University doctoral (PhD) dissertation abstract

THE ECONOMIC TRANSFORMATION OF BORDERS IN CENTRAL AND EASTERN EUROPE: THE CASE OF HUNGARY AND ITS EASTERN BORDERS

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1. The Preliminaries and Objectives of the Research and Introduction to the Hypotheses

"Behind every human act there are three factors:
the origin, the environment and the moment."

Hippolyte Taine

Thanks to the intense economic and social restructuring spurred by globalisation tendencies and owing to the changing balance of power centres, the overall change of the national borders in an economic sense has become the order of the day (OHMAE, 1995).[1] In this system mainly those countries and border regions where the characteristic world economic processes have left a strong local mark have become key areas (experimental laboratories). The role of regional integration(s) in dismantling trade barriers, the Euroregions in Europe, the blurring the national independence by multinational companies and international organisations, the diminishing distances caused by technological development and other globalisation tendencies are phenomena which can strongly reconstruct the image of border regions (OHMAE 1990).

The expectations are especially high in the European Union and its neighbouring area (BARANYI, 2007). The European integration has borders with 16 countries and the population living in these states approaches 400 million (KALLIORAS et al., 2009). Otherwise, the EU can be called a borderline integration because the everyday life of the majority of the population and regions is strongly influenced by state borders. In the European integration – within the regional integration – the abolition of artificial borders initiated different tendencies and, as a consequence, the relatively stable borders existing between 1950 and 1980 transformed dramatically in the 1990s due to radical economic, social and political changes (ANDERSON – O'DOWD, 1999).

[1] It is worth mentioning that the postmodern approach focuses on the crisis of the Westphalian state system and the role of identity in connection with borders. At the same time, the neoliberal approach claims the opposite: the death of nation states is related to globalisation tendencies (OHMAE, 1995).

Positive effects can be expected from the ongoing European integration, not only in cross-border interactions but in the economic cohesion of member countries as well. The barriers to the free movement of production factors are gone, and through the gradual decrease of trade costs integration as a self-inducing and self-sustaining process becomes more intense (OHMAE, 1990; HELLIWELL, 1998).[2] Furthermore the consequent opening of the borders launches a number of spatial processes: the better access to foreign markets and the inflow of cheaper imported products can increase the attraction potential of the border regions and can improve – in relation to import competition spurred by foreign companies – the localization capabilities of inner regions as well (BRÜLHART el al., 2004).

Hungary, as an EU member country, enjoys a special status because thanks to the economic and social changes in the 1990s it became a borderline country bordering with seven (!) states (HAJDÚ, 2000). This feature and the EU membership gained in 2004 – with other already mentioned tendencies – have raised the question of location, the alteration of borders and the development of borderlands.

In my dissertation, I focus on the transformation of borders in Hungary and I place a special emphasis on the economic transformation of the borders. The main reason for this is explained by the deterministic factors as developed by Taine. First of all, I was born in a town, Sátoraljaújhely which has been – and is still – divided by state borders *(the origin)*. Secondly, my social and work socialization were determined by the transformation of borders *(the environment)*. Finally, I have wanted to enrich those currently popular research areas in the Károly Ihrig Doctoral School of Management and Business Administration which try to understand the problems of rural development, peripheral and borderline location *(the moment)*.

The central question of my dissertation is to understand those tendencies which led – through the radical transformation of the world economic environment – to the economic transformation of borders.

[2] It is worth mentioning that COLLIER AND VICKERMAN (2001) in their work pointed to the fact that the elimination of economic barriers does not necessarily contribute to the improvement of cross-border relations.

Also a core question of my research is the mapping of the transformation of the East Hungarian borders (Hungarian–Ukrainian and Hungarian–Romanian relations) and the related border regions (North Great Plain and South Great Plain Regions).[3] In addition, I intend to place the current research approaches on a new footing. Furthermore I feel that there has not so far been any comprehensive research conducted on the economic consequences of the disappearing borders in the Hungarian context. The academic discourse is one-sidedly burdened with false or misleading statements which only focus on the positive effects of the transformation process. In the light of the previous empirical investigations a quantitative empirical research like mine can complement those findings which are focused on the dynamism of transformation of borders and their economic consequences.

1.1. Theoretical Framework and Relevance of the Research

Along with research into the ever changing world economy, academic research into borders and border regions is also extremely popular. Western European and American scholars of border studies have collected scientific results over several decades while in the Central and East European region and in Hungary this research field is still in its infancy. The main reason for this is the fact that during the years of state socialism border research was a forbidden field. (It is no accident that when synthesizing the relevant literature I use a large number of foreign references.)

The scientific papers in the field of border studies are interdisciplinary. Many scholars, however, approach the this area from an economic angle and, following the argument of KRUGMAN (1998), look upon space – including the borders – as the final frontier of economics. In my dissertation I also place a much greater emphasis on economic theories but I do this in order to evaluate the results of economic theory in border research. However, it would be overly simplistic to produce scientific results with only one approach and I fully agree with the argument that border and spatial research cannot be approached only from the perspective of economic theory

[3] It is worth mentioning that the North Great Plain Region borders with Slovakia (6 km) as well. This relationship – mainly because of its length – is not in the focus of my research.

(RUMLEY – MINGHI, 1991; CLARK, 1994). It is obvious that research into border regions demands an interdisciplinary point of view as historical (ZEIDLER, 2001), security geographical (KOBOLKA, 2000; SALLAI, 2002a; 2002b), economic (FITZGERALD et al., 1998), socio geographical, economic historical, sociological and many other fields are related to it (NEMES NAGY, 2003). The best evidence of this is the fact that most of the regional science comes from the interaction of a number of disciplines (RECHNITZER, 2005; DUSEK, 2007).

Taken these into consideration I try to follow an interdisciplinary approach in the dissertation in which I deliberately avoid one-sided overly simplistic points of view.

1.2. The Objectives and Hypotheses

The dissertation strives to answer a number of central problems (research questions) at the same time. First of all it intends to *shed more light on the place of economic theories in the understanding of spatial processes and the transformation of borders and the development of borderlands in global space.* In this topic the following questions emerge: Are there any laws – serving as fixed points – according to which the transformation of borders and the neighbouring regions can be better understood? Is that true that the premises of economics point in one direction in the case of the scenario of transformation? If not, which characteristics are responsible for distorting the clear-cut consequences?

This trait, namely *the fulfilment of the theoretical consequences, is the second central problem, the centre of gravity of the dissertation.* Is it true that *border regions before the transformation face the same possibilities and threats as those in the previous empirical studies?* Or are they different from each other and, consequently, we cannot outline a universal development/transformation path?

The third central question of the dissertation is the evaluation of the currently extremely popular regional trade integrations in the world economy. In connection with this the following questions emerge: *Are the regional integration initiations capable of dissolving the*

restricting role of borders in economic terms? Are they capable of helping the development of border regions? Are the effects of regional integrations positive in the transformation of borders? And finally are they able to spur the spatial dynamisms of borderlands beyond dismantling the physical barriers to trade?

The empirical research tries to evaluate the transformation process in Central and Eastern Europe and in Hungary and it also intends to place an emphasis on the transformation of the Hungarian–Ukrainian and Hungarian–Romanian borders. So I intend to focus on the most important tendencies and results of the transformation of borders in the Hungarian context in parallel with addressing some unavoidable questions. *Is the disappearance of the Hungarian borders homogeneous in an economic and physical sense? What factors are behind the diverse transformation of borders and to what extent is European integration responsible in the process? What kind of effects has occurred in the shifting role of borders by globalisation and world trade tendencies? Are the macro- and micro levels (individuals) equally affected?*

As we can see from the questions raised, in the literature review I try to shed light on the role of those economic theories which are gaining ground in border studies and their relationship with the transformation of borders and development of border regions. As a consequence my first hypothesis is based on the following:

Hypothesis 1.: *Although the economic theories have been gaining importance in understanding the spatial processes, at the moment they are incapable of giving clear-cut and consequent answers for the core questions of border studies. So, with economic theories we cannot fully understand the development of border regions and the transformation of borders.*

In the second part of the dissertation which tries to synthesize a large number of empirical findings and to give an economic history overview with the help of two case studies, I set the following hypothesis:

Hypothesis 2.: *The development trajectory of certain border regions cannot be outlined based on previous empirical findings. Every border region has special features so to understand the characteristic tendencies we need the kind of empirical investigation which is adapted to the given region.*

Afterwards I want to observe in a more realistic light those regional integrations which are popular and as a consequence said to be effective in spurring spatial and cross-border processes in the Hungarian context. In this case I set the following hypothesis:

Hypothesis 3.: *There is no causal relationship between the emergence/increase of the regional trade integrations and the economic integrations of border regions. The prospect for the future of the given border region is determined by the previous level of economic development, economic structure and the current level of economic integration during the horizontal expansion of the regional trade agreement.*

The third chapter tries to verify the hypotheses of the empirical investigation. These are related to the transformation process of the narrowly defined research area (the borders and borderlands of Central and Eastern Europe and Hungary) and the transformation of the economic role of borders:

Hypothesis 4.: *In the economic space of Hungary and its neighbouring countries the restricting effect of borders is justifiable in economic – but not in territorial – terms. However, owing to the economic transformation of borders, the role of borders in hindering economic interactions has been decreasing.*

In connection with the East Hungarian borders (the Hungarian–Ukrainian and the Hungarian–Romanian borderlands) I set my fifth hypothesis:

Hypothesis 5.: *The transformation of borders show strong heterogeneity along the Hungarian borders which is directly related to the different levels of integration dynamics. The diverse dynamisms strongly affected the transformation of the eastern borders and as a consequence the restricting role of the Hungarian–Ukrainian border is much stronger in economic terms than in the Hungarian–Romanian one.*

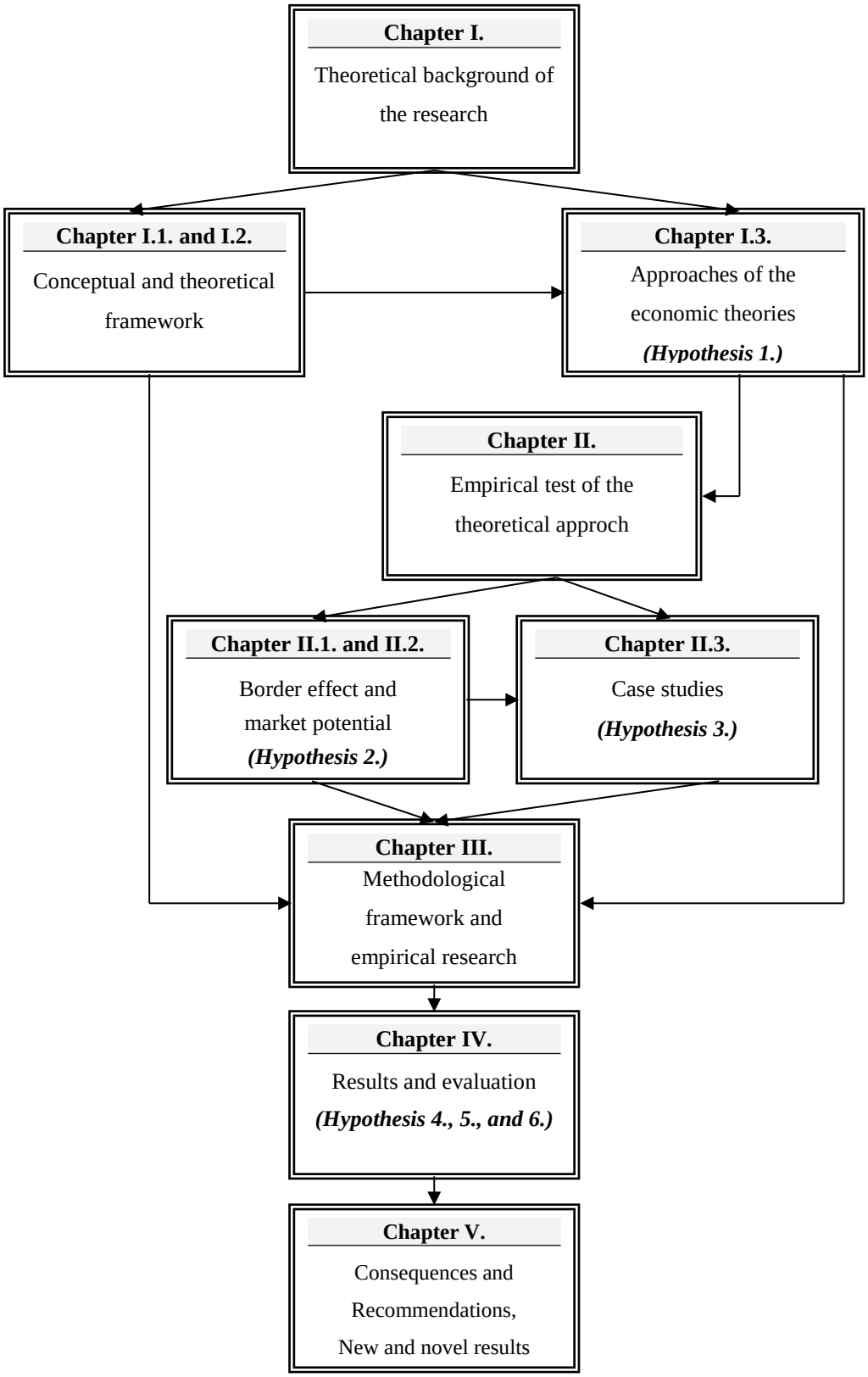
Finally, in connection with the macro and micro history concept of Fernand Braudel[4], I set my sixth hypothesis:

Hypothesis 6.: *Despite the fact that owing to the political, economic and social changes at the macro level borders are distorting the economic space less and less, their restricting role is also evident. This phenomenon appears in the micro sphere of individuals, so borders – even in the case of complete macroeconomic integrity – influence the characteristics and direction of individual economic interactions*

Taking all of these into consideration the logical structure of the dissertation is the following *(Fig. 1):*

[4] According to FERNAND BRAUDEL (1985; 1996; 2003-2004; 2008) the changes at the level of everyday life are slower than and different from those on the macro, public level. In his interpretation there are two histories. Firstly, the history of big, political, economic and social events and the spiritual movements connected to them. Besides this, there is the micro history of everyday life.

Fig. 1.: The Logical Structure of the Dissertation



Source: Own compilation based on the logical structure of the dissertation

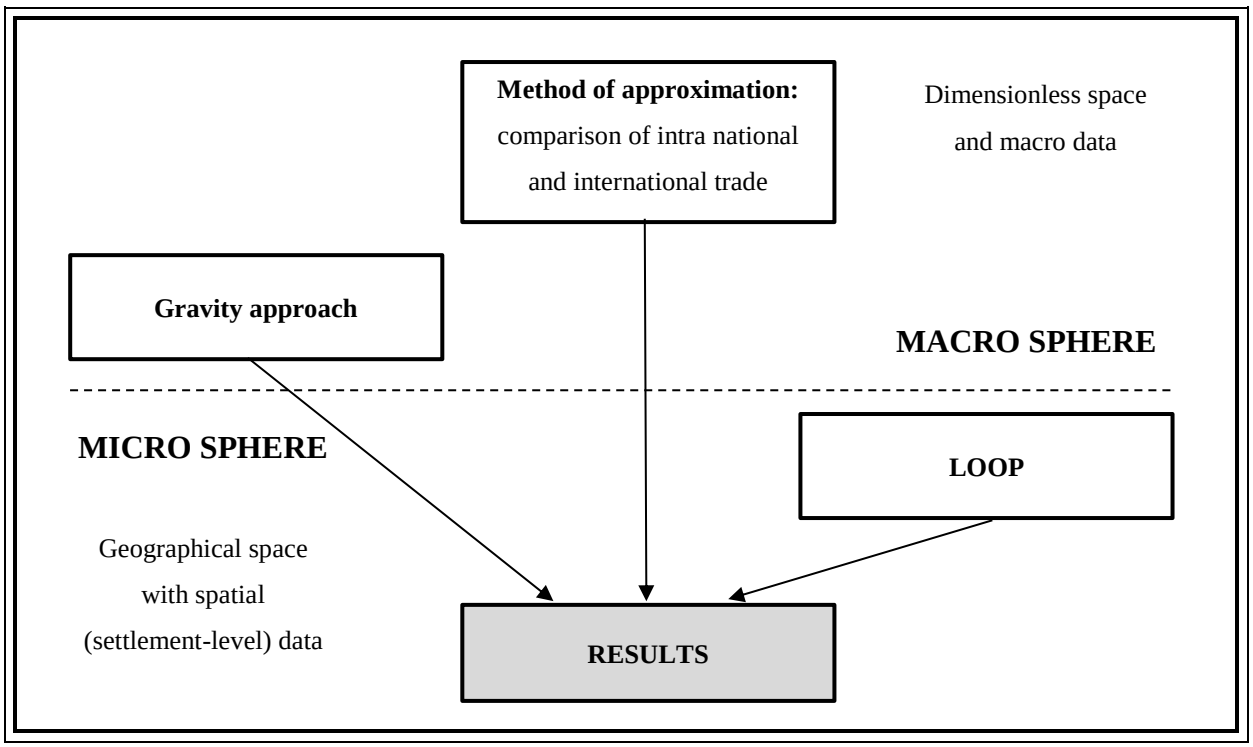
2. Methodological Approach and Database

In order to answer the above mentioned questions *I intend to use three scientific methods.*
The first is the *literature review*. I use this because I try to form a consequent picture of the transformation of borders and the development of borderlands (with special focus on the Hungarian–Ukrainian and Hungarian–Romanian borderlands). The consequence of applying this method is the fact that the first two chapters of the dissertation rely strongly on the relevant literature. However not every empirical finding and theoretical approach is mentioned because I intend to use those which are relevant and which directly help in answering the research questions. In addition I try to evaluate, compare and contrast them.
Besides the literature review I conduct two case studies so my second scientific method is a *case study approach*. I try to trace the characteristic features of two independent and distant border regions based on previous empirical findings. With this in mind I set a number of objectives. *First of all I wanted to test the theoretical framework; then I wanted to illustrate clearly the spatial consequences of the transformation. In addition, the two case studies offered the possibility of evaluating the role of regional trade agreements in the process of transformation.*
To make the literature review and the case studies I used many journals and books from Hungarian and foreign libraries. In addition, I placed great emphasis on scientific databases of journal articles including JSTOR, EBSCO, EconLit, Syrus, Science Direct, SSRN, MATARKA and MTMT. I even managed to access those journals and books which are normally not available with the help of the internet sites of Book Finder and BookOS. Let me draw attention again to the fact that the chosen research field does not have a long history in the Hungarian context so I assigned a significant role not just to those findings which are directly related to the European integration processes but also to those studies which were written in the English, German and to a lesser extent Ukrainian and Romanian contexts. As a consequence, the dissertation contains many references from the following journals: *Journal of Borderland Studies, American Economic Review, European Economic Review, Regional Science and Urban Economics, Annals of Regional Science, Regional Studies,*

Journal of Development Economics and *Journal of International Economics*. The fact that even prestigious journals deal with the issue of borders and the transformation of borderlands in itself confirms the importance of the field. In the case of the Hungarian scientific journals we must mention *Space and Society* and *Regional Statistics* which not only publish border research related papers but serve as pioneers of border studies in Hungary.

My third scientific method was independent quantitative research. In my empirical approach I made a special research algorithm in which mathematical and statistical methods were applied (Fig. 2) in order to understand the economic transformation of borders and borderlands in Central and Eastern Europe and Hungary.

Fig. 2.: The Algorithm of the Empirical Research



Source: Own compilation based on the algorithm of the empirical research

When comparing the intra national and international export volumes (the so called method of approximation) I used a well-known but refined methodology in the Hungarian context.

The essence of this approach is in the evaluation of regional level trade flows by subtracting the total export of a country from the nominal GDP of a business year (WEI, 1996; NITSCH, 2000; HEAD – MAYER, 2000; CHEN, 2004; inter alia). When this value is divided

by the total export of a bilateral relationship, the ratio of intra national and international export can be determined *(1)*:

$$Border\ effect = \frac{GDP - Total\ export}{Bilateral\ export} \qquad (1)$$

This indicator shows the difference between the intra national and the international export volumes and thus sheds much light on the role of borders in shaping economic interactions in trade patterns. To conduct the research macro level data were used so the macro sphere of the transformation became testable. With this approach I tried to understand the restricting role of the borders of Hungary and its neighbouring countries between 2001 and 2011. The data were collected from the KSH STADAT database.

In the gravity approach I used a widely-known and popular (McCALLUM, 1995; OLPER – RAIMONDI, 2008) methodology, adapted locally. This method is a multi-variable regression analysis which is capable of measuring the intra and international trade of a country *(2)*. In this case macro level data were used again, allowing me to map the macro level changes.

$$\ln X_{i,j} = \beta_0 + \beta_1 home + \beta_2 \ln Y_i + \\ + \beta_3 \ln Y_j + \beta_4 \ln D_{i,j} + \beta_5 adj + \varepsilon_{i,j} \qquad (2)$$

In this equation $lnX_{i,j}$ refers to the total trade (export and import) of the defined country pairs of Central and Eastern Europe and Hungary for a certain year. In the case of intra national trade I calculated the within-country trade with the help of the method of approximation and used the difference between the GDP and the total export value. β_0 is a constant variable, β_1 is the coefficient of the dummy $home$ whose sign and magnitude and change over time illustrates the characteristics of the transformation process. In the case of international trade the dummy variable equals zero, otherwise it is one. lnY_i and lnY_j indicate the nominal GDP or country pairs which are the same in the case of intra national trade. $lnD_{i,j}$ symbolises the geographical distance between the research countries. This is defined by the distance of the central regions since the Central and Eastern European countries are

one-centred states where the capital and the central regions play a significant role both in the intra national and in the international trade. The adj is also a dummy variable which shows the geographic location, i.e. the adjacency. When the country pair has a common border the variable equals one, otherwise it is zero. The $\varepsilon_{i,j}$ is the error term. The change in the coefficients between 2001 and 2011 is taken into consideration so I can understand the dynamics of the change in that period. To conduct the research I needed the nominal GDP of the countries in question. These data were collected from the WB database. The bilateral trade data were collected from the UN COMTRADE database. When measuring the intra national trade I used the already mentioned method of approximation. With this approach and with 8 countries, I could make a model containing 36 country pairs. Out of these 28 represented international trade, the remaining 8 represented intra national trade. The distance between countries – in accordance with my previous argumentation – was defined by the distance between capitals. The distance was measured by the GCD internet-based application with calculates the geographic location of cities. In the case of intra national trade I used the methodology of LEAMER (1997).

Finally, when testing the Law of One Price (LOOP) concept with the help of a number of homogeneous retail products and their prices I was interested in the role of the state borders in increasing the standard deviation of price indices across countries (ENGEL and ROGERS, 1996; HORVÁTH et al., 2008). This approach enabled me to use spatial data and in this way was I was able to understand the transformation of borders and their consequences at a local (micro) level. In my model the product level relative price in the real exchange rate *(3)* is:

$$Q^{a}_{x,y,t} = \frac{P^{a}_{x,t}}{P^{a}_{y,t}} \qquad (3)$$

$P^{a}_{x,t}$ is the nominal price of product a in place x, at time t. $P^{a}_{y,t}$ is the nominal price of product a, in place y, at time t. The a denotes different products while x, y means diverse locations. In order to understand the time series variability of the relative prices, we have to

calculate both its within and across country standard deviation *(4)* and *(5)*:

$$\sigma\left(q_{x,y}^{a}\right), \tag{4}$$

$$\text{where } q_{x,y}^{a} = \ln\left(Q_{x,y}^{a}\right) \tag{5}$$

Where there is a systematically higher standard deviation between countries than within we need to understand the explanatory factors. In my model these factors were unearthed with the help of the following multi variable regression analysis *(6)*:

$$\sigma_{x,y,t}^{a} = \beta_0 + \beta_1 HAT_{x,y} + \beta_2 \ln d_{x,y} + \varepsilon_{x,y}^{a} \tag{6}$$

In this approach the standard deviation between two locations were explained by two determinative factors. First of all, I took into consideration the fact that some pairs were in the same country, while the others were not. The dummy *HAT* represented zero if the observations were in the same state, otherwise it was one. The other explanatory factor was the distance because the greater transportation costs increase the retail price (DISDIER – HEAD, 2008).

Following this, I tried to understand the role of nominal exchange in the border effect. When we deprive the nominal exchange rate of the price fluctuation we can create a more nuanced picture of the border effect. This is badly needed because the real exchange rate is none other than the sum of the change of the nominal exchange rate and the price indices of the cross-border locations. In this way the real exchange rate is an exchange rate which takes into consideration the diverse price levels of the two partner countries. In the case of rigid local prices in the short run, the change in the exchange rate reflects the fluctuation of the nominal exchange rate. In order to include the role of the nominal exchange rate in the within- and across country relative prices it is worth correcting the previous approach to the relative price *(3)*. First of all, we have to determine the ratio of the local price $\left(P_{x,t}^{a}\right)$ and the national price level (P_t). Later we have to explore the relative real price, which represents the cross-border data

points $\left(P_{x,t}^{a}\right)$ and $\left(P_{y,t}^{a}\right)$ and the general price indices for the two countries (P_t) and (P_t^*) *(7)*:

$$\frac{\frac{P_{x,t}^{a}}{P_t}}{\frac{P_{y,t}^{a}}{P_t^*}} \qquad (7)$$

Finally, by restructuring the sample from different perspectives, further explanatory factors could be taken into consideration. Going back to the macro and micro history concept of Braudel, it is worth restricting the sample to those borderlands whose economies and societies are strongly influenced by the state border (HANSEN, 1977). With this analysis we can contrast the national and micro level border effects. The sample offers yet another perspective because we can take into consideration the special features of the economic history of Hungary and the neighbouring countries. With a slight restructuring the consequences of the Trianon borders and the common language can be understood. To carry out this we have to restrict the Ukrainian and the Romanian data points to those spatial units which belonged to Hungary before 1920 (Trianon). This correction enables us to understand the common economic history and the role of a common language in shaping the border effect.

In order to test the LOOP concept the data were collected from the KSH, the SSSU, the INS, the MNB, the BRNO and the NBU databases. Those transportation costs which play a significant role in the variability of relative prices were determined with the help of the ArcView GIS 3.2 program Network Analyst application. The application takes into consideration the road distance of settlements (regional centres).

The timeframe of the research was 60 months (January 2007 to December 2011). It included 11 Hungarian, 11 Romanian and 28 Ukrainian (altogether 50) settlements. This means that in Hungary and in Romania equally 13 860 and 13 860, and in Ukraine 35 280 observations were available as an input (giving a combined total of 63 000). After making 55 Hungarian, 55 Romania and 378 Ukrainian data pairs, we had 1 155 Hungarian, 1 115 Romanian and 7 938 Ukrainian observations in a single month.

In the case of cross-country observations, in the Hungarian–Romanian relationship 2,541, and in the Hungarian–Ukrainian 6,468 observations were available on a monthly basis. So to understand the transformation of East Hungarian borders we had altogether – taking the 5-year timeframe into consideration – 152,460 observations in the Hungarian–Romanian case and 388,080 observations in the Hungarian–Ukrainian case. Taken everything into account this is 540,540 data pairs.

To conduct the research I used the MS Excel spreadsheet application, the STATA statistical software, the ArcView GIS 3.2 program Network Analyst application and the internet based application of the Great Circle Distance calculator.

3. Main Findings

3.1. The Results of the Literature Review

In the theoretical part of the dissertation I could point to the fact *that thanks to the decreasing trade costs during the course of the economic transformation of borders, strong regional restructuring can be detected.* It also became obvious that *economic integration between countries changes the allocation of resources not just within but across countries.* The theories clearly highlight the fact that *in the new economic geography pattern new industrial centres can emerge.* This is because *the external orientation of economic activities becomes much stronger than the internal one since the integration changes the reference markets both for the customers and suppliers. The resource allocation which is freed up offers a number of favourable possibilities for the border regions which is further helped by the increase in market potential.*
Following this line of thought, it is obvious that *being close to integration partners, the border regions enjoy a cost advantage when trading with neighbouring countries.*

These are those fixed points which emerge from the models and model-like approaches. A number of contradictions can be detected among the three approaches.

First of all, we have to highlight the fact that the *traditional location theory and the new economic geography*[5] claimed that *in the process of the economic transformation of borders market access is very important and the disappearance of borders could attract customers, production factors and firms to the centrally located border regions. The geographically disadvantaged peripheral borderlands cannot gain as much advantage as the centrally located spatial units in international trade.*
The two verifying approaches are built on the fact that *integration further raises the market potential of those border regions which had enjoyed high economic integration in the past. In a regional trade agreement like the EU, the cross-border backward and forward linkages launch the kind of self-enforcing agglomeration effects which are mainly beneficial for the centrally located border regions.*
Bearing this in mind we can outline a special, negative development trajectory for the transformation of Hungary's eastern borders and border regions. We observed that the transformation of peripheral regions is not completely positive: the integration tendencies simply jump over the borderlands and the accidental advantages are very one-sided. It also became obvious that *the theories mentioned are incapable of outlining a clear, fully consequent picture for the economic future of the borderlands and they can only surmise possible scenarios.* This is because predicting the beneficiary regions of the reallocation of resources in an economic union is a very hard task. The difficulty comes from the fact that *in a change in spatial distribution the level of factor mobility plays the most important role.*

Taking all of these into account *the first hypothesis can be verified. The economic theories cannot necessarily give clear and consequent answers explaining the shifting spatial structure and the transformation of the economic integration of border regions. This means at the same time that approaching the development of border regions and the economic transformation of borders with economic theories is over simplistic.*

The next chapter focused on a number of fields at the same time. It tried to *verify the consequences of the theoretical framework and, with*

[5] However this is not true for trade theory.

the help of two case studies, it gave an economic history overview of the economic transformation of borders.

Firstly, *when reviewing the border effect studies I came to the conclusion that after some decades of trade liberalization and regional trade integration effects the economic space does not show extremely high economic integration.* We could see that *the volume of intra national trade is much greater than international trade. Those theoretical predictions which suggest intense economic interactions in the process of the transformation of borders are not verified.*
As a final conclusion we can point to the fact the realignment of the spatial structure is not as intense as the theoretical framework indicates.

Later, *when testing the change in market potential we could establish that the initial hypothesis – that borders disappearing during trade liberalisation contribute to an increase in the sales potential of products and services in every case – is correct. The studies did not deny this; however they pointed to the fact that those regions which used to enjoy high economic integration and were centrally located could be the main beneficiaries of the globalisation tendencies*. The papers verified – confirming the consequences of the traditional location theory and the new economic geography – *that peripheral and semi-peripheral regions with weak economic development face challenges and do not develop unconditionally.*

3.2. The Conclusions of the Case Studies

When closing the theoretical part of the dissertation, *with the help of two case studies I managed to shed more light on the precise nature of the consequences of the theoretical framework. The case studies presented different results* and pointed to the fact *that with model-like approaches outlining the development trajectory of border regions is almost impossible.* As a consequence I could verify the third hypothesis of the dissertation. It turned out that *there is no causal relationship between the emergence/increase of the regional trade integrations and the economic integration of border regions. The future of the given border region is determined by the previous level of economic development, its economic structure and the current level of*

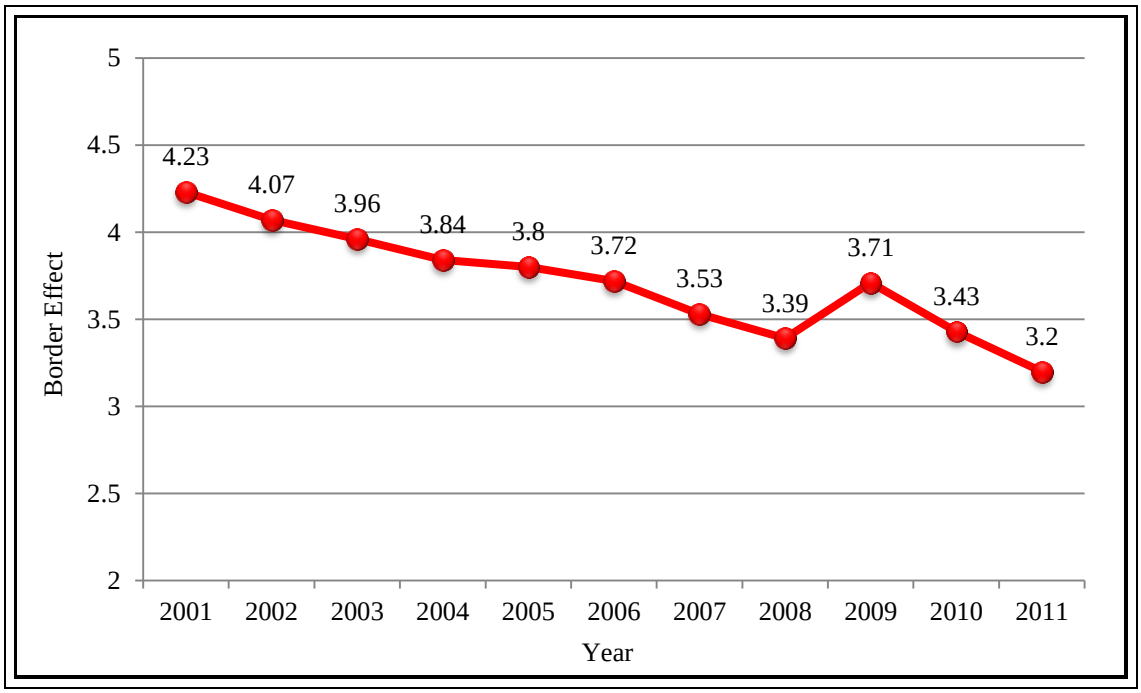
economic integration during the horizontal expansion of the regional trade agreement.
At the same time, the case studies called our attention to the fact that we have to reconsider the one-sided, positive expectations in connection with regional trade agreements. It is indeed true that free trade as a consequence of the disappearance of borders offers a possibility – not a guarantee – to take advantage of favourable spatial tendencies in global and national contexts.
As we could see, it is worth reconsidering the hypotheses of the models when we would like to understand the transformation of the border regions in a global context. *It is also important to reconsider the generalisation of the consequences of the empirical research*. As we could see, the border regions have unique features. This *leads to the verification of the hypothesis which claims that the development trajectory of certain border regions cannot be outlined based on previous empirical findings. Every border region has special features, so to understand the characteristic tendencies we need the kind of empirical investigation which is adapted to the given region.*
With this approach we can give exact answers to the transformation of regional structures and we can better understand the future of certain border regions.

3.3. Results of the Empirical Research

In my empirical research, I first wanted to verify the transformation of borders in the narrowly defined vicinity of Hungary. With the applied gravity approach I pointed to the fact that *in the relationship between Hungary and the neighbouring countries (the macro level) the role of borders in shaping economic interactions is still strong but shows a steady decline (Fig. 3).* The fit *(R^2)* of the model was around 90% in every year so with the strong relationship between the variables the standard deviation of the volume of trade could be explained. When using multi variable regression analysis multicollinearity and heteroskedasticity can emerge as methodological problems. Testing both of them it became obvious that the interaction between the variables is not strong and the variance of the error term is stable. As a consequence we can conclude: *the distance negatively influences, while the economic potential of trade partners and the adjacency positively influence the volume of trade.* Among the estimation of the

parameters, the β value of the *home* variable was the most important. The indicator was significant (1%) in every year and represented the following values *(Fig. 3)*:

Fig. 3.: The Coefficient of Border Effect according to the Gravity Approach



Source: Own calculations based on WB, 2013; UN COMTRADE, 2013; GCD, 2013

The value of *4.23* recorded in 2001 indicates that the countries of the research area traded *67.71* times more within their borders than with another country. However in the following years we see a significant decline in the value of the parameter β and in 2011 the difference between within and across country trade dropped to *23.53*. This indicates that the border effect of the research area decreased by *2.75%* in every year between 2001 and 2011.

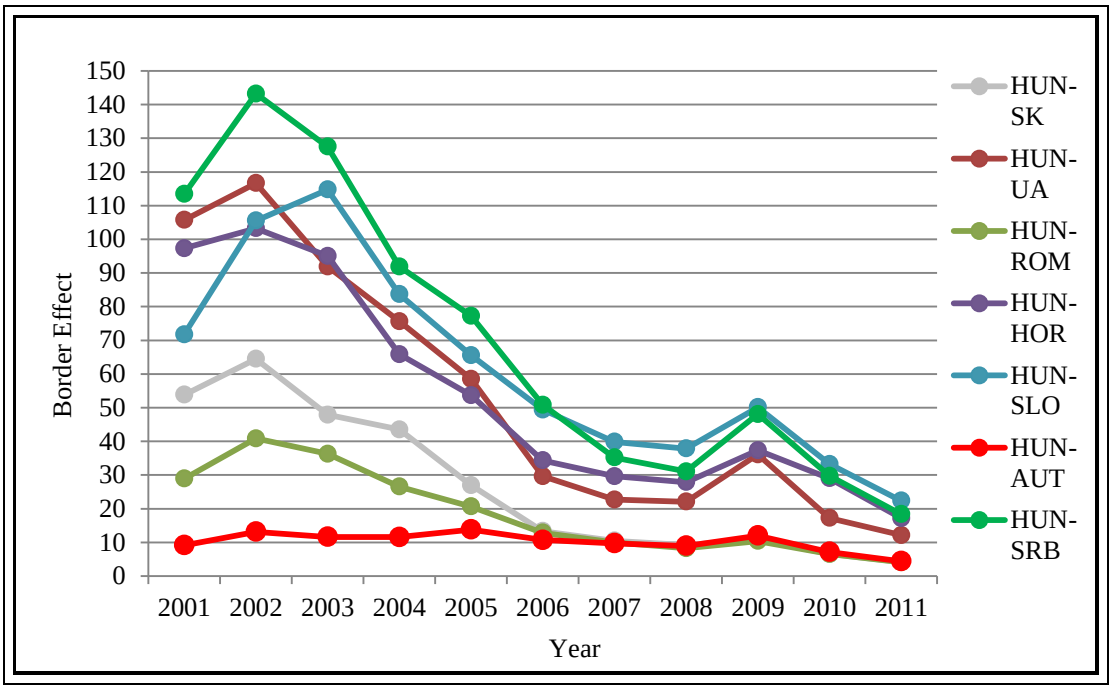
Taking everything into consideration the following further conclusions can be made. First of all, *the restricting feature of the state borders can be easily documented*, so the borders – in defiance of globalisation, and European and world economy integration tendencies etc. – still shape the economic interactions between countries. Secondly, we *have to point to the fact that the transformation of borders brought spectacular results between 2001 and 2011 and the punitive effect in spatial processes cannot be*

verifiable. Despite the fact that a large number of the research area countries are not members of the European integration and do not use the common currency, the decrease of the restricting effect of borders proved to be significant. According to *Fig. 3*, the 2004 accession of Hungary, Slovakia and Slovenia to the EU did not cause a direct effect on the transformation process because the dynamism of the phenomenon remained stable for some years after gaining full membership. The same is true for the enlargement round of 2007 and the Schengen accession. *Owing to the financial and economic crisis of 2008 – directly attributable to the decreasing export values – the border effect significantly increased but in the following years it returned to previous levels.*
It is supposed that the decreasing export and disappearing import demand caused by crises strongly distorts the dynamics of the transformation of borders even if we would need a wider time frame to fully understand this. With the gravity approach I could point to the fact that Hungary and the neighbouring countries form a region where the role of borders in forming economic interactions and the process of economic transformation of borders can be easily detected. Afterwards I wanted to analyse the characteristics of this tendency along the direct Hungarian borders.

In this context the magnitude of the border effect was measured with the approximation method. According to *Fig. 4 the phenomenon of the border effect can be detected in every border of our country and, confirming the results of the gravity approach, showed a decreasing trend between 2001 and 2011.* While in 2001 Hungary traded 68.6 times more within its borders than outside, by 2011 this value had dropped to *11.83*. The indicator of the border effect in this way decreased by *16.12%* every year. *We have to point to the fact that the process was not balanced between the different countries. The Hungarian–Slovakian border saw the biggest transformation since the indicator decreased by 22.48% every year. The most insignificant transformation was recorded in case of the Hungarian–Austrian relationship where the role of borders in forming economic*

interactions decreased by 7.08% every year. (It is also true that this relationship showed an already low base in 2001).[6]

Fig. 4.: The Border Effect along the Hungarian Borders



Note: HUN – Hungary, SK – Slovakia, UA – Ukraine, ROM – Romania, HOR – Croatia, SLO – Slovenia, AUT – Austria, SRB – Serbia

Source: Own calculations based on KSH, 2012c

Fig. 4 indicates that along the Hungarian borders *two well defined groups can be detected* so the transformation of borders in Hungary and in the neighbouring countries was indeed asymmetric. *The first group* contains those countries (Austria, Romania, Slovakia) where the border effect is palpably lower. Among the possible reasons we can mention a number of factors: EU membership, a longer border with more border crossings (Romania and Slovakia), a higher level of economic integration with a higher absorbing potential (Austria), central regions closer to the border (Austria, Slovakia), full (Austria, Slovakia) or easier (Romania) Schengen status etc. *The second group* contains those countries (Serbia, Ukraine, Slovenia, Croatia) where the indicators of the border effect are systematically higher. In this case we can point to the same explanatory factors: these countries – with the exception of Slovenia – are not EU member states, the border

[6] The yearly average change of the indicator of the border effect in the other relationships was the following: Hungarian–Ukrainian *(19.45%)*, Hungarian–Romanian *(17.8%)*, Hungarian–Serbian *(16.64%)*, Hungarian–Croatian *(15.67%)* and Hungarian–Slovenian *(11.0%)*.

lines are shorter, the economic integrity is weaker, the border regions are peripheral, the centre regions are relatively further from the border lines, there is weaker world economy embeddedness and external Schengen status etc.
In 2001 the most restricting border *(with a border effect of 113.44)* was the Hungarian–Serbian while the lowest value *(9.17)* was detected in the Hungarian–Austrian relationship. By 2011 the lowest value was recorded in the Hungarian–Romanian case *(4.07)* overtaking the Hungarian–Austrian *(4.40)* and the Hungarian–Slovakian *(4.22)* ones. The most restricting border line – perhaps surprisingly – was a EU, internal Schengen one: the Hungarian–Slovenian. In 2011 this relationship showed a magnitude of *22.39* in the border effect. As an explanation we should mention the long lasting macroeconomic problems of the previously exemplary competitive Slovenia where prudent fiscal and monetary policies were conducted.
All of this – in accordance with the previously mentioned case studies – allows us to come to the following conclusion: the tight European integration can catalyse the evolution of cross-border trade relations; however, in itself it does not necessarily guarantee a transformation of borders in economic terms.
In the literature of the European integration studies it is widely known that those countries which join the integration establish integral economic and trade relations with member states well before gaining full acceptance (PALÁNKAI, 2003). According to *Fig. 4* this is true for the economic transformation of borders as well. *Before the accession of Hungary, Slovakia and Slovenia in 2004 and Romania in 2007 – i.e. during the preparation for the integration and parallel with the globalisation tendencies – the disappearance of the restricting role of the borders gained new momentum*. In addition Hungary's accession to the Schengen Zone on 21 December 2007 did not cause a spectacular change in the dynamism of the transformation of borders. Finally, referring to the results of the gravity approach we have to highlight that *the financial and economic crisis of 2008 burdened the transformation of borders along the Hungarian frontier despite the fact that the internal market of European integration serves as a protective umbrella.*

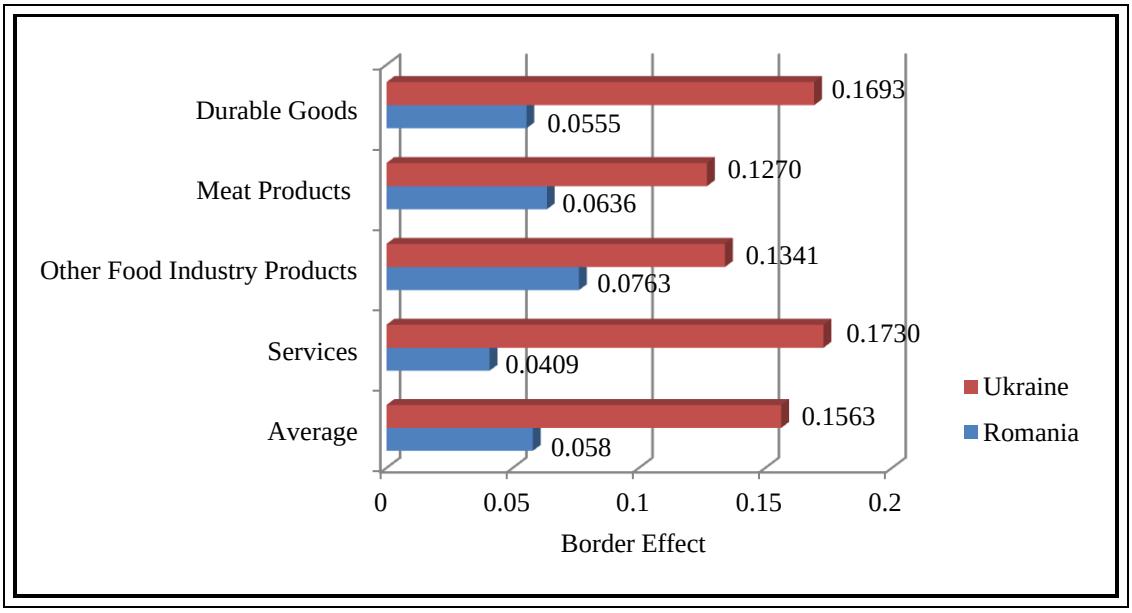
When returning to the focus of the dissertation – the evaluation of the East Hungarian borders – we have to conclude that *the Hungarian–*

Ukrainian and the Hungarian–Romanian borders are not homogeneous. The former case showed a border effect of *12.16* while the latter an effect of *4.07* in 2011. *The Hungarian–Ukrainian relationship causes a border effect three times stronger than the Hungarian–Romanian one.*

In order to understand the difference it is worth continuing the research and unearthing the underlying reasons and explanatory factors.

Later I conducted a more detailed analysis in connection with the Eastern borders of Hungary and with the help the LOOP concept I could verify the results of the method of approximation *(Fig. 5)*.

Fig. 5.: The Comparison of the Border Effect of the Hungarian–Romanian and Hungarian–Ukrainian Borders



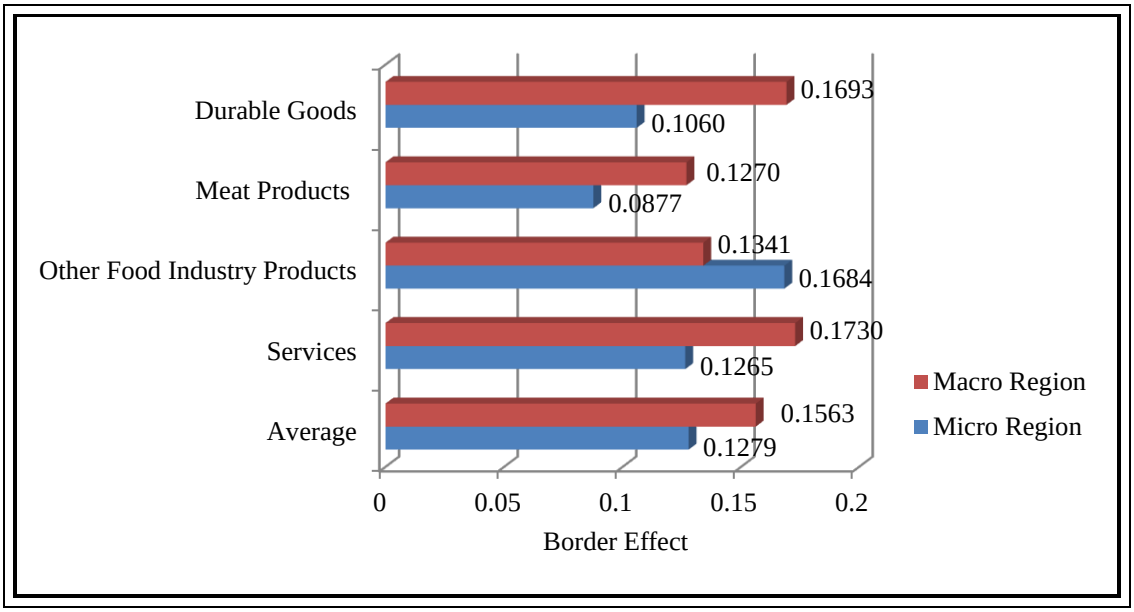
Source: Own calculations based on KSH, 2012d; SSSU, 2013; INS, 2012

The research based on the retail prices of certain products pointed to the fact that the border effect of the Hungarian–Ukrainian relationship is 0.1563, which is almost three times higher than in the Hungarian–Romanian case (0.0580). The fit of the model (R^2) in the former relationship was 69.84%, and in the latter 25.17%. These values are not surprising and they allow us to draw the following conclusion: while in the Hungarian–Ukrainian relationship the higher standard deviation of the price indices can be explained by the location (border) and the distance, the same is only partly true for the Hungarian–Romanian case. In this relationship the state border is not

the main responsible factor for the higher standard deviation of price indices. (I tested the multicollinearity and the heteroscedasticity again and I could detect a low interaction between the variables and the stability of the variance of the error term.)

Later I turned my attention to understanding the underlying reasons. *I could verify the existence of the border effect in the case of a micro level research. In the everyday life of an individual living near the border the borders seems more permeable – a lower border effect indicator – however, the micro level analysis also confirmed the distorting effect of borders (Fig. 6 and 7)*

Fig. 6.: The Border Effect of the Hungarian–Ukrainian Macro and Micro Regions

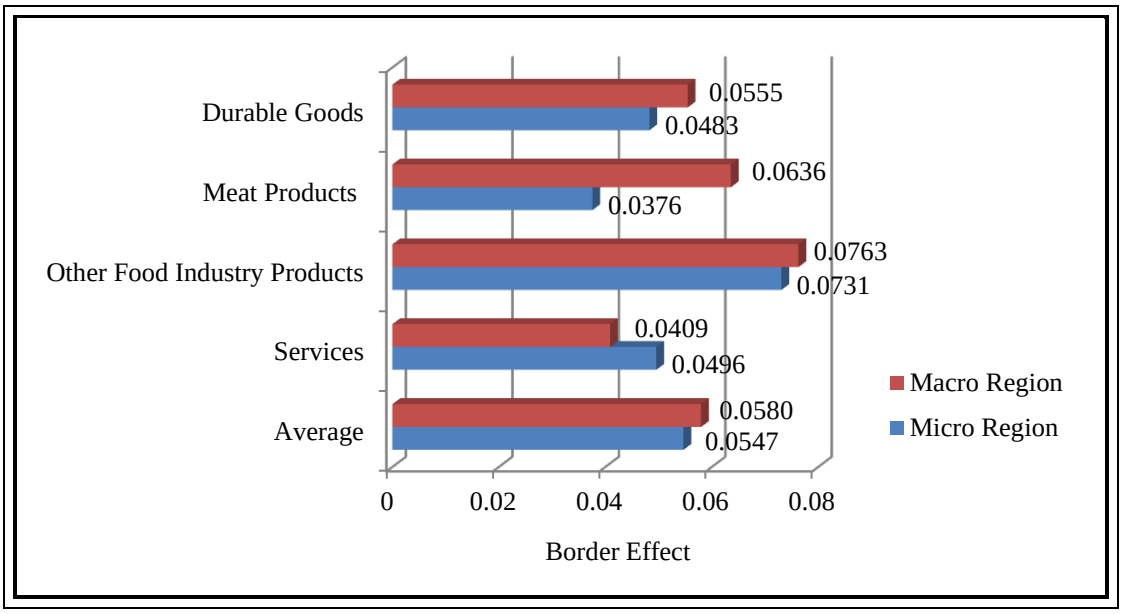


Source: Own calculations based on KSH, 2012d; SSSU, 2013

The figure indicates that that the average border effect indicator (0.1279, causing a 13.64% increase in price indices) is almost 20% lower than the value recorded in the macro region. The greatest difference was recorded in the case of durable goods since here the border effect was more than *37%* lower. We should mention – as an interesting fact – that the border effect of food industry products was *25.6%* higher than in the macro area. *When we take into consideration the average value of the relationship we have to draw the following conclusion: the economic interaction of those who live in borderlands is unequivocally shaped by the state border. It is obvious, however,*

that the extent of the phenomenon is slightly weaker than in a cross-country comparison.

Fig. 7.: The Border Effect of the Hungarian–Romanian Macro and Micro Regions



Source: Own calculations based on KSH, 2012d; INS, 2012

In the Hungarian–Romanian relationship (Fig. 7) the border effect indicator of the micro region (0.0547, causing a 5.62% increase in the standard deviation) is 5.7% lower than in the macro region. The biggest difference was recorded in the case of meat products *(-40.9%),* while the lowest difference was in the other food industry category *(-4.2%).* We have to point to the fact that in the services group the micro level border effect was higher than in the macro region. *When we take into consideration the average value of the relationship we have to draw the following conclusion: the economic interactions of those who live in borderlands is obviously shaped by the state border; however, the extent of the phenomenon is quite weak.*

When continuing the research it became clear that the restricting effect of borders is not caused by different languages, and the border effect is detectable in those spatial units which were not divided in the past. Finally, when evaluating the role of the nominal exchange rate we have to make it clear that the phenomenon of the border effect is not caused by the different inflation rate of the countries in question.

With these data I could verify the further hypotheses of the dissertation. First of all, *in the economic space of Hungary and its neighbouring countries the restricting effect of borders is justifiable in economic – but not in territorial – terms. However, owing to the economic transformation, the role of borders in hindering economic interactions has been decreasing.*

Furthermore it became obvious that *the transformation of borders shows strong heterogeneity along the various Hungarian borders. This is directly related to the different levels of integration dynamics. The diverse dynamisms strongly affected the transformation of the eastern borders and as a consequence the restricting role of the Hungarian–Ukrainian borders is much stronger in economic terms than in the Hungarian–Romanian case.*

Finally, I was able to shed much more light on the macro and micro history concept in the transformation of borders. Namely, *I confirmed that hypothesis according to which the restricting and at the same time decreasing role of borders exists in individuals' micro sphere (Fig. 6 and 7). The disappearing borders – even in the case of full macroeconomic integrity – influence the characteristics and direction of economic interactions in the long run and this appears in the everyday interactions of the individuals.*

4. New and Novel Scientific Results

1. In the theoretical framework of the dissertation I tried to outline the development path of border regions with the help of three economic theories. As a result of the approach *I could point to the fact that the traditional location theory, the trade theory and the new economic geography are not capable of drawing a consequent and clear-cut picture in connection with the regional restructuring within and across border regions. In this way, it is overly simplistic to understand the transformation of borders and border regions through economic theories.*

2. After synthesizing a number of empirical findings *I could prove the fact that the development trajectory of certain border regions cannot be outlined based on previous empirical findings. Every border region has special features, so to understand the characteristic tendencies we need the kind of empirical investigation which is adapted to the given region.*

3. *After the scientific evaluation of the consequences of two case studies I highlighted the fact that there is no causal relationship between the emergence/increase of regional trade integrations and the economic integrations of border regions. The prospect for the future of the given border region is determined by the previous level of economic development, its economic structure and the current level of economic integration during the horizontal expansion of the regional trade agreement.*

4. *In my empirical analysis I applied a so far unused research algorithm in the Hungarian context and I was the first researcher who used directly the gravity model, the approximation method and the LOOP in Hungarian border research.* With my results *I managed to confirm the fact that in the economic space of Hungary and its neighbouring countries the restricting effect of borders is justifiable in economic – but not in territorial – terms. However, owing to the economic transformation of borders, the role of borders in hindering economic interactions has been decreasing.*

5. *Along the Hungarian borders I could confirm the fact that the transformation of borders shows strong heterogeneity along the Hungarian borders, which is directly related to the different levels of integration dynamics. The diverse dynamisms strongly affected the transformation of the eastern borders and as a consequence the restricting role of the Hungarian–Ukrainian borders is much stronger in economic terms than in the Hungarian–Romanian case.*

6. *Among the characteristics of the transformation of borders I could verify the existence of macro and micro history. I pointed to the fact that the macro level transformation of borders – within which the restricting effect of the state borders is also evident – appears in individuals' micro spheres. As a consequence the disappearing borders influence the characteristics and direction of economic interaction for a longer period of time, even in the case of full macroeconomic integrity.*

5. Applicability and Generalizability of the Results

The most important result of the dissertation is a completely new approach with which I have managed to contribute to the research field of border studies in the Hungarian context. Using the building blocks (theory, history and statistics) outlined by SCHUMPETER (1954) the dissertation deliberately rejected the over-simplistic approaches which are so widespread in social sciences.

First of all, with the help of a comprehensive and thematic line of thought I evaluated the role of economics in the development and transformation of border regions. After the introduction of the theoretical framework, I also assessed it critically. The use of market potential and border effect concepts as bottlenecks, and case studies which are so popular in social sciences pointed to the fact that the preconditions of the models cannot always be met and the processes envisioned do not necessarily establish roots. *This means that with models and model-like approaches we cannot draw well-grounded conclusions in spatial and border studies.*

In the empirical research *the dissertation followed a special research algorithm* in which the macro- and micro spheres were also tested. *The methodology and results of the empirical investigation complement the previous Hungarian empirical findings and at the same time they offer a possibility and scientific methodology for border effect investigations along the Hungarian borders.*

The results of the dissertation can be used in the field of higher education as well. The literature review, based on the structure and sophistication of the content, can be fitted into the course on Borders, Borderlands in the European Union. I launched this course in the Faculty of Economics and Business Administration at the University of Debrecen in February 2012.

6. References

1. Anderson, J. – O'Dowd, L. (1999): Border, Border Regions and Territoriality: Contradictory Meanings, Changing Significance. Regional Studies. Vol. 33. Issue 7. pp. 593-604.
2. Baranyi B. (2007): A határmentiség dimenziói Magyarországon. Dialóg Campus Kiadó, Budapest-Pécs, 318 p. (ISBN 978-963-729-630-7)
3. Braudel, F. (1985): Anyagi kultúra, gazdaság és kapitalizmus XV-XVIII. század I., Gondolat, Budapest, 602 p. (ISBN 963-2816-15-3)
4. Braudel, F. (1996): A Földközi-tenger és a mediterrán világ II. Fülöp korában. I-III. kötet. Akadémiai Kiadó – Osiris, Budapest, 1465 p. (ISBN 963-0569-74-4)
5. Braudel, F. (2003-2004): Franciaország identitása. I-II. kötet. Helikon, Budapest, 617 p. (ISBN 963-2088-25-5)
6. Braudel, F. (2008): A kapitalizmus dinamikája. Európa Könyvkiadó, Budapest, 131 p. (ISBN 978-963-078-632-4)
7. Brülhart, M. – Matthieu, C. – Pamina, K. (2004): Enlargement and the EU Periphery: The Impact of Changing Market Potential. Discussion Paper 270, Hamburg Institute of International Economics, Hamburg.
8. Chen, N. (2004): Intra-national versus international trade in the European Union: why do national borders matter? Journal of International Economics. Vol. 63. Issue 1. pp. 93-118.
9. Clark, T. (1994): National Boundaries, Border Zones and Marketing Strategy: A Conceptual Framework and Theoretical Model of Secondary Boundary Effects. Journal of Marketing. Vol. 58. Issue 3. pp. 67-80.
10. Collier, W. – Vickermann, R. W. (2001): Labour Markets in EU Border Regions: The Case of Kent and Nord-Pas de Calais, CERTE Working Paper 1., University of Kent at Canterbury, 11 p.
11. Disdier, A. C. – Head, K. (2008): The puzzling persistence of the distance effect on bilateral trade. The Review of Economics and Statistics. Vol. 90. Issue 1. pp. 37-48.
12. Dusek T. (2007): A társadalomföldrajz és a regionális tudomány különbségeiről. Tér és Társadalom. 21. évf. 2. sz. pp. 137-140.
13. Engel, C. – Rogers, J. H. (1996): How wide is the border? American Economic Review. Vol. 86. Issue 1. pp. 1112-1125.
14. Fitzgerald, J. – Quinn, T.P. – Whelan B.J. – Williams, J. A. (1988): An Analysis of Cross-border Shopping. Dublin Economic & Social Research Institute, Dublin, 108 p. (ISBN 978-070-700-096-1)
15. GCD (2013): Great Circle Distance Calculator, http://williams.best.vwh.net/gccalc.htm, Downloaded: 10 January 2013.

16. Hajdú Z. (2000): A határon átnyúló együttműködés potenciális lehetőségei Magyarország EU-csatlakozása után. pp. 163-173. In: A régiók szerepe a bővülő Európai Unióban. (Szerk. Horváth Gy.). MTA RKK, Pécs, 227 p. (ISBN 963-9052-15-9)
17. Hansen, N. (1977): Border Regions: A Critique of Spatial Theory and a European Case Study. Annals of Regional Science. Vol. 11. Issue 1. pp. 1-14.
18. Head, K. – Mayer, T. (2000): Non-Europe: The Magnitude and Causes of Market Fragmentation in Europe. Weltwirtschaftliches Archiv. Vol. 136. Issue 2. pp. 285–314.
19. Helliwell, J. (1998): How Much do National Borders Matter? The Brookings Institution, Washington, 153 p. (ISBN 978-081-579-148-5)
20. Horváth J. – Rátfai A. – Botond D. (2008): The border effect in small open economies. Economic Systems. Vol. 32. Issue 1. pp. 33-45.
21. INS (2012): Economic Statistics – Prices. https://statistici.insse.ro/shop/?lang=en, Downloaded: 25 November 2012.
22. Kallioras, D. – Topaloglou, L. – Venieris, S. (2009): Tracing the Determinants of Economic Cross-border interaction in the European Union. SPATIUM International Review. Vol. 21. Issue 1. pp. 1-10.
23. Kobolka I. (2000): A határ menti területek biztonságára ható tényezők kiemelten a migráció negatív hatásai. pp. 113-120. In: Határok és Régiók. (Szerk. Szónokyné A. G.). Magyar Földrajzi Konferencia, Szeged, 515 p. (ISBN 978-963-482-825-9)
24. Krugman, P. (1998): Space: The Final Frontier. Journal of Economic Perspectives. Vol. 12. Issue 2. pp. 161-175.
25. KSH (2012c): General Economic Indicators – Foreign Trade and Gross Domestic Product, http://www.ksh.hu/stadat_eves_3_5, Downloaded: 17 January 2013.
26. KSH (2012d): General Economic Indicators – Prices, http://www.ksh.hu/stadat_eves_3_6, Downloaded: 5 March 2013.
27. Leamer, E. E. (1997): Access to western markets, and eastern effort levels. pp. 503-526. In: Lessons from the Economic Transition: Central and Eastern Europe in the 1990s. (Ed. Zecchini, S.). Kluwer Academic Publishers, London, 590 p. (ISBN 978-079-239-852-3)
28. McCallum, J. (1995): National Border Matter: Canada-US Regional Trade Patterns. American Economic Review. Vol. 85. Issue 3. pp. 615-623.
29. Nemes Nagy J. (2003): A regionális tudomány dualitása és paradigmái – hazai tükör. Tér és Társadalom. 17. évf. 1. sz. pp. 1-17.
30. Nitsch, V. (2000): National Borders and International Trade: evidence from the European Union. Canadian Journal of Economics. Vol. 22. Issue 4. pp. 1091-1105.
31. Ohmae, K. (1990): The Borderless World. Harper Collins, New York, 276 p. (ISBN 978-006-097-412-1)
32. Ohmae, K. (1995): The End of the Nation State: The Rise of Regional Economies. Free Press, London, 224 p. (ISBN 978-068-482-528-1)

33. Olper, A. – Raimondi, V. (2008): Agricultural market integration in the OECD: A gravity-border effect approach. Food Policy. Vol. 33. Issue 2. pp. 165-175.
34. Palánkai T. (2003): Az európai integráció gazdaságtana. Aula Kiadó, Budapest, 504 p. (ISBN 978-963-947-890-9)
35. Rechnitzer J. (2005): A tükör által el nem homályosítva (a posztmodern, a paradigmák, a main stream és a csábítás ördöge a regionális tudományban). Tér és Társadalom. 21. évf. 3-4. sz. pp. 1-12.
36. Rumley, D. – Minghi, J. V. (1991): Introduction: The Border Landscape Concept. pp. 1-14. In: The Geography of Border Landscapes. (Eds. Rumley, D. – Minghi, J. V.). Routledge, New York, 352 p. (ISBN 978-041-504-825-5)
37. Sallai J. (2002a): Az ukrán–magyar határ kriminálföldrajza az 1990-es években és a magyar–magyar kapcsolattartás jövője a külső határ mentén. IFM, Budapest, 28 p. (ISSN 1416-6151)
38. Sallai J. (2002b): Ukrán–magyar határ kriminálföldrajza 1990-2002 között. pp. 413-422. In: Határok és Eurorégiók. (Szerk. Szónokyné A. G.). Szegedi Tudományegyetem Természettudományi Kar Gazdaság- és Társadalomföldrajz Tanszék, Szeged, 581 p. (ISBN 978-963-482-825-9)
39. Schumpeter, J. (1954): History of Economic Analysis. Allen & Unwin. London, 1260 p. (ISBN 978-004-330-376-4)
40. SSSU (2013): State Statistic Service of Ukraine Data, www.ukrstat.gov.ua, Downloaded: 23 April 2013.
41. UN COMTRADE (2013): Export and import data. http://comtrade.un.org/db/, Downloaded: 4 February 2013.
42. Wei, S. J. (1996): Intra-National versus International Trade: How Stubborn are Nations in Global Integration? NBER Working Paper No. 5531.
43. WB (2013): World Data Bank, http://databank.worldbank.org/data/databases.aspx, Downloaded: 14 January 2013.
44. Zeidler, M. (2001): A revíziós gondolat. Osiris, Budapest, 256 p. (ISBN 808-101-188-7)

7. List of Publications Related to the Dissertation

Publications in Hungarian scientific journals with English summary

Pásztor, Sz. (2009): Egyes schengeni kistérségek vidékfejlesztési lehetőségei. Agrártudományi Közlemények 34. (Acta Agraria Debreceniensis), pp. 145-151.

Pásztor, Sz. (2012): A tér és a közgazdaság-tudomány kapcsolatának korlátai a határ menti területek kutatásában. Competitio. Vol. 11. Issue 1. pp. 98-116.

Pásztor, Sz. (2012): Településfejlettségi vizsgálat a magyar–ukrán határszakasz kistérségeiben. Agrártudományi Közlemények 45. (Acta Agraria Debreceniensis), pp. 73-78.

Pásztor, Sz. (2012): A magyar–ukrán határszakasz kistérségeinek fejlődési mozgásterei az intenzívebb határ menti interakciók tükrében. Virtuális Intézet Közép-Európa Kutatására Közleményei. Vol. 4. Issue 3. (No. 9.) pp. 75-86.

Pásztor, Sz. (2013): A regionális integrációk hatása a határ menti területek fejlődésére – Az amerikai–mexikói és a német–lengyel példa. Tér és Társadalom. Vol. 27. Issue 3. pp. 57-74.

Publications in international scientific journals in English

Pasztor, Sz. (2010): Globalisation of Micro Regions in Hungary. Krakowskie Studia Miedzynarodowe. Krakowska Akademia im. Adrzeja Frycza Modrzewskiego, Kraków, Vol. 7. Issue 3. pp. 159-166.

Pásztor, Sz. (2012): Development Possibilities of the Hungarian–Ukrainian Borderland in the Mirror of Globalisation. The Annals of the University of Oradea. Vol. 21. Issue 2. pp. 385-389.

Publications in International Proceedings in English

Pásztor, Sz. (2011): Future of Borderlands in the Enlarging European Union. România Şi Provocacările Crizei Economice. In: Răspunsul Tinerilor Economişti. (Eds. Bădulescu, A. – Dodescu, A.). Editura Universității din Oradea. 2nd edition, November, Oradea, pp. 297-303. (ISBN 978-606-100-659-5)

Publications in Hungarian Scientific Journals in English

Pásztor, Sz. (2011): The Role of Schengen in the Development of Peripheral Borderland Regions. Journal of Agricultural Sciences 44. pp. 155-158.

Scientific Book/Chaper in English

Pásztor, Sz. – Kozma, G. (2013a): Border Research and Economic Theory. pp. 187-198. In: The frontier worker – new perspectives on the labour market in the border regions. (Eds. Popoviciu, A. C. – Cigan, D.). C.H. Beck Publishing House, Bucharest, 286 p. (ISBN 978-606-180-181-7)

Pásztor, Sz. – Pénzes, J. (2013b): Altering periphery at the border: measuring the border effect in the Hungarian–Romanian and the Hungarian–Ukrainian border zones. pp. 274-295. In: Communicating the EU Policies Beyond The Borders – Proposals for Constructive Neighbour Relations and the New EU External Communication Strategy. (Eds. Horga, I. – Landuyt, A.). Oradea University Press, Oradea, 311 p. (ISBN 978-606-10-1162-9)

Conference Abstracts in English

Pásztor, Sz. (2009): Rural Development Possibilities of the Hungarian–Ukrainian Cross-border Micro Regions. In: Agrarian Perspectives XVIII – Strategies For The Future Conference. (Eds. Svatoš, M. – Lošťák, M. – Zuzák, R.). Prague, The Czech Republic, September 15-16 2009, CULS Prague, pp. 81. (ISBN 978-802-131-965-3)

Conference Proceedings in English

Pásztor, Sz. (2011): The Role of Cross-Border Interactions in the Development of Peripheral East-Hungarian Micro Regions. In: EAAE PhD Workshop, Economics and Social Science Research in Food, Agriculture, Environment and Development. (Eds. Bartová, L. – Fandel, P.). 27-29 April 2011, University of Agriculture, Nitra, Slovakia, pp. 554-560. (ISBN 978-805-520-571-7)

Conference Proceedings in Hungarian

Pásztor, Sz. (2009): A magyar–ukrán határszakasz kistérségeinek összehasonlító elemzése. In: A Nemzetközi II. Nyíregyházi Doktorandusz (PhD/DLA) Konferencia Közleménye. (Szerk. Vincze K.). Szent Atanáz Görög Katolikus Hittudományi Főiskola, Nyíregyháza, pp. 59-63. (ISBN 978-963-878- 096-6)

Pásztor, Sz. (2010): A magyar–ukrán határszakasz kistérségeinek helyzetképe az ezredforduló után. In: A III. Nyíregyházi Doktorandusz (PhD/DLA) Konferencia Előadásainak Közleménye. (Szerk. Semsei I. – M. Márton J.). Nyíregyházi Főiskola, Nyíregyháza, pp. 325-334. (ISBN 978-963-318-174-4)

Other Publications in Hungarian

Pásztor, Sz. (2009): A schengeni határmentiség kérdései Magyarországon. Gazdaság és Társadalomtudományi Közlemények. Nyíregyházi Főiskola, Gazdaság és Társadalomtudományi Kar, Nyíregyháza, Vol. 1. Issue 1. pp. 74-80.

Pásztor, Sz. (2010): A magyarországi schengeni határ menti kistérségek összehasonlító elemzése. Gazdaság és Társadalomtudományi Közlemények. Nyíregyházi Főiskola, Gazdaság és Társadalomtudományi Kar, Nyíregyháza, Vol. 2. Issue 1. pp. 73-81.

Pásztor, Sz. (2010): Az államhatár, mint térbeli jelenség az Európai Unióban és Magyarországon. Gazdaság és Társadalomtudományi Közlemények. Nyíregyházi Főiskola, Gazdaság és Társadalomtudományi Kar, Nyíregyháza, Vol. 2. Issue 2. pp. 165-176.

Pásztor, Sz. (2011): A magyar–ukrán határszakasz határforgalmának empirikus vizsgálata. Magyar Köztársaság Katonai Biztonsági Hivatal Szakmai Szemle. Vol. 7. Issue 2. pp. 123-135.

Pásztor, Sz. (2011): A Kárpátalján élő magyarok határon átnyúló ingázásának jellemzői. Gazdaság és Társadalomtudományi Közlemények. Nyíregyházi Főiskola, Gazdaság és Társadalomtudományi Kar, Nyíregyháza, Vol. 3. Issue 1. pp. 153-165.

Other Publications in English

Pásztor, Sz. (2010): Development Level Differences of the Micro Regions and Settlements on the Hungarian–Ukrainian Border. Journal of Economic and Social Studies. College of Nyíregyháza, Faculy of Economics and Social Studies, Special English Edition, pp. 109-114.

Pásztor, Sz. (2011): Ukraine, Hungary's Trading Partner After the Global Financial and Economic Crisis. Kommunikáció, Média, Gazdaság (KMG). Vol. 9. Issue 2. pp. 37-50.

Pásztor, Sz. (2013): Special Rural and Borderland Issues in the Peripheries of Central and Eastern Europe. Acta Beregsasiensis. A II. Rákóczi Ferenc Kárpátaljai Magyar Főiskola tudományos évkönyve, Beregszász, Vol. 12. Issue 1. pp. 177-190.