Central European Regional Policy and Human Geography

University of Debrecen
Department of Social Geography and Regional Development Planning
Central European Regional Policy and Human Geography

Central European Regional Policy and Human Geography is a scientific publication, with an international status. The Journal is issued under the aegis of the University of Debrecen, Department of Social Geography and Regional Development Planning. The printable format (2 issues per year) is supported by the on-line version with materials published with an abstract and the full version free of charge.

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HU ISSN 2062-8870 (Print)
HU ISSN 2062-8889 (Online)
www.cerphg.unideb.hu
CONTENTS

Alexandru ILIEȘ – Jan WENDT – Dorina Camelia ILIEȘ – Vasile GRAMA
Romanian/Ukrainian borderland (Northern Sector) typology determined by the administrative territorial units (NUTS 3)
(Art#2011-8) ........................................................................................................ 7

Matej JAŠŠO
Analysis of the stakeholder perception of the strengths and weaknesses of metropolisation and polycentric development in Central Europe (POLYCE): Bratislava case study
(Art#2011-9) ........................................................................................................ 15

Zoltán BUJDOSÓ – Lóránt DÁVID – Bulcsú REMENYIK – Géza TÓTH
Connection between tourism and regional development on the Hungarian-Croatian border
(Art#2011-10) ........................................................................................................ 27

György CSOMÓS
Role of cities in the economy of Central Europe: some measurement methodologies
(Art#2011-11) ........................................................................................................ 41

Shaul KRAKOVER
Cross border interactions across formerly hostile border: The case of Eilat, Israel and Aqaba, Jordan
(Art#2011-12) ........................................................................................................ 51
ROMANIAN/UKRAINIAN BORDERLAND (NORTHERN SECTOR)
TYPOLOGY DETERMINED BY THE ADMINISTRATIVE TERRITORIAL UNITS (NUTS 3)

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Abstract. The study aims to analyze the Romanian-Ukrainian EU border, northern section, on a 440.1 km stretch. Using the tools and applying the methods certified in the specialized literature, we set forth a typology of the border areas, namely indicators related to the management, position, border symmetry/asymmetry, border accessibility, a useful step in the elaboration of cross-border cooperation processes. The knowledge of the territorial administrative units under the morphometric, morphographic and morphodynamic aspects represents the key of such a scientific step. Meanwhile we obtain values which set the hierarchy and define as realistically as possible the border position.

Keywords: border, territorial administrative unit, Romanian-Ukrainian border, EU external border

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INTRODUCTION

Besides the consecrated principles and concepts as a theoretical basis and practical applicability, an important role in the development of cross-border and interregional cooperation strategies is played by the typology of the territorial administrative organisation of the contiguous states and the cross-border practical potential. By this study, applied to the northern sector of the Romanian/Ukrainian border we set forth a series of qualitative and quantitative structures and indicators generated by territorial realities and which reflect objectively the real and differentiated interconnectivity potential of the territorial
administrative structures, their places and the inland extension of the generated cross-border systems. Under the administrative aspect, along a 440.1 km winding border, the corresponding administrative territorial units between the two states as main actors\(^1\) (NUTS 3-5 in Romania and the corresponding for the Ukraine) are: counties (NUTS 3)/municipalities, cities and communes (NUTS 5) in Romania and regions/districts in the Ukraine (Figure 1).

**Figure 1** Romanian-Ukrainian cross-borderland: Cross-border symmetry/asymmetry index and Border harmonization index

**METHODOLOGY**

The administrative territorial units are analyzed, whose boundary coincides with the state border stretch (with a border character) in terms of accessibility at the nodal existing (potential) points which can ensure the connections between the contiguous territorial border systems. The elements taken into account in order to determine the typology and hierarchization of border accessibility and cross-border connectivity rely on: absolute (geographical) and relative position (insertion of the unit within a territorial structure of superior rank and dimension) of the administrative territorial unit and its hearth; distance of the hearth versus the border and versus the closest border crossing; morphometric features of the border; morphology of the natural setting; nature of the border line support; configuration of the communication and transportation ways’ system with potential for cross-

\(^1\) “The local council and the county council of the administrative-territorial units adjacent to the border areas may conclude crossborder cooperation agreements with the corresponding authorities of the neighbour countries under the terms of the law” (Paragraph 1, article 13, Law 215/2001)
A series of indicators are revealed by the combination of these elements which can contribute to the hierarchization of the administrative territorial systems of the same level (NUTS 3-5) concerning the real cross-border position and accessibility.

In the structure of a territorial system, the natural and the man-made settings intermingle, overlap and condition themselves in defining some systems of relations which lay at the basis of its functionality (Bufon, 2004; Cocean, 2005; Cunha, 1998; Forster, 2000; Ianoș, 2000; Ilieş et al., 2009; 2011; 2012; Johnson et al., 2011; Martinez, 1994; Süli-Zakar, 2002; etc). Using principles, methods and tools verified by the specialized literature, our approach represents the backbone of a scientific structure which aims to substantiate answers to questions such as where? why? and how? The typology of cross-border systems, correlated to the status of state-border in relation to EU’s external border also plays an important role in defining the functionality of determined cross-border functionality (Ilieş et al., 2010a; 2012).

At the basis of development systems of cross-border relations with a high degree of functionality lies the persons’ and merchandises freedom of movement, namely the ease of penetrating the state border barriers. The border system can be delimitated inland on more criteria among which we mention: extension of the border counties (Ilieş et al., 2011; Topaloglou et al., 2005); the stretch made up by the parallel border line at a 25-30 km distance from it (Bufon, 2002; Ilieş and Grama, 2010b; Ilieş et al. 2011; Lichtenberger, 2000); the contiguous rings formed from the local rank administrative territorial units (corresponding to NUTS 3 or NUTS 5) (Ilieş, 2010, p. 97).

**BORDERLAND DETERMINED BY THE ADMINISTRATIVE TERRITORIAL UNITS (ATU) CORRESPONDING TO NUTS 3**

The Romanian area is constituted of 4 border counties (Figure 1) with a total area of 24,261.4 sqkm and a population approximately two million inhabitants (2010) which represents 10.2 % of the surface and 10 % of Romania’s population. It is also structured at its turn (NUTS 5) at the level of 114 municipalities and cities (42.7 % out of total for Romania), 1,315 communes (48.7 % of the total) made of 5,627 villages (41.8 % of the total). As far as the human potential is concerned 39.6 % of Romania’s urban and 48.96 of Romania’s rural population live in the determined borderland.

In the Ukrainian area corresponding to the same border sector, the territorial administrative division does not have a similar level and correspondence to the Romanian counties, which in terms of territorial extension is situated between regions (greater) and rayons (smaller). In these circumstances the Ukrainian borderland corresponding to the common border sector with Romania can correspond to: 3 regions (Zakarpatska, Ivano-Frankivska and Cernivetska) amounting to 34,800 km² and a population of 3.5 million inhabitants or 10 districts amounting to 11,563.8 km² (Figure 1).

In order to highlight the degree of cross-border suitability of the contiguous border administrative systems we set forth the calculation and interpretation of the following indicators (Ilieş and Grama, 2010b) with exemplification at the level of the analyzed area:

**a.) The crossborder symmetry/asymmetry index** results from the ratio between the border ATU surfaces (Figure 1). The closer to 1 the value of this indicator the higher the cross-border symmetry degree is and contrariwise, i.e. the further to 1 (below and over 1) the value the higher the cross-border asymmetry degree is. In the case of two contiguous border areas which form a cross-border land the less extended one will have more than one value (below 1) and the one more territorially extended will have more than one value (over 1). We appreciate that the values comprised between 0.8 and 1.2 suggest a cross-border land formed from the
border areas with symmetry trends. The values below 0.8 can represent borderlands with an unfavourable asymmetry and the ones over 1.2 with a favourable asymmetry within the structure of some asymmetric cross-border territorial systems. In order to determine a typology we set forth the following categories: symmetry trends (0.8-1.2), favourable average asymmetry (1.2–1.6); unfavourable average asymmetry (0.4-0.8); unfavourable exaggerated asymmetry (below 0.4); favourable exaggerated asymmetry (over 1.6). For instance, in the case of the Romanian-Ukrainian cross-border territorial system (county/region) the values for the two border systems is of 1.43 (Ukrainian/Romanian) and 0.69 (Romanian/Ukrainian) suggest an average asymmetric cross-border territorial system favourable for the Ukrainian part. This kind of analysis can be achieved also at the level of the administrative/territorial units of upper/lower rank to the NUTS 3 level (Figure 1).

In the case of the Romanian/Ukrainian cross-border territorial system (county/rayon) the values for the two border systems of 0.48 (Ukrainian/Romanian) and 2.1 (Romanian/Ukrainian) suggests an exaggerated asymmetric territorial system, favourable for the Romanian part. In the case of the third version of the Romanian/Ukrainian cross-border system (NUTS 5/rayon) the values for the two border systems are of 2.8 (Ukrainian/Romanian) and 0.3 (Romanian/Ukrainian) and suggest an exaggerated asymmetric cross-border territorial system favourable for the Ukrainian part. From the ratio between the values of the symmetry/asymmetry index (subunitary/more than one value) obtained from the three combinations (Figure 2): county/region (0.48), county/rayon (0.22) and NUTS 5/rayon (0.1) it comes out that the cross-border system made up of counties and regions represents the optimal choice as it is closer to one (perfect symmetry).

b.) The internal/external contiguity index $(I_c)$ represents the degree of connection of the ATU to the national territory or to that of a higher rank region and its value results from the ratio between the length of the section which coincides with the state border ($L_b$) and the length of the internal limit sector ($L_i$) after the formula $I_c = L_f / L_i$ (km). When the value of this indicator is subunitary (below 1) which represents a border dependency, namely a border contact line longer than the internal one, which means that that ATU has the status of a "bugle" of the political territorial system which it belongs to and implicitly "the internal contiguity" is lower than the "external" one; more than one (over 1) which represents internal dependency in terms of the contact line with the political territorial system which it belongs to; value equal to one which signifies contact in equal proportions with the internal system and the contiguous border one. This indicator can be used in the elaboration of planning strategies and border and cross-border territorial planning by the fact that it reflects the position of each ATU in relation to the political territorial system which it belongs to.

For the Romanian-Ukrainian cross-borderland this indicator is analyzed at the level of regions and rayons (Ukraine), NUTS 3 and NUTS 5 (Romania) (Figure 2). The external contiguity of the counties Botoșani and Satu Mare is obvious, namely of the communes Tarna Mare (1.66), Porumbești (0.95), Remetei (0.97), Bocicoiu Mare (0.99), Păltiniș (0.84). Contrary to this situation are the communes which despite their border status, have a high internal contiguity index: Certeze (0.03), Săpânța (0.09), Rona de Sus (0.06), Borșa (0.05), Hilișeu-Horia (0.06), Cristinești (0.06) etc.

These indicators represent useful tools in the elaboration of strategies and territorial planning designs especially in the borderlands area.
Figure 2 Romanian and Ukrainian borderlands and Contiguity Index value and Border Harmonization Index
CONCLUSIONS

The EU external border section corresponding to the state border of Romania represents one of the longest and most complex from a structural and morpho-functional viewpoint. In this sense, the introduction of indices of: cross-border symmetry/asymmetry; internal/external contiguity a.s.o., represent useful tools in politics and territorial planning strategies in the interregional border and cross-border regime. Thus the models of cross-border territorial systems determined by the particularities of administrative territorial units exemplified at the level of the territorial cross-border Romanian-Ukrainian system, corroborated with the role and functions of the border, can constitute important landmarks in defining the cross-border cooperation strategies, mainly at the external EU border.

As far as quality and quantity are concerned the indicators set forth and calculated in the case of the northern sector of the Romanian-Ukrainian border highlight the fact that the Romanian-Ukrainian cross-border territorial system (EU/non EU) even though it possesses an alternation of favourable and restrictive sectors for cross-border interconnection, under a political administrative aspect a common activity is required which aims mainly to make the two NUTS 3 contiguous border systems suitable/compatible also at lower levels. The values resulted in the case of the proposed indexes highlight the asymmetry of the Romanian-Ukrainian cross-border system in terms of extension, internal structure and typology of the ATU rank, namely the morphostructural differences between the two contiguous border systems. All these, corroborated with the administrative decentralisation degree, the role and functions of the decision-making centres (main actors) compete for the differentiated multiplication of the number of involved actors in the elaboration, application and responsibility assumption of a development strategy, namely greater difficulties in synchronizing the decision-making centres on panels and hierarchy.

Acknowledgements. This contribution presents results from research projects PN II 751/2007; Cultureg, Modul III – Partnership Romania/Slovenia2010. The authors acknowledge to anonymous reviewer for their thoughtful suggestion and comments.

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ANALYSIS OF THE STAKEHOLDER PERCEPTION OF THE STRENGTHS AND WEAKNESSES OF METROPOLISATION AND POLYCENTRIC DEVELOPMENT IN CENTRAL EUROPE (POLYCE): BRATISLAVA CASE STUDY

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Abstract: New role of the Central European cities within the processes of cooperation and competition highlighted their need for metropolisation and balanced polycentric development. Metropolisation as a process of concentration of new economic and social functions of the cities having an impact on their polycentric spatial development was the research focus of the ESPON Project POLYCE. This project evaluated and compared metropolitan characteristics and polycentric spatial relations of 5 Central European cities (Bratislava, Budapest, Ljubljana, Prague, Vienna) and their metropolitan regions. The article refers on the methodology of survey of stakeholders perception of the strengths and weaknesses of the examined cities with special emphasis on the city of Bratislava. Overall profile of the city, its potentials, strengths and weaknesses, future perspectives and realisation of inclusive metropolitan development are entirely analysed.

Keywords: metropolisation, polycentricity, strengths and weaknesses, competition and cooperation of the cities

INTRODUCTION ON METROPOLISATION AND POLYCENTRICITY

Metropolisation and polycentricity have become important scopes of the disputes of spatial planners as well as focuses of many research activities in recent years. Central Europe with plethora of specific conditions and peculiarities of spatial development represent a immense research challenge within this field (e.g Bourdeau-Lepage and Huriot, 2002; Jalowiecki, 2008). There have been appeared many definitions of the both above mentioned processes. According to Elissalde (2004), metropolisation is a notion built through extension of the term “metropolis” (etymologically: the mother-city) in order to designate a process of qualitative transformation, both functional and morphologic, of very large cities. These processes (metropolisation and polycentric development) are almost always mutually interlinked. Giffinger et al. (2011) is mapping out several different approaches toward the process of metropolisation. Metropolisation might be characterised as:

- A spatial concentration of (new) economic functions and population having an effect on its growth and spatial extension through immigration (Friedman, Geyer – in Giffinger, 2011, p. 6)
- A node of global networks of material and immaterial flows exercising command and control functions with excellent connectivity between each other (Keeling – in Giffinger, 2011, p. 6)
• The emergence of knowledge intensive economic activities in specialized branches of production or service (Krátke – in Giffinger 2011, p. 6)
• a relatively high spatial concentration of metropolitan functions in the urban agglomeration (BBSR – in Giffinger 2011, p. 6)

Metropolisation within the POLYCE project is deemed always as a continuous process, revealing the given city’s ability to compete in international competition. This process is parallely running in many fields – social, economic, demographic and has certain spatial outcomes and attributions. Bourdeau-Lepage and Huriot (2002) emphasis the procesual nature of the metropolisation and describe it as „the process whereby certain cities adapt to the emerging post-industrial economy by concentrating locally interacting high-order, information using activities that both enable and structure global interactions“.

Theoretical and methodological background of the process of competition among cities is based upon the theory of territorial capital (Camagni, 2009). Territorial capital is a sum of various assets and potentials of the given city, helping it to reach favourable position within this competition. Metropolisation is in certain aspects an effective allocation of territorial capital within various fields and dimensions and cannot be reduced to economic aspects. Generally, metropolisation might serve as a cover term for various strategies, concepts, attempts of cities to adjust to the requirements of post-industrial society.

Initial debates on polycentricity had began back in the 90-ties. Polycentric concepts refer to the systems with more than one spatial pole. Early mentions of polycentricity are present in the European Spatial Development Perspective (ESDP) (CEC, 1999) and are also present within the ESPON programme (2005). The approaches differ and polycentricity might be analysed either in morphological or in functional way (Giffinger, 2011). Within the POLYCE project research activities, polycentricity has been defined on the micro, meso and macro levels. The polycentricity in urban systems of the Central European - Danube global integration zone was researched on three territorial scale levels:
• polycentricity on intra-metropolitan level of individual capital cities;
• polycentricity on the international level of Central European - Danube macro-region;
• position of global integration zone of Central European - Danube macro-region within Europe.

POLYCE PROJECT

POLYCE project was designed to find plausible answers on the questions and issues related to further developments of polycentric urban systems of the Central European - Danube global integration zone. Cities of Budapest, Bratislava, Ljubljana, Vienna and Prague and their metropolitan regions were in the spotlight. Analysis and comparison was based upon the supposition that both competitive and cooperative patterns among these cities are related to their metropolisation and polycentric development. Competitiveness of whole Central Europe, based on these cooperative and competitive relations among above mentioned capitals will help strengthen the current position of Central Europe – Danube area within Europe. This will then contribute to more balanced Europe-wide territorial development and to the overall competitiveness of EU within global economy. The project aims to increase the awareness of regional position within Europe and mutual sharing of knowledge and experience in territorial (metropolitan) development (more in Giffinger 2011).

Previously known evidence and knowledge gathered under various ESPON projects and initiatives were completed by additional information and data obtained from desk research, analysis of various documents and databases as well as from interactive methods
Analysis of stakeholder perceptions of the strengths and weaknesses of .......

The project had four main objectives (more in Giffinger 2011):

- analyze and assess polycentric system in Central Europe Danube region
- develop and compare profiles of capital city metropolitan areas
- identify strengths and weaknesses of metropolises through stakeholder assessment
- elaborate strategies for strengthening the polycentric urban system within sustainable development perspective.

STAKEHOLDER ASSESSMENT OF THE STRENGTHS AND WEAKNESSES OF THE 5 METROPOLIS

Stakeholders perception of the strengths and weaknesses of the 5 examined metropolis (Budapest, Bratislava, Vienna, Prague, Ljubljana) were the main topic of the particular workpackage, led by Slovak University of Technology in Bratislava. Our effort was aimed to investigate the perceived spatial characteristics of the five cities with regard to environmental, economic, social and psychosocial aspects. The main aim was to help perform qualitative evaluation of the strengths, weaknesses, potentials, assets and challenges of the examined core cities and their metropolitan regions. Data and research outputs generated by the activities within the survey among stakeholders were complemented by thorough quantitative assessment of spatial characteristics surveyed in other work packages. Results generated by the survey had shed an additional light and had revealed the contexts in which the exact data examined in the other workpackages were settled.

Main tasks of this - predominantly qualitative - survey were the following:

- to facilitate participative assessment of perceived strengths, weaknesses, potentials, assets and challenges for each city
- to compare major strengths and weaknesses of each city
- to analyze and compare the profiles of the five cities at the local and regional level
- to detect relevant synergy effects of the five cities and their cooperative efforts

Methodology

Questionnaires (completed and precised by an additional interviews, if necessary) have been set up as the main interactive method for the survey. They served as a tool to identify and assess perceived spatial characteristics of each core city and its metropolitan region. The word “perceived” indicates that we are not measuring/examining knowledge but rather subjective category of attitudes, opinions and lean. These categories are not measurable directly. The most renown definition states that attitudes are learnt predisposition to favouring or refusing reaction toward given object, person or event (Fishbein, Ajzen – in Hayes, 2003, p. 95). Generally, the attitudes are learnt, mutually consistent, stable in time and space and are concerning the positive or negative reactions. Each attitude has cognitive (opinion based on rationalities), emotional (feelings and emotions) and behavioural (willingness to act) dimension. Our questionnaire was also mapping out the opinions. While attitudes are more difficult to research, because they might be hidden and invisible, are stable
in space and time, are deeper anchored and usually are more related to abstract and philosophical themes (ethic, truth, moral...), opinions are more rational and civil, more focused on external, non-personal issues (e.g. the proper approach toward technical difficulties conducting the revitalisation of urban area...) and are easier to measure and to evaluate. The questionnaires included open, as well as semi-open and closed questions. The following techniques were used to structure the particular items of the questionnaire:

**Likert scales**
Likert scales are one of the most frequently used methods for evaluation of attitude/behaviour related to the proposed topic/statement/thesis. Most frequently, this tool is measuring the degree of agreement with the proposed statement – e.g. measuring the degree of trust, positive affiliation, willingness to act etc. This degree reflects the attitude of the individual. A Likert-type scale consists of a series of declarative statements. The subject is asked to indicate whether he agrees or disagrees with each statement. Commonly, five options are provided: "strongly agree," "agree," "undecided," "disagree," and "strongly disagree." Other Likert-type scales include four or six steps rather than five, excluding the undecided position. We used the 4-option scale in one question and 5-option scales in two questions. The 4-point scale tends to over-scale the answers, going to extreme values more than the 5-point Likert scale. To some extent and in some cases, it can exaggerate the answers, so we restricted this scale (4 points) to only one question. The measured attitude was modified from the simple approval (agree-disagree) toward the expression of perceived importance (low-high) and performance (low-high).

**Semantic differential**
Semantic differential is a scale designed by Osgood in 1957. Its main aim is to measure connotative meaning of persons, objects, events or concepts (more e.g. in Maranell, 1974). Respondents have to evaluate the connotative characteristics of given object/concept on the bipolar scale consisting from mutually opposite adjectives („good-bad“). Connotative meaning means that they are not assessing the objective facts, but rather subjectively evaluating the proposed characteristics and traits of the examined object/concept. Respondent should indicate his/her personal opinion within the given scale. Attitude measurement has been examined in sociology, psychology, political science etc., in many ways and approaches and semantic differential technique has proven to be a well-respected measuring device within this filed. In our questionnaire, the semantic differential (measuring the leans of respondents toward certain connotations, e.g. the perceived characteristic/traits of the city) was used in one question (city image). Respondents were asked to express their personal evaluation of the examined characteristic of the city on the bipolar scale.

**Semi-forced options**
Several items in our questionnaire were constructed via semi-forced option method. Respondents had to opt from the proposed list of options. Multiple answers were possible. Selection of the adjectives should inspire the respondents to take into the consideration different aspects of the evaluated subject. Even the mutual compatibility/incompatibility of the selected characteristics might bear a diagnostic value (if somebody picked up the social environment both as friendly as well as split/apart, it may indicate that social environment within the city significantly differ in various locations/segments/milieus).

**Open-ended questions**
Open-ended questions provide more space for individual assessment, presentation of own particular point of view and the feedback toward the survey. Respondents are not forced to opt from the given answers, but are encouraged to formulate their own opinion, answers and
reactions to relevant subject. Their answer is not strictly limited by time and space. There are issues which are so complex, multidimensional or unique, that standardised scales are inappropriate to use. Open-ended questions represented the majority of the surveyed items in our questionnaire. Due to the limited sample of interviewees, we can focus on individual perception of those issues. This method enables to concentrate on unique, specific and peculiar features of the investigated cities.

**Selection of respondents**

Appropriate selection of respondents is fundamental precondition of the validity and reliability of every survey. Due to the limited number of respondents, we could not take into consideration the usual demographic and social criteria (age, sex, education etc.). First we tried to set up the basic common criteria. We agreed that selected respondents should be competent to assess the questions/issues, be from different professional background and should be enough motivated to participate. The profile of the sample of the respondents in each particular city should be mutually comparable according to several indicators. We agreed that the representatives of the following sectors should be included: politics, planner from the capital city, chamber of commerce, economic development agency, academic milieu, project management on the city level, international enterprise, international public (non-profit) organisation, culture, tourism, NGO, private planners and representatives of the municipalities outside of the examined city/metropolitan region.

**Content analysis of the questionnaire**

The content of the questionnaire might be divided onto three thematic scopes:

**Part 1**

The first part dealt with the recent development of particular city in economic, social, environmental and infrastructural terms, as well as with the overall profile of the city (performance of city, image, social climate, past achievements and failures). It integrated both the items which are perceived more subjectively and even emotionally (image of the city, social environment) and the items assessed more rationally (overall development and performance of the city in the delimited dimensions). First 5 questions delimit the framework for general subjective evaluation of city particular achievements and setbacks, with the opportunity to describe its individual subjective connotations creating unique identity. This part of questionnaire is rather descriptive and empirical. We had tried to involve respondents into the topics the questionnaire is mapping out and to give them proper opportunity to express their subjective and individual opinions.

**Part 2**

The second part dealt with the future perspectives of the particular city. The future potential was revealed on the background of the existing strengths and weaknesses. There was no particular specification of the fields where the strengths and weaknesses should be assessed, but the emphasis was placed on the issues that might be actively shaped and influenced by the city itself. This part of questionnaire was rather analytical and more in-depth oriented. Questions used in this part required certain degree of knowledge and expert orientation in the field of urban and regional development of the particular city and its metropolitan region. We strived to gain certain balance, asking for most significant strengths and weaknesses, and for the most important and most challenging/controversial actions within city’s territory. Implication of those events/projects on the positioning of the city is the last item of this part of questionnaire. Deeper and rather complex evaluation of the past and running activities revealed indirectly the attitudes of the respondents (whether they tend to prefer more social
oriented, environmental friendly solutions or they appraise rather neoliberal, progressive, business driven actions etc.).

**Part 3**
The third part of the questionnaire dealt with the cooperative initiatives and factors that are important for an inclusive metropolitan development (factors important for cooperative effort, fields of cooperation, partnerships, strategic recommendations etc.). This section of the questionnaire was focused on measuring the attitudes (what are the preconditions for effective cooperation) and the reflection of satisfaction with the current state of art within this field (degree of satisfaction related to factors conditioning the effective cooperation in respective city). Further questions were investigating the importance of particular fields of metropolitan development with regard to cooperation, attractiveness of the city as a partner, potential future partners for cooperation and strategic recommendations for the future. Last item of the questionnaire was set up as an open question, giving opportunity to include previously forgotten issues and making respondents more involved into the research. We expected that this last question might shed some inspirative light on the important fields of future development, strategic direction, visions etc. These impulses were further discussed and evaluated on the local conferences in each respective city.

**BRATISLAVA CASE STUDY: INTERPRETATION OF THE RESULTS**

**Overall profile of the city of Bratislava**
The results of the questionnaire indicate that Bratislava is predominantly considered as centre of research and education, dynamically growing city, historical city and centre of finance and business. Adjectives „city of tourism“ and „dormitory city“ were mentioned less frequently. Despite high frequency of perception of Bratislava as centre of research and education, the city was never mentioned as city of innovantion. Similarly, despite an industrial past, the city was never mentioned as industrial city. Among the other adjectives, the following ones appeared: „gateway to West“, „Danubian city“ „conservative city“ and „city of thieves“. The results indicate that the mainstream perception of the city is related to historical heritage and recent economic development (before crisis), tourism is considered as a minor characteristic. Respondents preferred generally positive connotations. On the other hand, we should bear in mind, that respondents always tend to be rather careful/positive in first questions (social desirability), unleashing their criticism in later stages of questionnaire.

**City image and social climate**
According to opinions of our respondents, Bratislava is predominately perceived as an expensive and perspective city. It is rather questionable, whether this was influenced by media discourse, displaying lately Bratislava as a promising, high growing, perspective but on the other hand overpriced city. In the second rank, Bratislava is also perceived as attractive, friendly, hectic, safe and self-confident city. Leans toward other adjectives (unique, dirty, progressive, spacious/dense, noisy, rational, simple) were not significant. The opinions of respondents are not extremely polarised.

Social climate in Bratislava was considered to be indifferent, competitive, split apart and snobbish. Although the social climate was never perceived to be hostile/frightening, this clearly indicates critical and rather negative perception of this field. The positive connotations – supportive, tolerant, friendly and cooperative - were mentioned less frequently. Such expressions indicate a lot of conflict potentials (attractive place with plethora of contradictory interests...) and low societal cohesion with individualistic and
business driven climate. Respondents were heavily polarised in their opinions – they either perceive social climate clearly negative (split apart, indifferent, snobbish) or clearly positive (supportive and friendly). Results were influenced with the fact, that respondents with negative perception of social climate opted for more alternatives than respondents with predominantly positive assessment. Put into the context, the word competitive is here deemed rather in negative connotations (competitive social climate without sensitivity to the needs of others).

Photo 1 Bratislava City Centre

**Overall development over the last 5 years in different dimensions**

The overall development of the city in the economic, societal, institutional, infrastructural and environmental dimension was the main focus of this part of the questionnaire. Economic dimension was easily the best evaluated dimension. Bratislava is considered as business location with high attractiveness and high competitiveness. The only dimension with lower score was research and innovation. It seemed that respondents leaned toward the belief that succesful economic development of Bratislava in recent years was not sufficiently backed by research, development, innovations etc. Societal dimension is perceived more sceptically: especially social integration and international orientation/open-mindness were rather mediocre. On the other hand, social mobility was rather high, it seems that respondents took into the consideration considerable share of employers from other Slovak regions employed in Bratislava business landscape. Environmental, infrastructural and institutional dimension were confronted with heavy criticism. Almost all surveyed dimensions were assessed below average. Especially sustainability of land use structure, green mobility, quality of public services and e-governance were considered to be weak points of Bratislava. Quality of above mentioned services was considered to be poor. Opinions were heavily differing when assessing the environmental quality. While societal, environmental and infrastructural dimensions were evaluated with high polarity of opinions, there is a consensus that economic
dimension is the strongest part and institutional dimension is easily the weakest part of Bratislava’s development.

Positive and negative projects/events/activities
The positive project/events/activities might be summarised within the following groups of issues:

a) crossborder cooperation and common activities with neighbours
Almost all activities within the crossborder cooperation were perceived positively, with the focus on cooperation with Vienna and Bundesland NiederOesterreich. Intensification of train connection between Bratislava and Vienna, preparation activities for building a bridge for cyclists, public transport of Bratislava operating in Hainburg and Wolfstahl as well as regional cooperation with Hungary was mentioned as clearly positive examples of recent activities on the territory of Bratislava metropolitan region.

b) transport issues
Respondents assessed positively some building activities improving the connectivity and accessibility of Bratislava. Especially bridge Apollo, tunnel Sitina and some highway bypasses were mentioned as positive examples. However, the transport infrastructure remain one of the critical issues of Bratislava.

c) project Eurovea and other shopping centres
Eurovea is one of the success stories of recent development in Bratislava. This project has been positively reflected both by the professionals as well as the broad public. Respondents appreciate especially the sensitive approach toward the river Danube and public spaces. Eurovea offered several choices without compromising the different needs of public: contact with new national theatre, generous public spaces, contact with Danube as well as various retail shopping opportunities. This place was previously a derelict plot, cut off from the centre and was never a part of the collective memory of the city. Current state of art is offering new opportunities to reflect specific urbanity on the contact zone with the river.

d) international events
Various international events, especially World Icehockey Championship, summit Bush-Putin, NATO conference have been mentioned as milestones making Bratislava European metropolis.

The negative projects/events/activities might be summarised within the following groups of issues:

a) River Park and PKO
Project River Park and plans of demolition of cultural centre PKO were mentioned several times as a primary example of new arrogant planning culture brought to Bratislava by the new wave of developers after millenium. Entire River Park project has been perceived controversially from the beginning; arguably becoming a symbol of ruthless dominance of international capital over the local genius loci. The place was a part of collective memory of inhabitants and despite problematic architectural value of the existing buildings from early modernism, it still symbolised cultural values for many generations of citizens in Bratislava. Project River Park, although backed by prominent Dutch architect Eric van Eekeraat and rather heavy public relations campaign, was an example of total failure of communication with public. Its arrogant superposition over the river Danube became symbol of ignorance and arrogance.

b) Public spaces in general
Public spaces in general are perceived to be neglected, not systematically included in the spatial development of the city and to be permanently threatened by new building activities. It has to be taken into consideration that with regard to positioning of Bratislava, public
spaces are compared with other European metropolises and this comparison is not always favourable for Bratislava.

c) new flagship building projects after millennium
Many new building projects were reflected with criticism. Except of River Park, the most reluctant attitude of respondent are bound to the projects of new National Theatre, Aupark Tower, new Ice-hockey stadium, hotel Kempinsky, Kollárovo square rebuilding etc. These solitaire projects do symbolise for respondents (and probably also for broad public) new individualistic, ruthless and aesthetically problematic planning culture, which left inaffable traces on the face of Bratislava.

d) others
Among other issues negatively perceived, the following ones appeared: delay of new masterplan, airport Bratislava and its diffuse position on international market and poor services, high density in suburbs, evaporation of wineyards, atrocious condition of the main train station, dissolution of the historically precious architectural shapes of early modernism...

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**Photo 2** Eurovea

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**Perspectives for future development**

**Strengths and weaknesses of the city**
Among the most significant strengths of the city of Bratislava we could find its geographical position, international connection (Vienna, Budapest, Prague), culture and history, old city centre, qualified human resources and workforce and low unemployment rate. On the other hand, the most frequently mentioned weak points were the city marketing, services, greenery, corruption, beaurocracy, passivity, lacking conception and lack of
multiculturality. It is obvious, that while strengths are more related to the given characteristics, the weaknesses are more related to management of the city (infrastructures, services) and decision making (bad decisions). There is strong feeling that extraordinary potential of Bratislava is continuously wasted and mismanaged.

Most promising/challenging projects or activities for future development

Among the most promising/important projects the following ones were mentioned frequently: highway bypass, Eurovea, transit of transport, airport reconstruction (new terminal), new sporting facilities, train corridor TENT, tramway to Petržalka, 4th quadrant and renewal of Danube delta, reconstruction of Hurban’s garrison, reconstruction of heating plant on Čulenová street, Bratislava festivals and cultural events, coordination of spatial development with neighbours (Austria, Hungary). On the other hand, among the most controversial projects/activities we can find River Park, oil pipeline (Žitný ostrov), new administrative developments in general, icehockey stadium, hospital Rážsochy, Dell building, suburb Dlhé diely, suburb Bory, running building activities within the slopes of Carpathian mountains, reconstruction of main train station.

There was high degree of heterogenity within the sample of answers. Respondent did see promising perspectives mainly in some transport and infrastructure projects. It is obvious, that attention was also paid to restoring of architectural heritage and some cultural events. On the other hand, some building and new development activities were considered rather controversial.

Realisation of inclusive metropolitan development

Preconditions for cooperation – in general and in the Bratislava particularly

Legal stability and transparency in decision making were the most relevant preconditions for cooperation in general. Political stability and legitimacy of political administrative system were considered to be important in second rank. Neither social security nor environmental awareness were the priorities with this regard. If we analyse the importance of the selected fields with regard to situation in Bratislava, there is slight decline in importance practically in all items. The most important were considered legal stability, political stability, transparency in decision making, proactive behaviour of citizens and open-mindedness of society. Social security and participation tradition were left behind.

Differences between the general importance and particular importance in Bratislava were not significant. We recorded considerable inflation of rankings (some respondents tend to consider important everything) inflicted probably by the phenomena of social desirability (tendency to answer in concordance with the supposed expectations of examiner). Maybe some of terms would require precise definition.

Importance of cooperation for positioning of the city

According to our respondents, cooperation on the level of metropolitan region should concentrate on the following groups of issues:

a) coordination of spatial development

Several responses tackled the need of more coordinated approach toward spatial development and development of settlement structures. This is reflected in the need for more intensive communication concerning the masterplans and various other planning documents.

b) improving the infrastructure, especially transport

Infrastructural issues (TEN-T corridor, integrative metropolitan public transport, highway bypasses etc.) were also in the spotlight.

c) tourism and services
Bratislava should more cooperate with its metropolitan region with regards to services and tourism activities.

d) other issues

Among other issues social security, research and development, human resources and education, environmental issues seem to be most essential. Cooperation with other cities should be focused on transport issues and connectivity, social issues, tourism and environmental problems. The most important partners were mentioned Prague, Vienna and Budapest. Occasionally some distant cities were mentioned (Chinese cities).

Existing cooperation with other cities and potential future partners

There were few (almost none) answers concerning the cooperation initiatives within the Bratislava metropolitan region. Eurocities, Euroregion of 2nd Category Wien-Bratislava-Gyor-Brno, Danubian strategy and projects CUPA and Donauregionen were mentioned several times when mapping out the cooperation with other cities (including POLYCE cities). On the other hand, Bratislava is clearly considered to be attractive partner for cooperation. The following arguments we found to be essential:

- Bratislava has good geographical position, attractive natural surrounding (river, mountains)
- Bratislava has good potential to interlink its settlement structure with the settlement structures of neighbouring countries (Hungary, Austria).
- Bratislava has considerable economic strength and pursue power – this may help to find prosperity for smaller cities in the metropolitan region
- Bratislava is one of the few former „Ost-block“ cities which is performing better than many of „Western“ cities.
- Bratislava is a gateway to Slovakia and Eastern Europe
- Bratislava is really „little big city“ offering pleasant moderate scale

Potential future partners within metropolitan region were the cities of Malacky, Pezinok, Senec, Trnava, Nitra. Among the other cities (almost all abroad) Vienna was mentioned almost by every respondent. The other potential partners are Budapest, Brno, Prague, Salzburg, Žilina, all EU capitals, all Danubian cities and even some exotic cities (Beijing, Saigon).

CONCLUSIONS

Assessment of the strengths and weaknesses of the city of Bratislava gained by the interactive survey with the participation of stakeholders generated valuable outputs, which had put the examined data of the POLYCE project into broader context and had facilitated precision of scientific outputs. The feedback from respondents was quite positive (only 2 types of respondents – politicians and representatives of chamber of commerce refused/did not to be interested in to participate) and the main topic was find to be interesting and important. Respondents have shown more enthusiasm and engagement when dealing with problems/weaknesses/strengths/potentials of the core city than when assessing cooperation interlinkages, situation in metropolitan region etc. These topic might seem to be too abstract and conceptual for some respondents, mainly from business milieu. Bratislava was considered to be attractive city with a lot of potential both for cooperation as well as for international competition. Though, this potential is somehow wasted and mismanaged. Strategic recommendations for future metropolitan development were tackling predominantly the fields of public investments (sport, greenery, leisure time..), spatial planning and knowledge based management, services and culture in general, transport
issues, greenery and public spaces, issues related to sustainability and knowledge based city as well as precision of positioning and improving the city image. These topics were the main subjects of the public discussion with stakeholders held during local conference, which took place on 8-th November 2011 at Slovak University of Technology. Project POLYCE will end in June 2012 and all these results will be a part of knowledge dissemination process.

REFERENCES


CONNECTION BETWEEN TOURISM AND REGIONAL DEVELOPMENT ON THE HUNGARIAN-CROATIAN BORDER

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Abstract: Following the changes of regimes in Central Europe, research into border regions has been increasingly adverted. On the estimation and development of borders and border regions were impacted to the highest degree. In our research, we intended to explore, by applying statistical indicators, to what extend the situation of border micro-regions is different from that of other micro-regions and the national average. As a next objective, our research focused on how, from the point of view of tourism, the micro-regions studied can be distinguished beyond the significant spatial differences represented above as well as on how to define the most relevant groups and the differences among them. In this paper, on the one hand, by applying the approach by this latter author and, on the other hand, similarly by applying the method of disaggregation, the authors intended to study tourism competitiveness and its components in the tourism regions of Hungary. According to the results of our surveys, countries willing to gain access were not blocked from each other by Schengen borders as they received facilitations in cross-border tourism. In the field of cross-border cooperation, within the tourism industry, a west-to-east and north-to-south gradient can be detected that, by the present logic, can be explained by the changes of economic circumstances and the succession of European Union accession.

Keywords: cross-borderness, Hungarian-Croatian border, role of tourism, regional development, cluster-analysis

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BORDERS AND CROSS-BORDERNESS IN THE INTERNATIONAL LITERATURE

Following the changes of regimes in Central Europe, research into border regions has been increasingly adverted. However, various suggestions of researchers came into light on the definition and role of borders. Below, an overview of the most relevant theories and functions
of borders as well as of border studies will be given.

According to the theory by Haggett (1979), the features of border regions are connected to the development of borders. According to the author, three types of borders are distinguished namely subsequent boundaries, antecedent boundaries and superimposed boundaries. In case the border is demarcated after a given ethnic group is settled down and these coincide, subsequent boundaries are mentioned. When the border was established after the settlement and the ethnic group are adjusted to this line, the border is an antecedent boundary. When the border line does not fit into the ethnic group’s line of settlement, such are superimposed boundaries.

Ratti’s theory is based on the functions and the impact of borders (Ratti, 1993). According to the author, closed, filtering and open borders are distinguished. A closed border will fundamentally determine the given area’s regional characteristics as a border with rather limiting features will intensify peripheral processes (Houtum Van, 2000). As a consequence of long-term closedness, cross-border regions become, from the aspects of both geography and socio-economics, peripheral areas (Ratti, 1993). Such regions have basic features as transmigration, ageing and lower living conditions. Filtering borders have a role of filtering disadvantageous elements and by this protecting the region’s own, internal economy and living standards (Hardi and Rechnitzer, 2003). Those residing along such borders are attracted by certain particulars of the neighbouring country (lower prices, higher living standards etc.), thus illegal trade, smuggling and also shopping tourism can be frequent along the border (Michalkó, 2004; Süli-Zakar et al., 1999). An unlimited flow of population, labour force, capital and services, the fall down of administrative limitations are achieved at open borders, thus cross-border regions at both sides will satisfactorily develop making up an integrated economic area.

According to Nemes Nagy (1998), the meaning of borders in everyday life is related to a content of dividing line, end or the rim of something and by this includes peripheral features. Thus basically 4 important functions of borders are emphasized: division, connection, conflict and filtering that can be present in a concentrated, sporadic, linear and zonal form.

The model by Martinez is based on the interrelationships developed between the two sides; his studies were primarily carried out at the U.S.-Mexican border (Martinez, 1994). According to this theory, alienated, co-existent, independent and integrated border regions exist. Their socio-economic features vary according to the intensity of such relations.

Frontier and boundary are distinguished by Mező. Frontier is an imaginary border zone where a given civilisation meets the area not yet influenced whereas a boundary (political border) will also include the area demarcated (Mező, 2000).

By Hansen and Ratti (1993), border regions are assessed as areas for which socio-economic life is significantly influenced by being situated in the proximity of an international border. Based on this, border regions found along a national border and in a peripheral situation characterized by centripetal forces towards the inner regions of the country as well as cross-border regions where the peripheral situation becomes central and connective and can be described by centrifugal forces are distinguished.

Border regions and cross-border cooperations in Europe are classified into three types (Czimre, 2003; Sersli and Kiszél, 2000). The first type has been developed in a Western European environment and is exclusively a feature of this region with several common features as relative backwardness (underdevelopment) to its environment, high unemployment within the country as well as underdeveloped infrastructure. Such are the French-Italian or the Spanish-Portugal borders. The second type is a somewhat modified version of the above with the difference being that problems originate, in general, in the cross-border planning (environmental, infrastructural or border stations) deficiencies of the neighbouring regions (Gibb and Michalek, 1993). The third type includes countries either not
only bordering EU countries or even themselves are not as such. This type can be further divided into three subtypes. The first includes the border regions of nations classified as among the developed regions of the continent as e.g. Austria, Switzerland, Norway or Finland. The second subgroup, the so-called Central European type includes the border regions of the Czech Republic, Poland, Slovakia, Slovenia and Hungary, whereas the third one is the so-called Eastern European type with the Baltic States, the European member states of the former Soviet Union and the countries of the Balkan Peninsula). These areas can be described by peripheral features, they are basically the peripheries of the periphery (migration, ageing, high unemployment) (Bujdosó, 2009).

A model of cross-border relations and border regions of the East Central European post-socialist countries was created by Tóth (1996). By his model, a perfectly closed and controlled border line is assumed that was dependent on the rather centralised power and decisions of the countries involved (Kovács, 1990).

THE HUNGARIAN-CROATIAN BORDER REGION

The Hungarian-Croatian border region, during the period between the Treaty of Trianon and the late 1980s, was almost absolutely confined. Former freight and passenger transport typical at the River Dráva’ section under Barcs has decayed. Due to the strict border control, it was basically only anglers and some fanatics reaching the river with having permission to approach the border with also observing seasonal, diurnal and spatial restrictions; tourists were literally unknown in this region. The former Yugoslavia, due to its western-oriented policy, became unpresentable in the ‘Communist Block’ despite which several attempts were made for economic cooperation; among them, the joint Barcs-Djurdjevac hydro-power plant investment and the cooperation between the State Farm of Bóly and the Sugarworks of Beli Manastir (Pélmonostor) are usually mentioned (Bognar, 2008).

The era following the changes of regime saw the outbreak of the Balkan War transforming the border regions into war zones (a barrage still not eliminated today was built by the Serbs along the border), economic cooperations stood off as well as the area was far avoided by tourists. In 1994, Croatia signed a Water Management Agreement with Hungary further insisting on its proposals to build a hydro-power plant. As a reaction, the Danube-Dráva National Park was established by the Hungarian side in 1996, thus areas along the River Dráva became protected nature zones. In the late 1990s, the Croatians announced to launch a hydro power plant construction along the (Croatian section of the) border river, at Novo-Virje.

Construction works (mainly due to financial reasons) stopped in 2002 and were postponed as a consequence of Croatia’s and Hungary’s coming European Union accession. Nevertheless, the forecasted access of Croatia was withdrawn (due to failing to meet the EU requirements) whereas a proposal to establish a joint ‘Green Corridor’ came to the fore (Mikuska, 1999; Srsan, 2000).

Along the lower section of the River Dráva, the Danube-Dráva Eco-Landscape was established as a result of a joint Croatian-Hungarian-Serbian initiative in 2007. Ecotourism developments on the Hungarian side decisively financed by the European Union and supported by the counties of South Transdanubia and the Danube-Dráva National Park were completed in 2008 (Iványi and Lehmann, 2002). The possibility to acquire European Union financing became available for Croatia in 2009. Thus, in 2010 a joint application was submitted with Hungary in order to establish the Mura-Dráva Trans-Boundary Biosphere Reserve.

From the 2000s, the establishment of Croatian-Hungarian cooperations was greatly advanced by the origination of close friendships between the Hungarian counties and
Croatian counties (Županije) that had actually existed since the times of the Austro-Hungarian Monarchy. Several town twinnings between the towns of the counties in the South Transdanubia Region and Croatian towns on the other side of the border were realised (between Pécs and Osijek, Barcs and Virovitica etc.) that jointly became members of various regional organisations (Alps-Adriatic Working Community, Danube-Drava-Sava Euroregion etc.). Croatia is expected to become a member of the European Union next year to be followed by the fall of borders between the two countries leaving the River Dráva actually connecting not dividing them.

THE ROLE OF TOURISM IN THE DEVELOPMENT OF BORDER REGIONS

General socio-economic features of border micro-regions

The classification according to which 174 micro-regions are found in Hungary has been in force since September 2008. Of these 174 micro-regions, 49 are located along the state border (Figure 1).

![Figure 1](image.png)

In the first part of our research, we intended to explore, by applying statistical indicators, to what extent the situation of border micro-regions is different from other micro-regions and the national average.

Border micro-regions cover 29% of Hungary’s area while 21.9% of its population as of 1 January 2009. Based on the most important statistical indicators, they unequivocally can be classified as backward micro-regions since low population density, significant transmigration, high unemployment rate, low disposition to entrepreneurship, high inhabitant density and unfavourable income status are among their features (Table 1). The micro-regions along the Hungarian-Croatian border are in an even more disadvantaged
situation. The extent to which this group of micro-regions can be considered as uniform and the regional differences that can be observed are worth elaborating.

Table 1 Main statistical indices

<table>
<thead>
<tr>
<th>Index</th>
<th>Border micro-regions</th>
<th>Other micro-regions</th>
<th>Hungary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population, 2008 (2000=100)</td>
<td>96.8</td>
<td>98.8</td>
<td>98.3</td>
</tr>
<tr>
<td>Population density</td>
<td>81.4</td>
<td>118.6</td>
<td>107.8</td>
</tr>
<tr>
<td>Migration balance per thousand inhabitants, 2000-2008</td>
<td>-1.5</td>
<td>0.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Unemployment rate, 2008</td>
<td>9.9</td>
<td>6.3</td>
<td>7.1</td>
</tr>
<tr>
<td>Number of operating enterprises per thousand inhabitants, 2007</td>
<td>55.7</td>
<td>72.0</td>
<td>68.1</td>
</tr>
<tr>
<td>Number of inhabitants per hundred flats, 2008</td>
<td>241.5</td>
<td>231.1</td>
<td>233.3</td>
</tr>
<tr>
<td>Per capita income in the percentage of the national average, 2008</td>
<td>85.6</td>
<td>104.1</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Data source: Hungarian Central Statistical Office,

Spatial differences within the study periods

The question has arisen whether these micro-regions should be studied jointly or a classification in accordance with the national borders is entirely contingent but differences among border micro-regions are so significant that such classification has no raison d’être. Consequently, as a next step, we focused on the rate of spatial differences between border micro-regions and the other micro-regions by using data for the period between 2001 and 2008.

In this present research, the Hoover index which is frequently applied in Hungarian studies was used. It, on a scale from 0 to 100%, indicates the percentage of a given parameter (in this case, the income making the basis for personal income tax) that should be redeployed among the given micro-regions to have its distribution exactly in accordance to the distribution of the other parameter examined (i.e. population) among the micro-regions. Its formula is:

\[
\text{h} = \sum_{i=1}^{n} \left| x_i - f_i \right| \div 2
\]

where \(x_i\) and \(f_i\) are partition ratios (in this case the share of the population and incomes of micro-region ‘i’ from the total population and total incomes of the given section), to which the following two equations can be applied: \(\sum x_i=100\%\) and \(\sum f_i=100\%\).

As seen above, 49 of the country’s micro-regions are classified as border micro-regions. In order to obtain comparability for differences between them and the remaining micro-regions, the calculated Hoover indices were divided by the number of micro-regions for each group and multiplied by one hundred. Therefore, in our study, average spatial differences per micro-region were introduced.

As indicated by the data in Table 2, spatial differences are significantly higher among border micro-regions compared to other micro-regions or to the national average. Although border micro-regions, similar to the national tendency, witnessed a considerable decrease of
spatial differences between 2001 and 2008, they have remained to be rather outstanding. Unfortunately, spatial differences among the micro-regions along the border of Croatia are fairly significant with also rather fluctuating in the study period, thus making the decreasing tendency not yet definite.

**Table 2** Average Hoover indices for the differences in the level of development

<table>
<thead>
<tr>
<th>Year</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Border micro-regions</td>
<td>0.28</td>
<td>0.28</td>
<td>0.27</td>
<td>0.27</td>
<td>0.26</td>
<td>0.26</td>
<td>0.25</td>
<td>0.25</td>
</tr>
<tr>
<td>Other micro-regions</td>
<td>0.11</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
<td>0.09</td>
<td>0.09</td>
</tr>
<tr>
<td>National average</td>
<td>0.08</td>
<td>0.08</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
</tr>
</tbody>
</table>

Data source: own calculation based on Hungarian Central Statistical Office

In the second approach, instead of incomes, guest nights of public accommodations were applied. In this respect, it can be concluded that spatial differences in tourism on the micro-regional level, on the national average, are significantly higher compared to the level of development (Table 3). Moreover, an especially high concentration can be observed among border micro-regions, consequently such micro-regions should be classified based on certain aspects in order to have differences within each group better indicated.

From the point of view of tourism, differences along the Croatian border are significantly greater compared to those in the level of development and, furthermore, the increase in this respect is even more intensive.

**Table 3** Average Hoover indices for the differences in tourism

<table>
<thead>
<tr>
<th>Year</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Border micro-regions</td>
<td>0.80</td>
<td>0.79</td>
<td>0.79</td>
<td>0.82</td>
<td>0.82</td>
<td>0.83</td>
<td>0.85</td>
<td>0.85</td>
</tr>
<tr>
<td>Other micro-regions</td>
<td>0.38</td>
<td>0.38</td>
<td>0.37</td>
<td>0.38</td>
<td>0.39</td>
<td>0.38</td>
<td>0.38</td>
<td>0.38</td>
</tr>
<tr>
<td>National average</td>
<td>0.27</td>
<td>0.27</td>
<td>0.27</td>
<td>0.27</td>
<td>0.27</td>
<td>0.27</td>
<td>0.27</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Data source: own calculation based on Hungarian Central Statistical Office

**Cluster analysis to classify micro-regions from the aspect of tourism**

As a next objective, our research focused on how, from the point of view of tourism, the micro-regions studied can be distinguished beyond the significant spatial differences represented above as well as on to define the most relevant groups and the differences among them (Baros and Dávid, 2007). To explore this, data sets for the period between 1990 and 2008 were compiled and 5 indicators, namely capacities of public accommodation facilities, domestic and international guests and guest nights of public accommodation facilities were applied. For the data compiled, a mean value was determined for the entire period followed by a standardisation prior to beginning the research.
Then, cluster analysis was carried out for the above 5 indicators. By applying cluster analysis, our results and the statistical study of the division of objects comprising the heterogeneous population into homogenous groups can be demonstrated simultaneously. Such groups are called clusters. The objective of cluster analysis is to classify objects into homogenous groups disjunctive for each pair and covering the entire carrier. In our study, among the non-hierarchal methods of cluster analysis, K-means algorithm was applied. K-means algorithm classifies each element to the cluster that has a mid-point closest to the given element.

Two micro-regions are classified into Cluster 1, i.e. the micro-regions of Szeged and Győr (Fig 2). The centres of both micro-regions are also regional centres in Hungary. Due to the economic, political and administrative role of the two large towns, these two micro-regions are somewhat distinguished from other border micro-regions. From the point of view of tourism, it can be claimed for both micro-regions that they are, for all 5 indicators taken into account, well ahead to border micro-regions.

Cluster 2 includes a significantly higher number of micro-regions with the vast majority of border micro-regions, i.e. approximately 39 micro-regions. As their general feature, a low value for all 5 tourism indicators is observed.

7 micro-regions are classified into Cluster 3 all of them, with only one exception, located in the western part of the country. Capacity and international guest nights exceed the average.

Finally, Cluster 4 contains only one micro-region, i.e. that of Sopron-Fertőd. Here, for all indicators, extremely high values even exceeding those of micro-regions classified into Cluster 1 can be seen.

Figure 2 Final results of the cluster analysis
Source: own calculation based on Hungarian Central Statistical Office,
Of the 8 micro-regions along the Hungarian-Croatian border, 7 falls into Cluster 2 while 1, namely the Micro-region of Siklós, is classified into Cluster 3.

Table 4 Main indicators for tourism, 2008 (2000=100)

<table>
<thead>
<tr>
<th>Area</th>
<th>Capacities</th>
<th>Domestic guests</th>
<th>International guests</th>
<th>Domestic guest nights</th>
<th>International guest nights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster No. 1</td>
<td>181.1</td>
<td>145.8</td>
<td>60.4</td>
<td>191.5</td>
<td>75.1</td>
</tr>
<tr>
<td>Cluster No. 2</td>
<td>217.7</td>
<td>122.7</td>
<td>37.8</td>
<td>159.1</td>
<td>54.5</td>
</tr>
<tr>
<td>Cluster No. 3</td>
<td>177.6</td>
<td>158.7</td>
<td>63.2</td>
<td>216.5</td>
<td>76.0</td>
</tr>
<tr>
<td>Cluster No. 4</td>
<td>191.9</td>
<td>190.5</td>
<td>82.5</td>
<td>254.1</td>
<td>164.4</td>
</tr>
<tr>
<td>Border micro-regions</td>
<td>192.7</td>
<td>148.4</td>
<td>58.6</td>
<td>197.9</td>
<td>78.6</td>
</tr>
<tr>
<td>National average</td>
<td>162.0</td>
<td>257.4</td>
<td>103.6</td>
<td>292.8</td>
<td>92.9</td>
</tr>
</tbody>
</table>

Data source: own calculation based on Hungarian Central Statistical Office.

Based on the clusters obtained, a more detailed study on the most relevant processes related to border micro-regions can be carried out. As indicated in Table 4, the increase of capacities in the border micro-regions significantly exceeded the national average in the period between the changes of regime and today. Unfortunately, the situation is considerably more unfavourable regarding turnovers as the number of domestic guests increased to a lower extent coupled by a more intensive drop in the number of international tourists for the study period compared to the national average.

After having Figures 3, 4 and 5 studied, it can be concluded that since 1990, for the number of domestic guests, a continuous and intensive increase is indicated while for the number of international guests, along with significant fluctuations, a fallback can be observed in Hungary.

For border micro-regions, the growth of dynamics of domestic guest nights is lower compared to the national average that could be approached only by the Micro-region of Sopron-Fertőd included in Cluster 4 with the most advanced situation. Regarding the number of international guest nights, for border micro-regions, the fallback was even more significant compared to the national average with the only exception being the micro-region classified into Cluster 4.

The share of international guest nights in the border micro-regions is significantly behind, by more than 20 percentage points the national average. Unfortunately, for all 4 clusters, a negative tendency can be observed with no difference seen in this respect between border micro-regions and the national average.

The number of domestic guest nights in the micro-regions along the Croatian border, in the period between 1990 and 2008, increased by approximately 108% whereas the number of international guest nights dropped by nearly 30%. While in 1990, the share of international guest nights was almost 66%, this figure in 2008 remained under 40%.
Figure 3 Number of domestic guest nights, 2000=100
Source: own calculation based on Hungarian Central Statistical Office

Figure 4 Number of international guest nights, 2000=100
Source: own calculation based on Hungarian Central Statistical Office
Competitiveness in the border micro-regions

Based on the basic data of capacity and overturns, primarily negative tendencies can be mentioned for the border micro-regions examined (Tóth and Dávid, 2010). However, it was suggested that closer correlations should be also studied in more detail, thus tourism competitiveness of micro-regions was also focused on.

A wide range of international literature on regional competitiveness is available, mainly due to the works of Michael Porter (see, among others Porter, 1996; 1998, 1999). Tourism competitiveness related publications have also been released in recent years (Enright and Newton, 2004; Schroeder, 1996), however in this present paper the focus was, somewhat differently, on potential measurement methods.

On the potential methods for the measurement of regional competitiveness, a number of remarkable studies have been carried out in recent years of which results are applied in this present paper. These works give a review on how relative residential incomes can be disaggregated into the product of quantifiable social-economic factors with distinct content. (Lengyel, 2000; Nemes-Nagy, 2004). In this paper, on the one hand, by applying the approach by this latter author and, on the other, similarly by applying the method of disaggregation, the authors intended to study tourism competitiveness and its components in the tourism regions of Hungary.

After some mathematical modifications conducted (logarithms of values will have to be applied), the product is transformed into a more easily manageable sum as according to the formula below:

$$\log\left(\frac{\text{GDP}}{\text{Number of population}}\right) = \log\left(\frac{\text{GDP}}{\text{Number of employed}}\right) + \log\left(\frac{\text{Number of employed}}{\text{Number of active aged}}\right) + \log\left(\frac{\text{Number of active aged}}{\text{Number of population}}\right)$$
In our study, the micro-regions’ total incomes from public accommodation fees, the number of guest nights and capacities and the number of inhabitants were used. An adequate estimation can be obtained for the level of development of the given micro-regions’ tourism by the income from accommodation fees per capita, for efficiency by the income from accommodation fees per guest night, for the capacity per capita by the number of guest nights per bed and for the encasement of the micro-region’s tourism by the number of beds per capita.

The basis of our classification was the relation of the values of certain micro-regions to the national average for specific incomes from accommodation fees as well as the three resolving factors. Returning to the definition of competitiveness, regions with residential incomes above the average are regarded as with competitive advantage while those below the average are with competitive disadvantage. Within this, complex competitive advantage is also assessed where the given region indicates values for all three components of residential incomes exceeding the average whereas competitive advantage is of multi- or one-factorial when this presupposition is fulfilled for two or one factor. The features of competitive disadvantage are interpreted analogically.

**Figure 6** Tourism competitiveness types in the border micro-regions of Hungary, 2008  
Source: own calculation based on Hungarian Central Statistical Office

Based on the results of the static competitiveness study carried out in 2008, the overall picture drawn from the cluster analysis can be slightly modified (Figure 6 and 7). From the point of view of tourism, 6 micro-regions of Hungary can be considered as competitive. Of these 6 micro-regions, 5 are located in the western part of the country and only one, i.e. the Micro-region of Gyula is situated east of the River Danube. No complex advantage is observed for any of the border micro-regions while for four of them a multi-factored and for two, single-factored advantage was detected. The vast majority of micro-
regions (43) were found with disadvantage also in this research. Among them, in 29 micro-regions a complex while in 14 multi-factored disadvantage was observed. Among the micro-regions along the Hungarian-Croatian border, only that of Siklós can be classified as competitive, with a single-factored advantage in 2008. Among the other micro-regions, for that of Lenti, a multi-factored while for the remaining ones, a complex disadvantage can be observed.

In order to study the changes taking place between 2000 and 2008, dynamic research was carried out. (The term ‘dynamic research’ was used by József Nemes Nagy. It should be noted however that such calculations should not be considered as really dynamic as by applying them, not the entire period is analysed but its first and final years are compared.)

In this context, it is unequivocally seen that the picture indicated by border micro-regions is not as disadvantageous as represented above. In more than half of the border micro-regions (27) dynamics considered to be more advantageous compared to what observed for the national average is seen thus they can be regarded as competitive. Among the micro-regions indicated, there are 5 micro-regions with complex advantage with only one of them located in the western part of the country. In addition to this, multi-factored advantage was observed for 21 micro-regions and single-factored for 1 micro-region. Among the 22 micro-regions with disadvantage, 5 can be described as with single-factored, 12 with multi-factored and 5 with complex disadvantage.

In a dynamic comparison, a complex advantage is determined for the Micro-region of Csurgó, whereas for those of Siklós and Lenti, a multi-factored advantage can be observed. Disadvantage in the case of the micro-regions of Barcs, Letenye and Sellye is multi-factored while for the remaining ones, it is unfortunately complex.

![Figure 7](image-url) Tourism competitiveness types in the border micro-regions of Hungary, 2000-2008

Source: own calculation based on Hungarian Central Statistical Office
CONCLUSIONS

After having our results summarized, it can be claimed that while studying cross-border tourism, conclusions typical not only for Hungary but also for countries of East Central Europe were reached.

The European Union accession of the region’s countries had a positive impact on the development of cross-border tourism.

Prior to the changes of regimes, the development of cross-border tourism was counterworked by administrative tools resulting in settlements in border regions becoming peripheral. During the 1990s, attempts were made at all these locations in order to change this peripheral situation as well as to establish good relations with countries previously accessing the European Union. Thus, as concluded the best co-operations in cross-border tourism developed between countries already being EU members (e.g. between Austria and Hungary).

The European Union’s financial resources also played an important role in the emergence of co-operations (pre-accession funds then the joint PHARE CBC, Interreg and Territorial Cooperation programs).

Joint approaches were further facilitated by cooperation formed already during the 1990s (euroregions, associations) whose establishment was also supported by the European Union.

According to the results of our surveys, countries wiling to gain access were not blocked from each other by Schengen borders as they received facilitations in cross-border tourism. The eastward drifting of the Schengen borders and the cease of former state borders further advanced the development of joint tourism partnerships.

Negative effects emerged mostly at border sections demarcated between countries either not able to join (for some reason) or not willing to gain access to the European Union and certain member states (occurring at the Ukrainian, Serbian, Belarusian and, in some cases, the Croatian border).

In the field of cross-border cooperation, within the tourism industry, a west-to-east and north-to-south gradient can be detected that, by the present logic, can be explained by the changes of economic circumstances and the succession of European Union accession.

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ROLE OF CITIES IN THE ECONOMY OF CENTRAL EUROPE: SOME MEASUREMENT METHODOLOGIES

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Abstract: Recently, one of the characteristic orientations in social science studies focusing on cities has been the ranking of cities, as well as the definition of the world’s leading cities (world cities, global cities) on the basis of various criteria. Central European countries are given just a minor role in these researches, particularly in comparison with German cities with their considerable economic performance. This analysis compares the large cities of Austria, Germany and the countries of the Visegrád Group in terms of their role in economic leadership. To this end, the characteristic parameters have been examined: the GDP in purchasing power standards and nominal GDP of the cities, the revenues of multinational corporations or large companies found in these cities, as well as the domestic market capitalization of the stock exchanges.

Keywords: Central Europe, Visegrád Group, GaWC, world cities, economic control, multinational corporations, stock exchange

INTRODUCTION

One of the mainstream directions of social studies focusing on cities is the ranking and categorization of cities in view of varied criteria. According to Beaverstock et al. (1999), these ranks are based on two different approaches: the functional approach examines the cities as non-independent units, but parts of a comprehensive social-economic system, whereas the demographic approach considers the size of the cities to be a determining factor. The associated literature (Beaverstock et al., 1999; Sassen, 1991; Taylor, 2004) tends to call cities ranked on the basis of the functional approach world cities or global cities, while cities ranked with reliance on the demographic approach are described as megacities. There is a sharp contrast between the two types. To explain it with the use of an example: Karachi (Pakistan) with its population over 13 million is obviously a megacity, but not a world city, whereas Frankfurt (Germany), where the number of inhabitants is under 700 thousand, is one of the dominant financial centers of the world, and therefore is considered to be a world city, but not a megacity. Only four or five of the European cities can be regarded as megacities, first and foremost Paris, London, Moscow and Istanbul with their individual population of approx. 10 million. On the other hand, the definition of megacities is not applicable to the cities of the Central European countries – nor to German cities –, yet some of the cities in the region belongs to various groups of world cities. Quite obviously, the associated literature defines world cities on the basis of highly differing characteristics, and thus the categorization of cities changes almost from author to author. For the purpose of our analysis, it is important to clarify the terms world city and global city, as well as the scope of application of these definitions.
Nevertheless, most authors mention Central European cities just marginally. According to Friedmann (1995), Sassen (2006) and Taylor (2004) the capitals of the Visegrád Group are in fact the most significant headquarter cities of Western (e.g. German or Austrian) companies involved in business operations in Eastern Europe, they are the so-called gateway cities. Some of the works conclude that the large cities of the region – especially Budapest, Prague and Warsaw – do not have sufficient economic weight, and therefore their role in economic leadership is rather insignificant.

This study compares some of the characteristic economic parameters of large cities in Central European countries (Austria, Czech Republic, Germany, Hungary, Poland and Slovakia). We try to answer the question which the dominant cities of regional economic leadership are, and in the given economic system what role is taken by the cities of the Visegrád Group.

POSITION OF CENTRAL EUROPEAN CITIES AMONG WORLD CITIES

The definition of the world city was coined by Patrick Geddes (1915) at the beginning of the last century, and then the definition was further explained in the work of Hall (1966), Hymer (1972) and Heenan (1977). In parallel with the economic growth of the developed world, the second half of the twentieth century witnessed a booming increase in the number of multinational companies, while their role in economic leadership came to encompass the whole world. In this period, city-related studies defined world cities basically on the ground of the number of multinational corporation (MNC) headquarters present. The work of Hall (1966) and Hymer (1972), however, also suggest that MNCs representing economic leadership act in close cooperation with the centers of governmental decision-making. The underlying interrelations – especially in Europe – resulted in the dynamic growth of capitals e.g. London, Paris, Moscow. The only notable exception was Germany, where instead of Berlin, divided by fissures of political ideology, a traditionally industrial area the Rhine-Ruhr region took economic leadership. Among other reasons, for the lack of MNCs large cities of the Central European countries – certainly, with the exception of Germany and Austria – were still not included in these works. According to Hall (1966), the only large city of the former socialist countries to be deemed as a world city was Moscow, but in contrast with the large cities of the West not for its economic functions, but political weight.

After the change of the political regime, economic systems of the Eastern and Central European countries witnessed substantial changes. The conversion to market economy and privatization resulted in economic environments that made the large cities of the region appraisable not only in Europe, but on the global scale, as well. One of today’s key pieces of literature, Saskia Sassen’s (1991) The Global City categorizes large cities with respect to the concentration and intensity of advanced producer services. Global economy – with respect primarily to the characteristics of producer services – is topped by cities like New York, London and Tokyo, as well as Paris and Frankfurt. According to Sassen (1991), in the early 1990s economy in the countries of the Eastern and Central European region saw a tide of foreign working capital investments that were primarily implemented in capitals featuring more developed infrastructure, such as Budapest, Prague and Warsaw. Ivanička Sr. and Ivanička Jr. (2007) state that the most important bases for Western companies wishing to expand their operations in the region were Prague, Warsaw and Budapest, and as a consequence the cities became the centers of regional economic leadership. The Globalization and World Cities Research Network’s (GaWC) study published in 1999 clearly reflects the increasing economic significance of the large cities of Eastern and Central Europe (Beaverstock et al., 1999). In the light of the categorization made in view of four distinct factors (accountancy service, advertising service, banking service, legal service), beside
German cities – though to a varied extent – Bratislava, Budapest, Prague, Vienna and Warsaw have a dominant role in the Central European region (Table 1).

**Table 1** Rank of Central European cities by different services according to the GaWC

<table>
<thead>
<tr>
<th>Category</th>
<th>Global accountancy service centres</th>
<th>Global advertising service centres</th>
<th>Global banking service centres</th>
<th>Global legal service centres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime</td>
<td>Düsseldorf, Frankfurt</td>
<td>-</td>
<td>Frankfurt</td>
<td>-</td>
</tr>
<tr>
<td>Major</td>
<td>Berlin, Cologne, Hamburg, Munich, Stuttgart</td>
<td>Düsseldorf, Frankfurt, Prague, Vienna</td>
<td>Prague, Warsaw</td>
<td>Berlin, Budapest, Frankfurt, Prague, Warsaw</td>
</tr>
<tr>
<td>Minor</td>
<td>Dresden</td>
<td>Budapest, Hamburg, Warsaw</td>
<td>Bratislava, Budapest, Munich, Vienna</td>
<td>Bratislava, Düsseldorf, Hamburg, Munich</td>
</tr>
</tbody>
</table>

Source: Beaverstock et al., 1999

On the basis of the above-mentioned factors, GaWC examined and ranked 122 cities on a scale of 12 levels (GaWC inventory). Table 2 shows the result of the GaWC inventory, wherein most of the Central European cities are deemed to be gamma world cities, while Prague, Warsaw and Budapest are undoubtedly the dominant large cities of the region.

**Table 2** The GaWC inventory of Central European world cities

<table>
<thead>
<tr>
<th>Alpha world cities</th>
<th>Beta world cities</th>
<th>Gamma world cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>10: Frankfurt</td>
<td>-</td>
<td>6: Düsseldorf, Prague</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5: Warsaw</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4: Berlin, Budapest, Hamburg, Munich</td>
</tr>
</tbody>
</table>

Evidence of world city formation: Vienna, Bratislava, Cologne, Stuttgart, Dresden

Source: Beaverstock et al., 1999

The GaWC analysis is considered to be important and of key significance, because it ranks Central European cities on the basis of objective criteria.

The analyses discussed so far rank the large cities of the region primarily on the global level, but at the same time – with the exception of GaWC – they are less concerned with the relative comparison of the cities. The next section will determine the ranking of large cities in the Central European region primarily with respect to their economic strength and on the basis of quantifiable parameters.

**ECONOMIC ROLE OF THE LARGE CITIES IN CENTRAL EUROPE**

Large cities are often ranked on the basis of fairly subjective criteria, primarily because these cities have few comparable data (Taylor et al., 2002). A generally measured characteristic is the population of the cities that ranks the settlements on the basis of the demographic
approach, yet is not suitable for comparing economic characteristics. Turok and Mykhnenko (2007) think that changes in the population should be treated as a much more important parameter than population itself, as they are material consequences and at the same time influencing factors of urban economic conditions. Their analysis examined changes in the population of 310 European cities during the period from 1960 to 2005, and defined 9 trajectories. In our opinion, most of the cities in Central Europe have medium-term decline trajectories, indicating considerable fallback after the growth of the 1970s and 1980s. All these traits obviously reflect the negative impacts of the social-economic changes having taken place since the early 1990s. Budapest is in a special situation, as it belongs to the long-term decline category, a group of Western European cities (e.g. Lens, Le Havre, Saarbrücken, Magdeburg, Rhine-Ruhr) dominantly with declining industry. On the other hand, Mulligan and Crampton (2005) explain that today the intensive growth of the urban population primarily affects developing countries, while in Central Europe population tendencies are consistently decreasing. For the following reason, we do not consider the population of cities and its changes to be a determinant aspect of this analysis:

- The population of large cities in the Central European region (mostly capitals) ranges from 500 thousand to 2 million, but there are no prominent differences among the cities. The most populous city of the region is Berlin with 3.7 million inhabitants, and thus it is the only one to belong to the 100 most populous cities of the world (UN 2008). On the international scale, the large cities of the region do not have determining population.

- Fundamentally, the cities of the Central European region have similar demographic attitudes, i.e. their population is mostly dropping (Turok and Mykhnenko, 2007).

- World cities are principally distinguished by their leading roles in the system of global economy, and not their size (Sassen, 1995).

Thus, it is important to examine the economic role of the cities on the basis of such direct parameters that – in contrast with the population – unambiguously indicate their role in global (or regional) economy. Of course, it is extremely difficult to find consistent and standard parameters, and therefore various authors tend to determine the economic power of cities in view of different data.

- Sassen (2006) suggests that today transnational companies (TNCs) act as the organizers of global economy, and on the basis of the revenues or market capitalization of TNCs the headquarter cities can be ranked.

- According to Musil (2009), a very characteristic indicator of global capital control is foreign direct investment (FDI), and with respect to its volume another hierarchic system can be created.

- Smith and Timberlake (2002) set up their ranking on the basis of the number of air passengers in between cities of global significance in order to clearly reflect – in their approach – the role of the individual cities taken in the economic system.

- Taylor (2004) studied the global network connectivity of 315 cities and formulated a rank on the basis of the value of services provided by ten companies that are involved in accountancy, advertising and banking/finance operations.

In our opinion, the relative ranking of cities in Central Europe can be examined with the use of the sources listed above, as well as the data provided by international organizations.

**Ranking of cities in view of GDP in purchasing power standards and nominal GDP**

The simplest way to express economic performance is the use of the gross domestic product (GDP), which gives grounds to relatively accurate comparisons between national economies, when only estimates are available for cities. An analysis prepared by PricewaterhouseCoopers
Role of cities in the economy of Central Europe: some measurement methodologies

(PwHC) in 2009 specifies figures for the GDP in purchasing power standards in the case of the world’s 151 large cities. The 2008 data are estimates, while the figures for 2025 represent forecasts based on UN’s population estimates. Table 3 shows that the city in Central Europe featuring the largest aggregate GDP PPS (Gross Domestic Product in Purchasing Power Standard) value is not a German city, but Austria’s capital, Vienna. Ranking second with its population of 3.4 million, Berlin’s GDP PPS value is only two-thirds of Vienna, whose population is half of its German counterpart.

Table 3 Estimated GDP PPS values for the cities in the Central European region in 2008 and 2025

<table>
<thead>
<tr>
<th>2008 rank</th>
<th>Cities ranked by estimated 2008 GDP at PPSs</th>
<th>Estimated GDP in 2008 (billion USD at PPSs)</th>
<th>2025 rank</th>
<th>Cities ranked by estimated 2025 GDP at PPSs</th>
<th>Estimated GDP in 2025 (billion USD at 2008 PPSs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>Vienna</td>
<td>122</td>
<td>67</td>
<td>Vienna</td>
<td>175</td>
</tr>
<tr>
<td>69</td>
<td>Berlin</td>
<td>95</td>
<td>86</td>
<td>Berlin</td>
<td>117</td>
</tr>
<tr>
<td>79</td>
<td>Hamburg</td>
<td>74</td>
<td>94</td>
<td>Warsaw</td>
<td>107</td>
</tr>
<tr>
<td>85</td>
<td>Warsaw</td>
<td>68</td>
<td>108</td>
<td>Hamburg</td>
<td>93</td>
</tr>
<tr>
<td>89</td>
<td>Munich</td>
<td>64</td>
<td>115</td>
<td>Munich</td>
<td>81</td>
</tr>
<tr>
<td>100</td>
<td>Budapest</td>
<td>53</td>
<td>116</td>
<td>Budapest</td>
<td>80</td>
</tr>
<tr>
<td>106</td>
<td>Prague</td>
<td>49</td>
<td>121</td>
<td>Prague</td>
<td>75</td>
</tr>
<tr>
<td>144</td>
<td>Krakow</td>
<td>13</td>
<td>150</td>
<td>Krakow</td>
<td>21</td>
</tr>
</tbody>
</table>

Source: PricewaterhouseCoopers, 2009

According to PwHC, the city with the largest economic performance within the Visegrád Group is Warsaw, which is ahead of Munich with respect to its value of GDP PPS. Although back in 2008 Warsaw still ranked fourth behind Hamburg, Table 3 shows that by 2025 it will have become the third most significant economic actor of the Central European region. In the light of the long-term forecasts, however, it can be seen that in spite of the absolute GDP PPS growth by 2025 all the cities of the region will have lost their positions held in 2008.

We have examined PwHC’s analysis with another study that also pertains to GDP values in purchasing power standards. The ranking has been established on the basis of the per capital nominal GDP values from the Urban Audit database with respect to the population of the cities concerned in 2010, as well as the changes in the GDP values of the national economies as published by Eurostat. Table 4 shows that the city in the region with the largest nominal GDP value is Berlin, followed by two other German cities, Hamburg and Munich. In this hierarchy, Vienna ranks only fourth. The capitals of the countries of the Visegrád Group – with the exception of Bratislava – have similar nominal GDP values, while their ranking is identical to the order published by PwHC.

The decentralization of national economies is clearly reflected in the ratios calculated between the cities featuring the largest and second largest GDP values. In Germany, Berlin’s GDP is in fact identical to the GDP value of the second-ranking Hamburg (though the population of Berlin is fairly different from the population of Hamburg), and just 1.14 times larger than the value of the third city of the rank, Munich. In contrast, Warsaw’s GDP is 4.1 times larger than the corresponding value of the second-ranking Krakow, Prague’s GDP is 4.7 times larger than that of the second-ranking Brno, while Budapest’s GDP is 22.6 times larger than the GDP value of Debrecen, which is not included in the list, but ranks second in Hungary. With the exception of Germany, the Central European countries can be basically
described by the economic dominance of their capitals, or at least it is reflected in the GDP data.

In the light of the GDP figures, a lot of conclusions can be drawn, but on the other hand the various estimates (breakdown of the national GDP to the level of the cities, changes in population) involve an excessively large number of factors of uncertainty. The analysis reveals that the figures for the nominal GDP and the GDP in purchasing power standards position the cities differently, while long-term estimates can be potentially modified by the economic crisis significantly – as it has actually happened.

**Table 4** Estimated nominal GDP values for the cities in the Central European region in 2010

<table>
<thead>
<tr>
<th>2010 rank</th>
<th>Cities ranked by estimated nominal GDP</th>
<th>Estimated GDP in 2010 (billion Euros)</th>
<th>2010 rank</th>
<th>Cities ranked by estimated nominal GDP</th>
<th>Estimated GDP in 2010 (billion Euros)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Berlin</td>
<td>86.41</td>
<td>14</td>
<td>Bremen</td>
<td>22.07</td>
</tr>
<tr>
<td>2</td>
<td>Hamburg</td>
<td>86.16</td>
<td>15</td>
<td>Essen</td>
<td>20.45</td>
</tr>
<tr>
<td>3</td>
<td>Munich</td>
<td>75.37</td>
<td>29</td>
<td>Bratislava</td>
<td>8.27</td>
</tr>
<tr>
<td>4</td>
<td>Vienna</td>
<td>69.62</td>
<td>30</td>
<td>Krakow</td>
<td>8.17</td>
</tr>
<tr>
<td>5</td>
<td>Frankfurt</td>
<td>51.44</td>
<td>31</td>
<td>Poznan</td>
<td>8.07</td>
</tr>
<tr>
<td>6</td>
<td>Cologne</td>
<td>43.22</td>
<td>35</td>
<td>Lodz</td>
<td>6.33</td>
</tr>
<tr>
<td>7</td>
<td>Düsseldorf</td>
<td>39.93</td>
<td>37</td>
<td>Wroclaw</td>
<td>6.27</td>
</tr>
<tr>
<td>8</td>
<td>Stuttgart</td>
<td>35.97</td>
<td>42</td>
<td>Brno</td>
<td>5.40</td>
</tr>
<tr>
<td>9</td>
<td>Warsaw</td>
<td>33.45</td>
<td>43</td>
<td>Gdansk</td>
<td>4.60</td>
</tr>
<tr>
<td>10</td>
<td>Budapest</td>
<td>29.35</td>
<td>46</td>
<td>Ostrava</td>
<td>3.66</td>
</tr>
<tr>
<td>11</td>
<td>Prague</td>
<td>25.56</td>
<td>48</td>
<td>Szczecin</td>
<td>2.80</td>
</tr>
<tr>
<td>12</td>
<td>Hanover</td>
<td>22.95</td>
<td>49</td>
<td>Katowice</td>
<td>2.67</td>
</tr>
<tr>
<td>13</td>
<td>Nuremberg</td>
<td>22.60</td>
<td>50</td>
<td>Plzen</td>
<td>2.32</td>
</tr>
</tbody>
</table>

Source: Urban Audit, Eurostat, national statistical offices

**Ranking of cities on the basis of the large companies headquarters**

Apart from the estimated GDP figures, the economic potentials of cities can also be determined in view of various details of the MNCs concentrating in the cities. According to Sassen (1991, 2006), it is not only the number of the headquarters that can be used for this purpose, but the revenues of the companies and their market capitalization, as well.

The following analysis determines which city hosts headquarters of the most significant companies in a given country, and what the associated revenues are with the use of the Forbes “The Global 2000” database for 2010. The ranking in Figure 5 is a part of a broader analysis consisting of 544 cities. The hierarchy for 2010 shows the rank of the given city in Central Europe in this list of 544 cities. The headquarters of the companies found in the Forbes ranking have been determined by the use of Hoovers Inc’s database, and finally the revenues belonging to these companies have been aggregated. Material differences can be seen when the order established in view of the GDP figures is compared with the ranking based on the revenues of the large companies. The results emphasize the dominance of the German cities. As evidenced by Table 5, the world’s 12th largest headquarter city is Munich (revenue of 434.95 billion USD), the aggregate turnover of 10 companies settled here is more than twice as much as the combined revenues of 21 companies from Austria, the Czech Republic, Hungary and Poland. Budapest, the city with the largest aggregate turnover (25.47 billion USD) in the Visegrád Group, ranks only 135th in the international hierarchy. It is to be
noted, however, that while both Hungary and the Czech Republic have given a single city to the ranking, Poland is represented by four cities: Plock, Gdansk, Warsaw and Lublin.

Table 5  Ranking of headquarter cities on the basis of the revenues of TNCs in 2010

<table>
<thead>
<tr>
<th>2010 rank</th>
<th>Cities ranked by aggregate revenue of companies</th>
<th>Aggregate revenue in 2010 (billion USD)</th>
<th>Number of HQs</th>
<th>2010 rank</th>
<th>Cities ranked by aggregate revenue of companies</th>
<th>Aggregate revenue in 2010 (billion USD)</th>
<th>Number of HQs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>Central Europe without Germany</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Munich</td>
<td>434.95</td>
<td>10</td>
<td>64</td>
<td>Vienna</td>
<td>112.07</td>
<td>9</td>
</tr>
<tr>
<td>20</td>
<td>Düsseldorf</td>
<td>298.72</td>
<td>6</td>
<td>135</td>
<td>Budapest</td>
<td>25.47</td>
<td>2</td>
</tr>
<tr>
<td>28</td>
<td>Stuttgart</td>
<td>231.84</td>
<td>4</td>
<td>140</td>
<td>Plock</td>
<td>23.70</td>
<td>1</td>
</tr>
<tr>
<td>44</td>
<td>Bonn</td>
<td>169.47</td>
<td>3</td>
<td>180</td>
<td>Linz</td>
<td>16.46</td>
<td>2</td>
</tr>
<tr>
<td>51</td>
<td>Frankfurt</td>
<td>138.59</td>
<td>6</td>
<td>212</td>
<td>Gdansk</td>
<td>11.92</td>
<td>2</td>
</tr>
<tr>
<td>70</td>
<td>Essen</td>
<td>93.18</td>
<td>2</td>
<td>227</td>
<td>Warsaw</td>
<td>10.70</td>
<td>2</td>
</tr>
<tr>
<td>82</td>
<td>Ludwigshafen</td>
<td>72.63</td>
<td>1</td>
<td>238</td>
<td>Prague</td>
<td>9.44</td>
<td>1</td>
</tr>
<tr>
<td>90</td>
<td>Hanover</td>
<td>64.23</td>
<td>3</td>
<td>317</td>
<td>Maria Enzersdorf</td>
<td>3.99</td>
<td>1</td>
</tr>
<tr>
<td>104</td>
<td>Leverkusen</td>
<td>52.62</td>
<td>2</td>
<td>320</td>
<td>Lublin</td>
<td>3.92</td>
<td>1</td>
</tr>
<tr>
<td>147</td>
<td>Karlsruhe</td>
<td>22.30</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Forbes The Global 2000

Obviously, the analysis presented here based on the revenues of the largest companies is only one of the possible approaches. In contrast with the GDP estimates reflecting relatively isolated conditions, however, the revenues of the largest companies are indicative of the role of the cities in economic leadership. To demonstrate it with an example: according to PwhC, Metro Manila with its population of nearly 14 million features a USD 149 billion GDP PPS value (PwhC), which is larger than that of any city in Central Europe, while the combined revenue of its three TNCs ranked in Forbes “The Global 2000” database can be matched only with the turnover of CEZ (Czech Power Company) in Prague.

Ranking of cities on the basis of the performance of their stock exchanges

Sassen (2006) calls the attention to the fact that a dominant characteristic of the world’s leading cities is the considerable capital concentration, which is not solely represented by banks, but also by stock exchanges. Table 6 presents two distinctive parameters of stock exchanges in the Central European region: the number of companies listed at the individual stock exchanges and domestic market capitalization. In all respects, the most significant stock exchange in the region is the Frankfurt-based Deutsche Börse, which is the 12th largest stock exchange in the world on the basis of its market capitalization. In terms of market capitalization, the Budapest Stock Exchange, Prague Stock Exchange, Warsaw Stock Exchange and Wiener Börse lag far behind the German floor. There are considerable differences also in the number of companies listed at the stock exchanges. It is evident that the Deutsche Börse tops the ranking in this regard, as well, but the Warsaw Stock Exchange is also well ahead of the other exchanges. Since on the stock exchanges mostly domestically registered companies are traded, the performance of the stock exchanges unambiguously reflects the relative strengths of the national economies.
Table 6 Key figures for the stock exchanges of the Central European region in 2009

<table>
<thead>
<tr>
<th>Stock exchange</th>
<th>Number of listed companies in 2009</th>
<th>Domestic market capitalization in 2009 (million USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budapest</td>
<td>46</td>
<td>30,037</td>
</tr>
<tr>
<td>Frankfurt</td>
<td>783</td>
<td>1,292,355</td>
</tr>
<tr>
<td>Prague</td>
<td>25</td>
<td>75,022</td>
</tr>
<tr>
<td>Vienna</td>
<td>115</td>
<td>114,076</td>
</tr>
<tr>
<td>Warsaw</td>
<td>486</td>
<td>150,962</td>
</tr>
</tbody>
</table>


It is important to note, however, that for the stock exchanges of the Visegrád Group it has taken a fairly short period of time to reach their current potentials. All these stock exchanges started as late as in the early 1990s, after the change of the political and economic regime, first the Budapest Stock Exchange in 1990. According to Sassen (2006), the fast economic uplift in the countries of the Visegrád Group was substantially driven by FDI (Foreign Direct Investments), while the contribution of domestic companies to the performance of the national economy remained rather small. Since domestic companies are listed at the stock exchanges in the region – as it has been mentioned above – it is not surprising that the value for domestic market capitalization is low. Among other things, it allowed the Wiener Börse following a policy of expansion in the region to acquire majority shares in the Hungarian and Czech stock exchanges against the Warsaw Stock Exchange in this latter case.

The rearrangement of the ownership structure of these stock exchanges suggests that Vienna and Warsaw are experiencing a strengthening role in the economic leadership of the Central European region, while the role of Budapest and Prague is diminishing. In comparison with the stock exchanges of the above-mentioned cities, the Deutsche Börse is a different class, with respect to the value of market capitalization and the number of the traded companies it is one of the major centers of global money markets.

CONCLUSION

In recent decades, one of the most popular research orientations of social scientific studies has focused on cities. These researches primarily concern two areas: on the one hand, researchers examine what positions the boomingly increasing megacities of the developing world take in global economy, and on the other hand it is still an important issue what hierarchy has evolved among the large cities of the developed world, and what the leading cities of the world are. The large majority of the cities of Central Europe are affected by these studies just marginally, as their population and economic potentials are not outstanding. Indeed, this view is also reflected in one of the most important works: the GaWC research embraces 122 cities, and designates the capitals of the Central European countries (with the exception of German cities) just as gamma world cities. Our analysis has examined Central European cities on the basis of three indices:
- the GDP in purchasing power standards and nominal GDP of the cities;
- the number and combined revenues of the large companies headquarters in these cities;
Role of cities in the economy of Central Europe: some measurement methodologies

- the number of the companies listed at the regional stock exchanges and their domestic market capitalization.

It is not too surprising that the evaluation of the GDP data shows the dominance of the German cities and Vienna, while from the countries of the Visegrad Group is clearly Warsaw that has the largest GDP value. Nevertheless, GDP figures tend to indicate the role of the cities taken in economic leadership just to a lesser extent, and rather reflect more isolated conditions.

For this reason, it is important to examine the locations and the revenues of the largest companies. The obtained results suggest that in Central Europe it is evident that the German cities function as the centers of economic leadership, while the cities of the Visegrad Group – even Budapest featuring the largest combined turnover – belong only to the middle-ranking section in the hierarchy of the cities settled in the region. The analysis of the company data highlights an important special characteristic of the countries of the Visegrad Group: the largest number of headquarters and the largest volume of combined revenues are associated with Poland, because – in contrast with the Czech Republic and Hungary – beside the capital there are three additional cities with significant companies.

Finally, two characteristic parameters of the stock exchanges in the region have been examined: the total number of companies traded at the individual stock exchanges and domestic market capitalization. The Frankfurt-based Deutsche Börse dominates from the group of stock exchanges in Central Europe, and it is a leading actor of the global money markets. The leading stock exchange of the region is the Warsaw Stock Exchange, which the Wiener Börse intends to compete with by acquiring control over the stock exchanges of Budapest and Prague. On the other hand, the number of companies traded at the Warsaw Stock Exchange is larger than the combined number of companies listed at all the other stock exchanges of the region, while the strengthening of the Polish economy is expected to result in the increase of market capitalization.

Our fundamental conclusion is that in terms of economic leadership the dominant cities of the Central European region are the German cities and Vienna. From among the cities of the Visegrad Group, Budapest, Prague and Warsaw currently show similar performance, but Warsaw is foreseen to take the leading role.

REFERENCES


CROSS BORDER INTERACTIONS ACROSS A FORMERLY HOSTILE BORDER:  
THE CASE OF EILAT, ISRAEL AND AQABA, JORDAN

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Ben-Gurion University of the Negev, Israel, E-mail: shaul@bgu.ac.il

INTRODUCTION

This study examines the evolution of the relationships between Eilat, Israel and Aqaba, Jordan since the signing of the peace treaty in 1994. On the basis of this examination, combined with paradigms derived from previous research, the objective of this study is to evaluate the path of future developments in this region. Since both cities are facing each other from a short distance the bi-national city evolution literature is also consulted.

Trans-border interaction, in general, and prospects for the development of bi-national cities in particular attracted attention of scholars and planner (Ehlers, 2001; Gradus, 2001; Kliot, 1997). Several models of cross boundary evolutionary relationships have been proposed (House, 1981; Lezzi, 1994; Martinez, 1994). Most models assume an initial stage of no interaction and end up with a stage of open boundary situation and even merger of towns located on both sides of an international border.

Several papers have analyzed practical developments across boundaries of bi-national cities (Herzog, 1991; Yang, 2005). Papers analyzing the evolutionary relationships across formerly hostile boundaries are rather rare. Gradus (2001) is an exception. His paper is an attempt to look into the developments and portray the prospects for future trans-boundary relationships between Eilat and Aqaba.

From certain aspects, this paper is a sequel of Gradus’ study. However, this study differs from its predecessor in three ways: 1. While Gradus’ main theoretical background relies on the concept of the bi-national city developed by Ehlers (2001) this study relies on trans-border evolutionary theory and models, 2. While Gradus (2001) conducted his study five years after the signing of the peace treaty between Israel and Jordan (Sattloff, 1995), this paper benefits from evidence accumulated for a decade longer time span, and 3. This paper does not repeat background information. Readers interested in learning details about the physical and natural conditions, historic, economic, and political background should refer to Gradus (2001).

This paper attempts to contribute further evidence and knowledge regarding the processes of development across formerly hostile borders, evaluate their pace and hindering factors, and look into the prospects of further developments in the future.

LITERATURE REVIEW

Is there a theory that provides guidelines to comprehending the dynamics of potential merger or coalescence of two cities positioned on two sides of a formerly hostile border? The literature survey led to two papers carrying in their title the word “theory”, to several models,
and to numerous case study presentations. These sources however, paid very little attention to the impact of places defined as formerly hostile borders.

Attempt at theorizing trans-border evolutionary development was made in the last decade by Newman (2003) and Brunet-Jailly (2005). The former provides wide-brush theoretical guidelines with a call to foster dynamic views of borders as places of contact and interaction. Such views, Newman asserts, "will take us well beyond the traditional description of territorial boundary delimitation and demarcation" (p. 22).

Brunet-Jailly (2005) proposes theorizing borders through "four equally important analytical lenses: (1) market forces and trade flows, (2) policy activities of multiple levels of governments, (3) the particular political clout of borderlands communities, and (4) the specific culture of borderland communities" (p. 633). Each one of these lenses provides a set of variables by which progress towards fusion may be measured. The author concludes that "if each analytical lens enhances or complements one another, what emerges is a borderland region that is culturally emerging and is integrating" (p. 645). Although it may be argued that Brunet-Jailly does not provide a full-fledged theory, he certainly lays down the building blocks necessary for a cross border theory formation. Certain components of Brunet-Jailly's theoretical building blocks will be examined in this study.

Dynamic cross border interaction models
Models and case studies dealing with trans-border integration vary in their conclusions from optimism to pessimism vis-à-vis the evolutionary process of cross border interaction. While case studies reviewed in the next sub-section portray a wide range of variation between optimistic and pessimistic views, the four models reviewed here appear to assume a rather optimistic vision. Three of them are stage models starting from a very low level of cross border interaction, if any, a situation compatible with a hostile border environment, and end-up in a stage of full integration. It should be noted that the models chosen for review are those presenting a comprehensive conceptual overview rather than models concentrating on specific economic activity (e.g. Andresen, 2010; Portes and Rey, 2005).

Often, House’s (1981) model is referred to as an early model depicting the development of interactions in borderland areas along lines moving from conflict to harmony (Minghi, 1991). House’s four stage model emphasizes the political role of central governments located far away in the main urban centers alongside with the role of regional cities located closer to the border area, and finally the role of borderlanders located next to the borderline. In essence, this is a geo-political model. Once central governments issue signals of trans-boundary cooperation, local residents of the border areas take advantage of the newly available opportunities. The final stage is depicted as a situation of wholly open boundaries for local and remote interactions.

Martinez (1994) proposes four paradigms of borderland interactions. These paradigms, taken together, form a four stage cross boundary evolutionary model. The model starts from a stage of alienation, moves to a stage of co-existence, further to a stage of interdependency and, finally, conditions permit, end up in a stage of border integration. This final stage is characterized as "Economics of both countries are functionally merged, and there is unrestricted movement of people and goods across the boundary. Borderlanders perceive themselves as members of one social system" (p. 3). Martinez’ model stresses the contribution of sociological mechanisms leading to cooperation and integration.

The third model to be presented here is Lezzi’s (1994) three stage model. The first stage perceives "border as barrier", at the second stage border is viewed as a filter, while at the final stage border acts as a "contact zone" which may lead to fusion and merger or to a structure of supranational integration. The leading forces behind Lezzi’s model are associated with the political-administrative arena.
The fourth model was suggested by Krakover (1997). Contrary to the previous ones this is not a stage model but rather one that focuses on the factors affecting border permeability. The model allows mapping the level of CBIs based on two main factors: economic benefits accrued to open boundaries on the one hand, and offsetting national-political considerations, on the other. Krakover suggests considering two additional accompanying factors. These are the societal cohesiveness within each of the neighboring countries, and the nature of the prevailing dispute. By focusing on the main variables and suggesting the way they are interconnected this model has a close resemblance to Brunet-Jailly’s (2005) four lenses theory.

Despite the different terminology used by the model builders and the varying disciplinary points of view, all models foresee a final stage of full or almost full integration of the economies and societies across the former separating borderline. The model builders did not indicate, however, the time span of the process; is it a matter of years, decades, or perhaps centuries before full integration is achieved? Likewise, most model builders perceive the progress towards integration as a linear process and do not incorporate in their models hindering factors and situations of temporary or permanent reversal in the process. Such factors and situations tend to afflict newly opened borders in formerly hostile areas.

Trans-boundary interaction case studies

The number of case studies researching trans-boundary interaction processes in specific border zones is on the rise, with the Journal of Borderland Studies being a catalyst (e.g., Arieli, 2009; Taylor, 2001). A meta-analysis is required in order to fully review this expanding field of study.

The review of case studies will be limited here to samples taken from three sorts of papers. One of these relates to the concept of bi-national cities that appears to be the nearest to the case study at hand. Another group of papers represents a sample of CBI studies, and the third group deals with the specific area of the Red Sea.

The concept of bi-national cities and their potential integration was researched by Ehlers (2001) and her peers in a special issue of GeoJournal wherein eight pairs of cross border cities have been examined. In their introductory section Ehlers, Buursink, and Boekema (2001) state that "... hardly any theory is developed on this topic" (p.4). Furthermore, relying on most of their authors they summarize gloomily that "the overall conclusion could be stated as: "the binational city does not exist" (p. 3). Even for the case of the two cities of Kerkrade and Herzogenrath, known as Eurode on the German-Dutch border - where socio-economic conditions and geo-political situation are ripe for the emergence of a bi-national city - Ehlers (2001) concludes that it is questionable "whether the binational city can ever be more than Utopia" (p. 21).

The disappointment and pessimism expressed in the aforementioned studies may arise from the high standards set as the definition of a bi-national city. Ehlers, Buursink, and Boekema (2001) included in their definition not only geographic and economic relationships but also socio-psychological elements of people being "connected by feelings of closeness and togetherness" (p. 2). Such pre-conditions are hard to find even within a bi-national city located within a single country, let alone a cross border bi-national entity.

Numerous studies have adopted less demanding definitions for transboundary integration and reached quite optimistic conclusions. For instance, Herzog (1991) concluded that the emergence of "transfrontier metropolis" in the Mexico-US border is a feasible option. Findings carrying the same optimistic mood were reported fourteen years later for the same border area by Dear and Burridge (2005). More recently in a follow-up study Ehlers (2007) found that the concept of Eurode as a binational city based on economic and environmental planning cooperation is gaining greater public support. The same optimism was conveyed by
Yang (2004) with respect to Hong Kong and Shenzhen developing in China under the "Two Systems" policy. Yang concludes "that the two border cities have integrated economically, socially and physically over the past two decades. In consequence, a cross-boundary metropolis is in the making" (p. 195). This optimism is reversed when rival identities are examined across open EU boundaries, for example, by Kaplan (2000) in northern Italy and by Palmeiro Pinheiro (2009) on the Portugal-Spanish border.

Getting back to the northern Red Sea area, it is not only Gradus (2001) who viewed the option of the integration between Aqaba and Eilat as a remote possibility. Kliot (1997) also expressed her pessimism with respect to the planned grandiose transborder projects in the same geographic area. She concluded "that some of the plans..., pursue incompatible goals, and that the plans are too grandiose in scale and investment and are not likely to be implemented." (p. 581). Three other studies dealt with the southern part of the Israeli-Jordanian border prior to the signature of the peace treaty in 1994 (Drysdale, 1991; Gradus, 1994; Minghi, 1991). Ironically, they were less pessimistic in their spirit concerning the possibilities for co-existence than those published afterwards.

In summing up the literature review it can be concluded that some theoretical constructs on cross-border integration processes are starting to appear alongside several wide view models. Most models reviewed portray in their final stage an optimistic view of wide ranging CBIs leading to integration. The case study approach papers however exhibit a broad variation on the scale between optimism and pessimism. Although a meta-analysis is in need, one may hypothesize that the concluding spirit of the studies reviewed depends on the initial expectations. Researchers approaching a border region with low expectation may be surprised by their findings and end up with an optimistic view, and vice-versa. Examination of the evidence accumulated for this study proves that it is rather hard to escape the optimism trap.

LOCAL EVIDENCE

Evidence on trans-border relationships in the Eilat-Aqaba area is provided in this section on the basis of three categories: One represents the political formal sector, the second reflects on voluntary decisions made by travelers and businessmen, and the third relates to the physical planning arena. The first two categories conform to the first two theoretical lenses suggested by Brunet-Jailly (2005).

The concentration on these three areas of activity does not rule out other interactions made mainly by individuals and private entrepreneurs. Some of these are sporadic and some, especially in the tour operators sector, are done on a more continuous basis. These are certainly very important activities for the analysis of the development of transborder relationships. However, the contribution of such activities must await the provision of funds for a detailed field survey.

Political formal sector: operation of joint sub-committees

The formal arena refers to the areas of cooperation earmarked in the peace treaty and other official mutual agreements reached at the political level of both countries involved. Eight joint sub-committees have been established in the framework of the 1994 peace treaty. One more sub-committee, international fund raising for joint projects, was agreed upon at a meeting of the Aqaba-Eilat Coordination Committee (AECC) in 2006. Scheduling regular meetings of the mayors of both cities is another formal activity.

The various sub-committees and their level of activities are presented in Table 1. This information was provided by Mr. Samo Samorai, the Director of Regional Cooperation Office...
in Eilat. This office is responsible for the coordination of the activities of all sub-committees and it follows up any further cooperation resulting from their decisions.

Several observations come to the fore. First, all sub-committees are active. Second, and unsurprising, the busiest sub-committees are those concerned with the most relevant regional issues - environment and tourism. Environmental issues encompass quality of life problems designed to protect residence and visitors of both cities against flies, mosquitoes, bad odours, and flashfloods. It includes also the efforts made by both sides to preserve the rich marine life diversity prevailing in the Gulf of Aqaba-Eilat (Al-Halasah and Ammary, 2007).

Table 1 Joint bi-national sub-committees and their level of activity since 2006.

<table>
<thead>
<tr>
<th>COMMITTEE</th>
<th>Level of activity</th>
<th>COMMITTEE</th>
<th>Level of activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>High</td>
<td>Tourism</td>
<td>High</td>
</tr>
<tr>
<td>Water, Energy and Roads</td>
<td>Medium</td>
<td>Civil Emergency Response</td>
<td>Medium</td>
</tr>
<tr>
<td>Health</td>
<td>Medium</td>
<td>Mayors Meeting</td>
<td>Medium</td>
</tr>
<tr>
<td>Transportation</td>
<td>Low</td>
<td>Culture, Sports and</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>Economic Development</td>
<td>Low</td>
<td>International Fund Raising</td>
<td>Low</td>
</tr>
</tbody>
</table>

High – More than 2 meetings per annum, Medium – Two meetings as determined in the agreement, Low – One meeting per annum
Source: Mr. Samo Samorai, Director of Regional Cooperation office in Eilat (personal communication)

Tourism is also a major concern for both sides. For Eilat this is the city's main economic base. Aqaba has other economic activities mainly those related to the fact that this is Jordan's only outlet to the sea. However, tourism and hospitality is a fast growing industry and both sides have a great deal to gain from cooperation and coordination.

Other sub-committees have lower level of activities; four were classified as having medium level and four as low. The latter are characterized either by being of a less emergent nature or by a demand for wider public participation.

The rather small number of meetings by most sub-committees calls for explanation. The obstacles for more extensive meeting and cooperation appear to be related mainly to three hindering factors: a) issuance of visas, b) local government stability, and c) regional geopolitics. Visa issuance between Jordan and Israel are not reciprocal. Although Israeli citizens, like most other nationalities, may apply for visa to Jordan at the border crossing point and this is arranged within 30 to 60 minutes, Jordanians and other Arab countries citizens wishing to come to Israel must apply for visa beforehand in the closer Israeli embassy. Due to the threat of terror, visa issuance requires security clearance and it may take weeks and months. This procedure prohibits frequent visits of Jordanians including Aqaba officials in Eilat. As a result most meetings of the joint sub-committees take place in Aqaba rather than Eilat.

The second factor prohibiting more extensive official cooperation relates to the frequency of reshuffling at the local government in Aqaba. While the municipality of Eilat enjoys local stability with a mayor re-elected recently for a second four years term, the officials at the local government in Aqaba have been replaced three times during the last four years. Aqaba and its region have been designated as the Aqaba Special Economic Zone Authority known as ASEZA. This authority constitutes Aqaba’s local government with powers reaching far beyond regular local governments’ tasks and duties (ASEZA website; Kardoosh,
ASEZA commissioners and the high commissioner are appointed by the Hashemite Jordanian Kingdom in Amman. As such they may be replaced in a short notice.

The frequent replacement of commissioners in the ASEZA administration has a serious impact on the reduction in the number of the joint committees meetings. This is because a) The new appointees have a normal learning curve to comprehend their new jobs; the meetings of the joint committees do not constitute a task of high priority, and b) It takes time until the new commissioners nominate their staff including the members of the different sub-committees.

The third factor for the low level of operation of the joint sub-committees relates to the geopolitical situation. Each and every political or military tension between Israel and one of its neighbors – be it Lebanon or Gaza – generates an immediate halt on the contacts among Eilat and Aqaba members of the sub-committees. In such situations - which may occur as frequently as twice a year - Aqaba delegates are often quoted asking their Israeli counterparts to postpone even e-mail contacts until the political tension is over. The recovery of the regular contacts between sub-committee members may take a period of one to two months following the end of the tension or the military skirmish. Despite these setbacks both bureaucracies across the border value the sub-committees operation and make efforts to meet at least once a year.

The paper turns now to examine the intensity of voluntary contacts across the international boundary between Israel and Jordan in general and in the Rabin crossing point between Eilat and Aqaba in particular.

**Voluntary border crossing between Israel and Jordan**

Although border crossing procedures are settled on the national level, the volumes of trade and tourism flow are mainly determined at the individual level. This section presents longitudinal statistics on the flow of visitors and trade, paying special attention to trends and timing of fluctuations.

Figure 1 presents tourist arrivals from Jordan to Israel by land crossing starting in 1996, two years after signing of the peace treaty between those countries. Virtually, due to geographical proximity, tourists entering by air transportation are close to nothing. Three land border crossings facilitate tourists entrance: The northern one is the Jordan River crossing, midway is the Allenby Bridge crossing (serving Palestinian Authority citizens and international tourists but not Israelis), and the southern one connecting Eilat and Aqaba named after the assassinated Israeli prime minister Yitzhak Rabin (formerly known as Arava crossing).

The total number of tourist arrivals has surpassed a quarter of one million in the year 2000, about 80,000 of them came through Rabin border crossing from Aqaba to Eilat. October 2000 marked the outbreak of the second Intifada. This violent sequence of events is marked by a sharp decline in the number of tourist crossing from Jordan to Israel as reflected in the chart for the years 2001-2003. Tourist crossings have recovered and reached its apex in 2008 but declined again in 2009 due to Operation Cast Lead in Gaza. It is interesting to note that the Second Lebanon War in the summer of 2006 had only a minor effect on the flow of tourists via Jordan. The downward turns of both 2006 and 2009 are not as sharp neither as long in duration as in 2001. Statistics published for 2010 by the Israeli Central Bureau of Statistics on quarterly basis suggest a return to 'business as usual'. Tourist coming through Rabin border crossing constitute about third of all tourists coming to Israel via Jordan.

The number of Jordanian citizens among the tourists is rather small considering the short distance and the low travel cost (Figure 2). Percentagewise, they constituted about 60 percent of all tourists arriving from Jordan in 2002. However, their number has declined and in the years 2008 and 2009 they numbered in absolute terms about 15,000 and in percentages of total tourists about 5 to 6 percent only.
Cross border interaction across formerly hostile border: .......

Tourists Arrival from Jordan to Israel by Land Crossings

**Figure 1** Tourists arrival from Jordan to Israel by land crossing, 1996-2009
Data source: Israel, Central Bureau of Statistics, Tourism in Israel, Annul series (various years)

Arrival of Jordanian Tourist to Israel

**Figure 2** Arrival of Jordanian tourists to Israel, 2002-2009
Data source: Israel, Central Bureau of Statistics, Tourism in Israel, Annul series (various years)

In contrast to the small number of Jordanians coming to Israel - probably mainly due to visa issuance difficulties - the number of Israelis visiting Jordan has risen from about 200,000 in 1996 to more than 300,000 in 2007 and 2008 (Figure 3). The fluctuations in the departure of Israelis to Jordan seem to follow the same pattern as revealed in the case of the international tourists though with a lesser intensity. The number of Israelis going for a visit to
Jordan reached a peak of about 340,000 visitors in 2008 declining to about 280,000 in 2009. Most Israeli tourists used the northern Jordan River border crossing. Only about 17 percent ventured to the south to use the Rabin crossing point.

![Departure of Israelis to Jordan by Land Crossings](image.png)

**Figure 3** Departure of Israelis to Jordan by Land crossings, 1966-2009. Data source: Israel, Central Bureau of Statistics, Tourism in Israel, Annul series (various years)

More statistics and charts are available at the IAA (Israeli Aviation Authority) website. This authority is in charge of air and land border crossings. Their data refer to total flow without distinction of nationalities. Their data display an upward trend in most indicators (passengers, cars, and trucks) from 2003 onward as well as a decline of all indicators from 2008 to 2009 (Table 2). This decline in 2009 is, however, much milder for all indicators and all border crossings than the decline displayed in Figure 1 for 2001-2003. A minor effect of the 2006 war in Lebanon is also visible in these charts.

Altogether, the IAA data show that passengers flow in all three land border crossings reached in 2008 an all time record of almost 2.5 millions of individuals revealing their motivation to cross the formerly sealed borders between Jordan and Israel. Car crossings and trucks at the terminals (see definition as footnote to Table 2) reached in 2008 record numbers of more than 46 and 47 thousands, respectively. These figures reflect growing interests of travelers and businessmen to explore and utilize opportunities offered in the neighboring country. The growth rates during the five years from 2003 to 2008 are remarkable. Rabin border crossing between Eilat and Aqaba surpassed the general growth rates by far in two indicators. Passengers’ growth rates at the Rabin crossing have grown 5 fold and car crossings have multiplied 2.8 times.
Cross border interaction across formerly hostile border: ........

Table 2 Cross-border passenger and traffic flow indicators, 2003, 2008, 2009

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of passengers</th>
<th>No. of cars crossings</th>
<th>No. of trucks at terminal*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Rabin (%)</td>
<td>Total</td>
</tr>
<tr>
<td>2003</td>
<td>952,840</td>
<td>87,833 (9.22)</td>
<td>33,674</td>
</tr>
<tr>
<td>2008</td>
<td>2,447,603</td>
<td>439,356 (17.95)</td>
<td>46,888</td>
</tr>
<tr>
<td>2009</td>
<td>2,270,877</td>
<td>361,883 (15.94)</td>
<td>40,392</td>
</tr>
<tr>
<td>Growth Rates 2003-2008</td>
<td>2.57</td>
<td>5.00</td>
<td>1.39</td>
</tr>
</tbody>
</table>

* Trucks are not necessarily crossing the border. In most cases, due of security reasons, truck loads are moved at the border from Israeli to Jordanian trucks and vice versa.


The development of the volume of foreign trade between Israel and Jordan is another indicator for the evolving cross boundary relationships (Figure 4). Israeli export to Jordan is growing exponentially with slight setbacks in 2005 and 2009. In 2008 the value of the exported goods and services has climbed to almost $300 million. The Jordanian export to Israel is showing a trend of a lesser growth with significant disturbances in 2006 and 2009. Nevertheless the value of goods and service imported by Israel from Jordan in 2008 reached a record high of more than $100 million.

![Israel-Jordan Foreign Trade Development](image)

**Figure 4** Israel-Jordan foreign trade development, 1995-2009


Generally speaking, the travelers and trade data demonstrate the development of vibrant streams of flow between Israel and Jordan. The total number of passengers and especially foreign and Israeli tourists are on the rise. The value of goods and services traded...
between both countries is also increasing. These streams are facilitated by the administration of both countries however decisions to travel across the border or decisions to trade goods and services are made rather on an individual basis.

More and more people on either side of the border are feeling safe both to visit and to conduct business with partners on the other side. Outbreaks of regional geopolitical tensions appear to hamper the continued trajectories of growth. However, these disturbances are not acting to completely re-seal the borders. On the contrary, the volumes of trade and visits retreat a little but the impact of the disturbances appear to have a short duration of about one year only.

The volume of activity at the Rabin border crossing between Eilat and Aqaba is on the rise in terms of the number of passengers, cars, and international and Israeli tourists. This volume reached about 25 to 30 percent of foreign tourists and about 15-17 percent for total passengers and cars. Due to the long distances to the populated centers of both countries Rabin's crossing share in the number of trucks is much smaller.

**Physical planning indicators**

This sub-section examines a third factor usually ignored in cross-border studies although it sheds light on the improving relationships between countries sharing formerly hostile borders. This factor could be named 'Borderline Fear Removal'. As long as Jordan and Israel were at a state of war, or armistice ceasefire, both countries refrained from placing cityscape projects in the vicinity to the border. At this state the border represented a dangerous zone to get close to not only because of the soldiers watching each movement but also due to minefields spread along the border line.

This does not mean to say that prior to the 1994 peace treaty there was no activity close to the border whatsoever. On the Israeli side there was agricultural activity. On the Jordanian side it was the late King Hussein who built his palace on the sea front not far away from the border (Figure 5). However, hardly any other permanent construction was located near the border on both sides. On the contrary, a zone of about one kilometer wide on the Jordanian side and a little less on the Israeli side was left undeveloped.

From a city developer's point of view these 'near the border' undeveloped zones are prime lands for development. These tracts of lands on both sides of the border are located relatively close to the respective city centers. No wonder, therefore, the fact that developers on both sides of the border have started to explore ways of utilizing these sizeable vacant tracts of land. Two examples of 'near the border' construction projects will be presented.

Figure 5 portrays two mega projects designed for development along the border. Both projects are centered on leisure and tourism. On the Jordanian side it is the Ayla $10 billion mega project which has been under construction since 2006 (Ayla website). On the Israeli side there were developers who suggested building a $500 million project named Aquaria stretching along the Israeli side of the border. So far the Israeli side project has not been approved by the local planning and construction committees due to bureaucratic complexities.

There is no doubt that such projects were unthinkable prior to the signature of the peace treaty. It is the gradual removal of fear and suspicion through numerous personal contacts that encourages entrepreneurs and city planners to envisage the utilization of the vacant lands along the border. This kind of infrastructural works and construction draws both cities closer to each other, even if each project is restricted to the territory of the relevant country.

The second example relates to a more daring proposal for cooperation wherein one country is getting services on the land of the other. This is connected to the proposal of utilizing the Jordanian international airport with an additional terminal which will be built to serve passengers flying to southern Israel. The Eilat airport is located at the town's center and
is considered a nuisance to city development. It is small and old relatively to the King Hussein International Airport located 10 kilometers north of the city of Aqaba. Given this realities, strategic planners suggested cooperation between Israel and Jordan in the use of the Aqaba airport facilities for the benefit of both sides. Such cooperation may save the need of building another new airport north of Eiat on the Israeli side, avoiding the duplication of infrastructural facilities (Gradus, 1994).

This proposal was recently rejected by the Israeli government. A decision was made to invest in the construction of a brand new airport next to Timna about 15 kilometers north of Eilat, almost parallel to the King Hussein International Airport to the east. Thus, while adding new infrastructural projects at the vicinity of one’s country border is acceptable attesting of improved confidence, cooperating on the utilization of the same airport located on the territory of the other country is rejected. The difference between the two cases is clear; building next to the border is confined to ones territory but welcoming ones travelers in the neighbor’s territory might be risky mainly due to the oscillatory character of the cross-border relationships as pointed out in the previous sections.
SUMMARY, DISCUSSION, AND CONCLUSION

This study set out to examine the evolutionary path of CBIs in the Eilat-Aqaba region. The examination is based on local evidence related to three criteria: interaction of formal bi-national sub-committees, cross-border data on the movement of travelers, vehicles, and goods, and on physical construction projects nearing the borderline. This local evidence is judged against CBI theories, models and case studies. The reviewed theories supplied guidelines and building blocks for evaluating the prospects of enhanced interactions; the presented models lead to the conclusion that full integration and merger are feasible; the review of the case studies provided perplexing results – the bi-national cities literature as well as those dealing with cross border local identities (Kaplan, 2000; Palmeiro Pinheiro, 2009) were mostly pessimistic while those concentrating on economic relationships were mostly optimistic (e.g., Herzog, 1991; Yang, 2004).

Evidence introduced in this study portrays a rather optimistic picture of rapidly increasing movement of people and goods across the border, the removal of fear in locating new mega-projects adjacent to the border, and continuance of the formal meetings of the sub-committees in compliance with the peace treaty. Alongside with the positive indicators, short-term fluctuations in the CBI process have been observed. The travel data analyzed in this study showed clearly that ups and downs in the number of travelers occur fairly frequently and these are related to broader regional geopolitical tension. Reference has been also made to the observation that local political CBIs are halted for a while during such tense periods. The questions are how prevalent are these fluctuations and whether or not they should be incorporated within the theoretical models such as those of Brunet-Jailly (2005), House (1981), Lezzi (1994), and Martinez (1994).

It seems reasonable to assert that the aforementioned models portray historical trends related to the long-run; therefore, the case for incorporation of minor fluctuations can be overlooked. Although this assertion is acceptable one may argue that since fluctuations in the process of CBIs are so recurrent, especially in formerly hostile borders, they should be an integral part of any model in order to bring the model closer to reality. The optimistic views embedded in the aforementioned models rely on the assumption that downturns in the process are usually remedied by the stronger forces of cooperation driven by economic and social motivations. This is probably true as long as the central government does not interfere in regulating the CBI process or even arrive at a major change in its policy. When such change comes to effect the whole process may collapse and cross-border relationships may come to a complete halt for decades or generations (e.g., US-Cuba, Israel-Iran, and more). Although complete halt in the process is less expected than regular fluctuations it seems reasonable to incorporate both options somewhere in the CBI evolutionary models. Another shortcoming of the models is related to their inability to provide a time scale to assess how many years it is going to take to move from one stage to the next on the path to the final stage of cross-border integration.

An additional observation that should be discussed is the effect of the mood of the researcher on the conclusions. The review of the case studies gave the impression that researchers approaching a border region with low expectation for interactions may be surprised by their findings and end up with optimistic conclusions, and vice versa. The analysis of the evidence exhibited in this study sheds rather an optimistic light. Is this impression a result of my initially low expectations or is it backed by hard evidence?

Out of the three criteria used in this study, two appear to provide hard evidence which do not depend on subjective assessment. These are the physical construction projects built adjacent to the borderlines and the rapid growth in the volume of trade, traffic, and travelers crossing the Israeli-Jordanian border. True, the number of Jordanians crossing the border to
Israel is still restricted mainly due to security clearance requirements due to the fear of terror against citizens. However, nowadays this is more of a worldwide problem. Once fear of terror is removed the number of Jordanian visitors to Israel is expected to rise rapidly due to the close proximity of the centers of population of both countries.

The other criterion - the formal meetings of the mutual sub-committees – provides a measure which is subject to the researcher’s interpretation. One researcher may argue that the number of meetings per annum is rather minimal and negligible while another one may conclude that as long as regular meetings are continued, even if just once a year, it is an indication of business-as-usual. Thus, based on the hard evidence, it seems safe to conclude that CBIs along the Jordanian border in general and in the Rabin crossing point in particular has been enhanced and even accelerated in the last decade since Gradus (2001) concluded his study.

Would this acceleration of movements, contacts, and new construction next to the borders lead in the long-run to the coalescence of Aqaba and Eilat to generate a bi-national city in a similar way reported by Yang (2004) for the case of Hong Kong and Shenzhen? The reviewed models seem to provide a firm positive answer pointing towards a coalescence of the cities and integration of economies and societies, although at an unspecified future time. Evidence reported in this study, despite fluctuations, appears to support the line of evolution suggested by the models. However, Brunet-Jailly’s (2005) theoretical building blocks issue a reminder that lenses (3) 'the particular political clout of borderlands communities', and (4) 'the specific culture of borderland communities' are far from being ripe to continue along the road to integration.

Thus, it seems safe to conclude that in the last ten years progress has been made on the road to integration in the Eilat-Aqaba region. This progress is subject to fluctuations depending on political and military events taking place on the wider geopolitical scene. Complete halt in the process is unexpected unless a major change occurs in the regimes of the countries involved. The pace of the process is unknown. Furthermore, the road towards further enhanced integration seems to be blocked in the foreseeable future by the extremely different national identities and cultural affiliation prevailing on both sides on the border. Therefore, the merger of both towns to generate a bi-national city is a vision for the distant future rather than an anticipated reality.

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