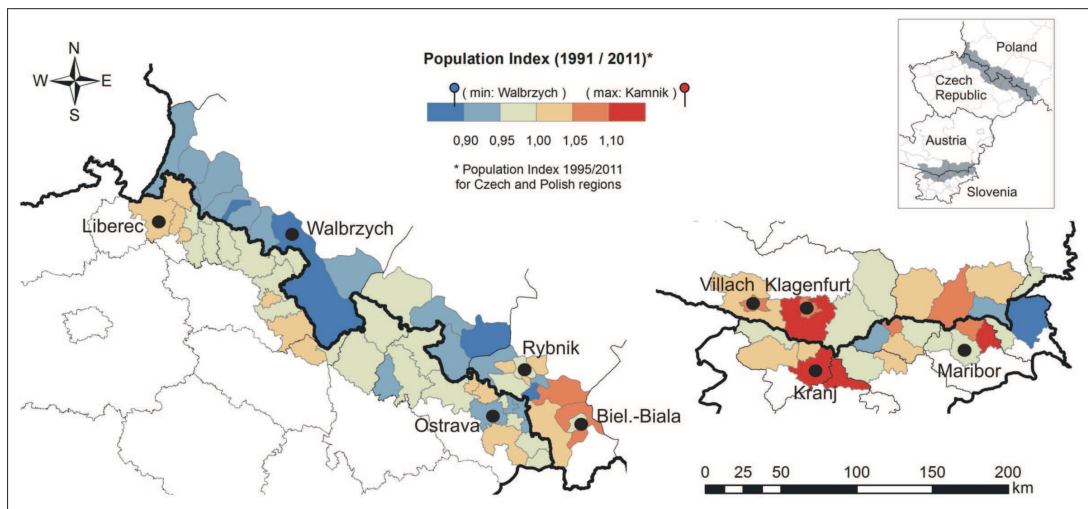


Fig. 3: Population development in the Czech-Polish and Austrian-Slovenian borderlands 1995–2010/1991–2011
 Source: Czech Statistical Office, Central Statistical Office of Poland, Statistik Austria, Statistical Office of the Republic of Slovenia

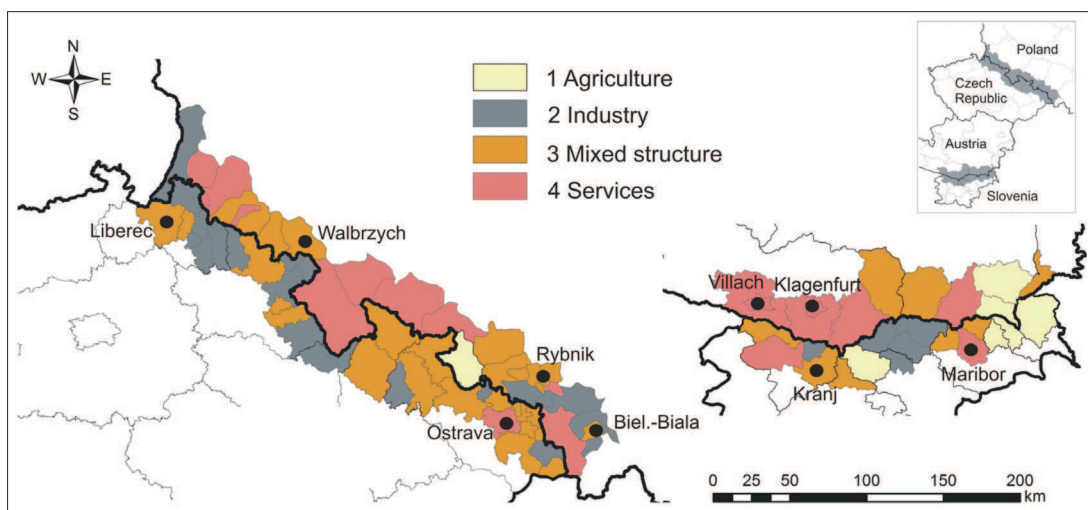


Fig. 4: Types of employment in three economy sectors in the Czech-Polish and Austrian-Slovenian borderlands 2001/2002
 Source: authors' calculation based on Statistical Offices of Czech Republic, Poland, Austria and Slovenia

Maribor continually lost population and is currently characterized by a stable situation, while the populations of Klagenfurt and Villach continued to grow. On the other hand, the peripheral areas on both sides of the border have shown a population loss. The highest depopulation is observed in the most eastern area of Murska Sobota and in the neighbouring district of Radkersburg (Fig. 3).

5.3 Age structure – the main age groups

The shares of the main age groups show further characteristics of the borderlands and indicate potentials or problems. Due to the selective migration processes, the depopulation areas are mainly characterized by a high percentage of older people (65+) and the suburbanization areas by a higher percentage of working age population and families with children. However, the age structure is influenced by the natural population dynamics (e.g. higher/lower birth rate), too. Therefore, the shares of the main age groups varied from district to district and the triangle shows a considerable dispersal of statistical units. Some tendencies are visible though. Nearly the whole Austrian border region is characterized by high shares of older people (above 18%) and low shares of people at working age (up to 68%). In the Polish border region, the middle part has a higher percentage of older people (from above 17% to more than 19%) and a lower percentage of young people (below 14%). In the Czech border region, the share of older people is much lower (below 16%), especially in the central and eastern part. In the Slovenian border region, the situation is also more heterogeneous but the potential of people at working age shows an increasing trend in the eastern part.

5.4 Employment structure

Looking at the employment structure in the study areas, we can observe the trends of the European development. The share of employment in the primary sector is low but it shows also big differences. In more than 90% of all districts, the share of agriculture lies below 10% and in 15% of districts even below 1%. These are mostly industrial areas or highly urbanised areas (e.g. urban districts) in

particular in the eastern part of the Czech-Polish borderland. More than 10% employees in the primary sector can be found in the north-eastern part of Slovenia (Murska Sobota, Gornja Radgona, Lenart) and the Slovenian district of Mozirje, in South-East Styria (Feldbach, Radkersburg) and the district of Głubczyce in Poland. These regions are characterized by a low level of urbanisation and industrialisation and good conditions for agriculture (e.g. Głubczyce). Podravje and Prekmurje as well as South-East Styria are important wine-growing areas.

The second trend shows a growing share of the tertiary sector. In the Austrian border region, all districts have a share of more than 50% of employees, except for Wolfsberg. The highest share is recorded in the high-order centres of Klagenfurt and Villach (above 70%) and their surrounding districts (between 60% and 70%). In the Slovenian, Czech and Polish border regions, the share of the tertiary sector in some districts is rather high (60% or more) due to their functioning as central places and/or tourism, for example Žory, Jelenia Góra, Kłodzko, Cieszyn, Lwówek Śląski in Poland, Ostrava in the Czech Republic and Maribor in Slovenia. Districts with a higher importance of industry and more than 50% employees in the secondary sector concentrate more or less in the traditional industrial areas such as the western part of the Slovenian border region (e.g. Dravograd, Tržič, Velenje, Ravne na Koroškem, Radlje ob Dravi), in the eastern districts of the Polish border region (e.g. Pszczyna, Wodzisław Śląski, Bielsko-Biała) and in various parts of the Czech border region (e.g. Železný Brod, Kravaře, Tanvald, Frýdlant).

A more complex view of the employment structure is displayed in Fig. 4. The typology consists of four types of districts: Type 1 represents all districts with a high share of agriculture. Type 2 is characterized by high numbers of employees in industry and by industry dominance. Type 3 and Type 4 are dominated by services which however differ in the percentage of industrial employees. The high share of industry employees in Type 3 leads to a mixed structure of services and industry. In contrast, Type 4 is clearly dominated by services (Tab. 2).

| Type | Number of districts | Employees in economy sectors (%) | | |
|--------------------|---------------------|----------------------------------|--------------|------|
| | | I. | II. | III. |
| 1. agriculture | 7 | > 10 | | |
| 2. industry | 25 | < 10 | > 40, > III. | |
| 3. mixed structure | 34 | < 10 | > 40, < III. | |
| 4. services | 18 | < 10 | < 40 | > 50 |

Tab. 2: Criteria of employment types. Source: authors' calculation

This typology of districts shows some interesting differences between the borderlands. The Austrian part of the borderland is most typical for domination of service function caused by high level services of urban areas and/or tourism especially around the Carinthian lakes. In the eastern part services also dominate, Type 3 (Deutschlandsberg, Jennersdorf) tends to Type 4 and Type 1 (Radkersburg, Feldbach) shows also more than 50 % employees in services including tourism. The mixed structure in the district of Wolfsberg results from a higher percentage of industry as well as agriculture (e.g. fruit-growing). The Slovenian side of the border is much more differentiated; all four types can be found. Up to the present day, the industry dominated areas include the Koroška region (Dravograd, Slovenj Gradec, Ravne na Koroškem, Radlje ob Dravi) and the neighbouring Velenje area. In the Gorenjska region, only Tržič belongs to the industry type while in Kranj and Jesenice industry is dominated by services (Type 3). Kranjska Gora and Radovljica are characterized by Type 4. In the easternmost part of the Slovenian-Austrian borderland, the very high proportion of workers in agriculture (> 12%) results from a more rural structure and wine-growing.

On the Czech side of the borderland, mainly two types of districts can be found: industry dominated employment structure (Type 2) and mixed structure of services and industry (Type 3). This closely relates to their long tradition of industrialisation and relatively

high urbanisation levels. In the area of larger towns such as Opava, Liberec and Český Těšín, a combination of services and industry prevails, but only in Ostrava do the services dominate clearly. Moreover, in several parts of the mountain regions, the mixed employment structure results from tourism (e.g. Krkonoše Mts., Jeseníky Mts.). Industry plays an important role in the area of Třinec.

Nevertheless, also districts with the lower population density are industrialised (e.g. Broumov, Králíky, Rýmařov). The main difference between the more industrialised districts is the structure of industry. In the Ostrava region, heavy industry with negative impacts on the environment still predominates; in other regions it is rather mechanical engineering (Liberec, Vrchlabí), glass industry (Jablonec nad Nisou, Železný Brod), textile industry (Ústí nad Orlicí) and similar branches. On the Polish side of the border, services play a more important role while the share of industrial employment is a little bit lower. It is a result of deeper decline of industry (mining, textile industry) in this part of Poland accompanied by current high unemployment numbers and out-migration. The following Type 4 is the most frequent type, which characterizes the mountain areas or foot hills of Karkonosze (Lubań, Lwówek Śląski), Orlické hory Mts., Jeseníky Mts. (Kłodzko, Nysa) and Beskids (Cieszyn). In the basin of Upper Silesia and in the area of Bielsko-Biała, heavy industry has dominated until now, partly as Type 2 with the domination of

| Type | Generalized characteristics | Number | Typical districts |
|------|--|--------|---|
| I. | (more) urban areas with a high share of tertiary sector and trend of population growth, but with a very low share of working age population and high share of older population | 8 | Klagenfurt Stadt and Land, Villach Stadt and Land (Austria) |
| II. | (more industrialised) urban areas with a mixed structure of tertiary and secondary sector, high share of working age population and slight population loss | 24 | Bohumín, Havířov, Karviná, Třinec (Czech Republic) |
| III. | urban or rural areas with a higher share of tertiary sector, high share of older population and depopulation | 10 | Nysa, Żąbkowice Śląskie, Kłodzko (Poland) |
| IV. | traditional industrial areas without larger towns with a low proportion of population in tertiary sector, high share of young population and working age population | 29 | Šumperk, Vrchlabí (Czech Republic), Dravograd, Velenje (Slovenia) |
| V. | rural areas with a very high share of primary sector and high share of older population | 13 | Völkermarkt (Austria), Murska Sobota, Lenart (Slovenia), Prudnik (Poland) |

Tab. 3: Clusters description and examples
Source: authors' compilation

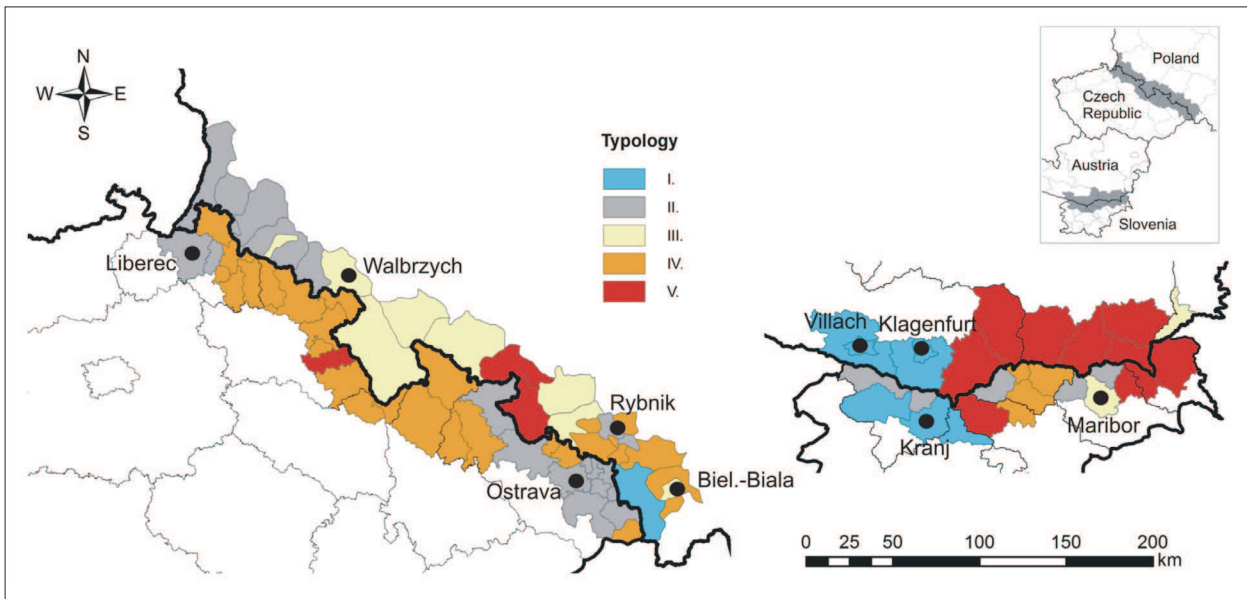


Fig. 5: Complex typology of districts in the Czech-Polish and Austrian-Slovenian borderlands by means of cluster analysis
Source: authors' calculation based on Statistical Offices of Czech Republic, Poland, Austria and Slovenia

industrial employment (e.g. Jastrzębie-Zdrój, Powiat bielski, Powiat wodzisławski) or as Type 3 with the mixed structure of services and industries (e.g. Rybnik area, Powiat raciborski). Głubczyce is the only district with a higher percentage of agriculture.

6. Complex types of socio-demographic and socio-economic variables based on cluster analysis

As indicated at the outset, our main intention was to look at the two borderlands as at a "united space without borders". For this reason we tried to elaborate a complex typology of all 84 units based on all variables, using the cluster analysis described above. The result of the cluster analysis is five types of districts. Table 3 contains the cluster description and typical examples for each type. It is very interesting that these typical examples are mostly concentrated in only one (Types 1–3) or two (Type 4) countries. Fig. 5 shows the location of the types in the borderlands.

The roots of these clusters are based on the long term social and economic path dependent development. If we would have made this analysis for statistical data 100 years ago, the picture would have been quiet similar. For example, one might examine the maps of social and economic structure from the Atlas of the Austro-Hungarian Monarchy based on the 1910 census (Rumpler and Seger, 2010). A surprising picture can be observed especially in the Austrian-Slovene borderland. Here we can find more similarities in the characteristics on the two sides of the border, which rather respect the historic boundaries between Styria and Carinthia than the

current political borders. The long ago established inertia of settlement systems and also the inertia of economic structure are still more important than the political borders. The urban areas of Klagenfurt, Villach, Kranj and Kamnik are characterized by the tertiary sector and in spite of their unfavourable age structure show positive population development (Type I). Rural areas with more agriculture and a higher share of older population (Type V) are shown in the eastern part of the borderland in Austria and partly in Slovenia, where they are interwoven with more industrialized areas with a higher share of working age population.

The same type of inertia can be seen also in the Czech-Polish borderland. Characteristics of regions in the Czech-Polish borderland exhibit markedly greater differences than those in the Austrian-Slovene borderland. The inherited residential and economic structures also participate in the resulting typology of regions and their classification in the respective clusters. Most typical is a long strip of Czech districts along the Polish border characterized as traditional industrial areas without the domination of big towns or cities and currently a favourable population age structure (Type IV). Despite the population exchange, geographical systems remained relatively unchanged. The process of deindustrialisation shows more on the Polish side as well as in Czech Silesia. These regions are also characterized by above-state-average unemployment and strong out-migration. Most of the jobs in industries were cancelled in the 1990s. A good example is the Ostrava conurbation, or more rural but originally industrialized regions of the southwestern corner of Poland.

7. Conclusion

Due to the availability of data, the regional analysis on this small-scale level could only dwell on demographic data, which can only partially reflect regional structure and development. In particular, the structure of employment in the three economic sectors cannot indicate the real economic structure of the borderlands. Nevertheless, the indicators employed show the level of urbanization or tertiarization. It is necessary to take into account that the actual administrative units affected the results of the analysis, too. To be understood properly, long-term demographic processes require the use of at least medium-term time series of population development (in the case of the Czech-Polish borderland unfortunately without the first half of the 1990s). Therefore, statistical analysis provides a first overview of the borderland situation and a starting point for detailed studies.

Regarding the original question, the analysis shows a heterogeneous situation in both borderlands. Partially, adjoining areas on both sides of the border have similar characteristics, for example, a couple of mountain areas with more or less low population density, the urban agglomerations of Upper Silesia and Ostrava, or the rural areas with higher importance of agriculture in Southeast Styria and Prekmurje. In these parts of the borderland, the state border divides areas of principally similar regional structures. Similar structures also result from comparable development processes, for example, early industrialization of foothills and mountain areas in Czech, Polish and Slovenian border regions. The long-term inertia of settlement structures and in part, socio-economic structures, influences current regional development. However, for a certain time, most of the traditional cross-border links and functional relations were disrupted by more or less closed state borders and border areas orientated to national centres. However, not all parts of the two borderlands are actually peripheral areas of their countries. The changes of the last decades considerably differentiated the borderlands along the border. For example, the middle-term population development was more negative on the Polish side of the border (except the most eastern part) than on the Czech side. In the Austrian part of the borderland, the level of tertiarization is higher than in Slovenia. The process of European integration results in a rapidly changing character of state borders, which are no longer physical barriers to be crossed only with difficulties and ever more become an administrative limit of a certain psychological and cultural significance (Vaishar et al., 2007).

In this sense, a couple of similarities between the two borderlands were found. Differences between the Czech-Polish and Austrian-Slovenian borderlands are related to processes the classification of which Bufon (2007) used for his typology of the European border regions. In the Austrian-Slovenian borderland, the dynamic urban areas and the southern part of Styria exhibit a substantial population growth, partly influenced by the agglomerations of Ljubljana and Graz. In contrast, some districts recorded a considerable population loss. In the other areas, the population development is relatively stable. This reflects the heterogeneous structure of the borderland with dynamic urban areas (central places) on the one hand, and traditional industrial or rural areas with diverse problems on the other hand. The whole borderland shows a mild population growth, which is somewhat higher in the Austrian part. Austria is the only one of the four countries that was developing without greater changes over the last decades. Despite the problems during the transition process, Slovenia belongs to successful new EU member states although the Gross Domestic Product (GDP) per capita is still below the EU-27 average: 2008: 91% and 2010: 85% (Lorber, 2008; Eurostat, 2012).

The Czech-Polish borderland is characterized by two fundamental transformation processes: by the population exchange on both sides of the border after World War II and by the Perestroika of the post-socialist states and economies after 1989. Today, GDP per capita (2010) is much higher in the Czech Republic (80%) than in Poland (63% – Eurostat, 2012). Bufon (2007) calls the border regions in Central-Eastern and Eastern Europe transition countries as the “regions under reconstruction”. The negative middle-term population development reflects this situation. Except for the easternmost part, nearly the whole Polish border region is characterized by a substantial population loss. On the Czech side of the border, the population decrease is lower and in three areas the population is stable or slightly growing. A positive change is shown in the areas of Bielsko-Biała and Liberec. However, these areas lack the dynamic centres such as those existing in the Austrian-Slovenian borderland. As to the population development and employment structure, the situation is heterogeneous particularly in the agglomerations of Ostrava and Upper Silesia.

Cross-border cooperations are often based on similar potentials, problems or interests, for example, in nature conservation, management of resources and environment, regional or rural development and different economy sectors. On the other hand, interactions across the border for working, shopping or

recreation are rather due to different structures such as complementary offers in the neighbouring country that are within easy reach. The Jeseníky Mts. on the Czech side of the border and two lakes near the Nysa R. on the Polish side provide such complementary offers that are frequently used for recreation by people living on both sides of the border. For a better understanding of how to use the various potentials for improving cross border relations and collaboration, we have to employ a wider range of analyses including network analysis,

surveys and qualitative interviews, which give us a more complex view of the border regions.

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