Obstacles in economic cross border interaction across the EU external and Northern Greek border regions

Lefteris Topaloglou
University of Thessaly
Polytechnic School
Department of Planning and Regional Development
ltopaloglou@lga.gr

Abstract

Borders seem to be gradually "melting" within EU-27 but at the same time they seem to be "freezing" in the EU's exterior. These processes bring to the foreground consequences not only of "integration" but of "exclusion" too. The emerging new political and economic geography following the collapse of the Eastern block and the recent major eastward European enlargement has initiated a new political and economic geography in Europe. Within this context, spatial economic dynamics at the border areas and the role of boundaries as obstacles in cross border interaction is viewed with interest. "Bridge", "wall", "tunnel", "opportunity", "threat", "borderless", "re-bordering", "de-bordering", are only some of the terms and notions in bibliography concerning borders and border regions, indicating that this discussion has only just begun. This article attempts to investigate the characteristics of the new economic geography at the EU External borders and the Northern Greek cross border zone as well. More specifically, the following are examined: a) the extent to which city size and distance from borders can influence the strategy of enterprises at the border regions and the level of cross border interaction. b) the association between the cross border economic interaction and the degree of institutional proximity to the EU and c) the barriers related to economic geography, detected along the cross border area of our focus. The above issues are analyzed in the framework of a theoretical discussion and empirical review. The paper deals with a survey conducted at the EU External borders and the Northern. The empirical analysis is based on a research carried out in nine cross border areas within the framework of the EXLINEA European Research project "Lines of Exclusion as Arenas of Co-operation", funded by the European Commission.

Keywords: border, obstacles, economic geography, interaction, cooperation

JEL Classification: F15, F20, F43

Introduction

It is broadly evident in the existing literature that borders discourage spatial interaction and factor mobility functioning as a negative obstacle. However, some studies emerging during the two World Wars suggested that border obstacles are "good". Seen from military point of view the "best" borders would be mountains, lakes or deserts (Holdich, 1916; Newman, 2006). Regardless of the two different approaches, undoubtedly, the intensity of interaction drops where a border crosses a place. On the other hand however, Boggs (1940) asserts that:

> *"Any border is permeable and over time a sort of osmosis takes place, the osmotic pressure increasing directly with institutional barriers to interaction".*

From the mid-1960s to the late 1980s, a relatively silence of research on border issues is observed. During the Cold War era, borders used to function as obstacles whereas no major changes in border status had taken place. This silence ended by the fall of the Berlin Wall in November 1989, and by the collapse of the USSR shortly thereafter.

Within the context of the European economic integration however, the obstructive role of borders seem to have missed its past importance. Thus, institutional, legal, fiscal or transport hindrances to mobility are systematically being abolished within integration processes. Nevertheless, often significant differences in culture, language, and even unspeakable attitudes may be encountered across the borders. Cultural barriers often may be perceived as obstacles, having also a substantial impact on spatial interaction. Is the removal of economic or institutional borders an efficient factor which can lead to real economic integration? This is one of the questions that will be examined in this study.

Freedom of movement is a fundamental characteristic of human beings and human values. Within the context of this study, barriers are defined as discontinuities in interaction between two counties. Barriers of movement may concern people, goods, capitals but also ideas, cultural standards, regulations or intangible items. Barriers detected across a frontier line often emerge due to differences in culture, language, religion, geographical characteristics or institutional difficulties inter alias. However, such barriers may continue to exist even long after the removal of borders. As indicated by Hostfede (1980), often there are such substantial cultural differences between countries that make cross border cooperation difficult. In the same line Van Houtum and Struver A. (2002) argue that

> *"the removal of border as barriers has turned out to be more difficult than expected, especially because of their persistence in people's minds".*

Consequently, despite the abolition of border as a factor mobility barrier, socio-cultural obstacles continue to be in place. As Fischer (1949) notes all borders left a lasting imprint, and the longer a boundary functioned, the harder it was to alter. The above arguments suggest that placing a border and removing a border is not a symmetric action due to the significant role of initial conditions (Petrakos and Topaloglou, 2008).

Once we focus more closely on the obstacles in economic cross border cooperation, a set of research questions arises. At the micro-spatial level, it is important to know the drivers of economic relations in border regions. Are geography and proximity the main determinants? What is the role of market size and purchasing power? Are nearby destinations preferred compared to more distant ones? To which extent do land morphology, quality productivity and product differentiation operate as barriers to interaction? Answering the above questions provides a useful insight into the discussion on economic geography of border and interaction obstacles involved.

Given this background the present paper attempts to identify the barriers concerning the economic geography occurring along the

external borders of the European Union and their impacts on cross border interaction.

The structure of the paper is as follows. In the second section a theoretical discussion on impacts of obstacles on cross border interaction will be provided. In section three, empirical evidence is presented, based on a survey conducted across the external European Unions' borders. Conclusions are provided in the last section.

Impacts of border obstacles related to economic geography on cross border interaction

As far as international trade is concerned, border barriers could be tariffs, quotas, technical requirements and other obstacles which impede mobility. Existing literature suggests that trade cost would be lower without borders (McCallum, 1995; Helliwell, 1998; Bröcker, 1998; Wei, 1996). Barriers in this context may play the role of a *protective wall* against foreign competitors and foreign labour for domestic producers and trade unions. But other groups such as consumers may see barriers as factors which decrease their incomes. Consequently barriers across the border reflect a *conflict of interest* (Batten and Nijkamp, 1990). Differences in the barriers across the border affect not only the level of interaction but also the direction of flows. Hence, a symmetric (equal in both directions) or asymmetric (not equal in both directions) pattern of interaction may occur based on discouraging or stimulating barriers.

An interesting question which arises at this point is whether or not the latter discontinuities in border interaction affect location and allocation patterns of human activities in space. Seen in this context Lösch (1944) in his classical work "The economics of location" claims that border increase distance between two areas affecting location decision issues by comparing border regions with a desert, where goods can be acquired only by distance. Within this analysis borders lead to isolation due to high transport costs. Consequently, borderlands could be characterized as areas of low attractiveness due to their unfavourable geographical conditions (Dimitrov et.al., 2002). On the other hand, firms located in border regions enjoy protection against competitors at the other side. The reduction of obstacles may bring on consequences on sectors, consumers and producers and also employment through a re-allocation of activities, opportunities and threats (Topaloglou et. all, 2005). The removal of barriers due to the integration process redefines not only space but also market size increasing the accessibility in both sides of the borders. Trade liberalization bears new challenges in border regions providing better access to foreign markets enhancing their attraction in terms of location (Brülhart et al, 2004). The issue however of distribution of cost and benefits across the borders is rather uneven and complex. Apart from goods, labour and commuting, borders also function as obstacles to the diffusion of knowledge affecting the viability of firms located in border areas (Rietveld, 2001).

It is worth noting however, that the term "border region" is not ever synonymous with underdeveloped regions. Besides, many regions at the European level with low growth performances are not border areas (Armstrong and Taylor, 1993). On the other hand, border regions located at *gateway places* or close to the European economic core seem to be able to attract economic activities. Seen in this respect, the reduction of obstacle effects of borders could operate as a positive challenge which requires appropriate management of openness (Rietveld, 2001).

Comparing, domestic interaction and cross-border economic interaction, a significant gap emerges, which underlines the fact that barriers across the borders distort space and market size. There have been several attempts to quantify the impact of borders on interaction pattern. In this line Bröcker (1984) has estimated the reduction in volume trade to about one-fifth due to existence of borders for countries of the European Community. Rietveld (2001), comparing the frequency of domestic to international flights between airports with the same distance, has computed a ratio of ten to three for domestic and international connections respectively. This evidence is a clear indication that networks border effects are in force in aviation. Furthermore, he has pointed out that the availability of traffic links between two countries may function as obstacles or incentives for the use of certain transportation modes (e.g. air, road etc). Boonstra (1992), similarly studying domestic and international rail connections has estimated a ratio of ten to four for domestic and international connections accordingly. In addition, comparing the interaction among countries where the same language is spoken there are more frequent connections reported in relation to countries where different languages are spoken. Similar findings appear in the case of business trips and crossing transport by car or bus. Surprisingly, most of the above evidence refers to interaction between countries located in the core of European Union such as Germany, Netherlands and Belgium, which have been members of the European Union for decades. Hence, we may safely assume that border effects are much more significant across the external borders of the European Union. Eventually, Rietveld (1993), supports that there is a double effect of borders concerning cross border transport interaction in particular: demand and supply side. In detail, the demand related obstacles (due to the lower demand for international destinations) create additional supply related obstacles (due to the lower frequencies).

The development of a border-obstacle typology is of critical importance for a thorough analysis of the impacts of the border effect on cross border interaction. The European Commission (2005) in the framework of a survey on obstacles to cross border mergers and acquisitions has identified five groups of barriers: (a) legal barriers, (b) tax barriers, (c) implications of supervisory rules and requirements (d) economic barriers (e) attitudinal barriers. To analyze the impact of borders, Cattan and Grasland (1992) developed a framework in which two factors were distinguished to affect places in space: distance and borders. The impacts of distance and borders are specified for two types of variables: state variables relating to the situation in certain places; and flow variables relating to the interaction between different places. Two possible effects of borders were considered: (1) non-homogeneities between places at different sides of the border, and (2) discontinuities in flow between places at different sides of the border. Of course distance influences interaction in a similar way but with a much more gradual pattern. Within this context, similarity depends on distance, but also on whether or not the two regions are divided by border line. There is no doubt that the factors of similarity and flows are correlated. Reduction of border obstacles for instance, will encourage labour commuting, flow of ideas, knowledge and standards stimulating similarity. On the other hand, economic integration stimulates specialization and differentiation in production, enhancing dissimilarity. Ratti and Reichman (1993) developed a theoretical concept that is focused on the overcoming of barriers through the construction of contact areas allowing inter-regional cooperation. Furthermore, they suggested two different approaches to overcome the

existing barriers and border effects: (1) a micro-economic approach which examines the frontier through the analysis of the economic actor's strategy behaviour, and is based on the theory of industrial organization; (2) a meso-economic approach which considers the role of "frontier" within a specific supporting space or milieu.

The fragmentation of the market imposes additional transaction cost on cross-border interaction. For instance, trade can be complex, and more expensive, when two firms involved operate on a different legal framework. Even without legal, tax or other barriers, the remaining differences between two countries would require a differentiated approach to be adapted to the local environment. This limits potential synergies. The most obvious example is language and its implications in terms of customer services for instance. The low level of cross-border consolidation in European Union might also be explained by a lack of potential targets, due to the lack of middle-size institutions. National consolidation of middle-size institutions resulted in the emergence of rather large and complex institutions. The absence of critical size in some market segments (e.g. investment banking) may incite institutions to enter into a niche strategy, where the advantages of cross-border mergers that create large players is less evident from an economic point of view (EC, 2005). Differences in economic cycles across the different Member States may also play a role, in that the economic environment has a strong effect on profitability. Different strategies might be needed for different macroeconomic conditions, and therefore it might limit the scope of a potential pan-European strategy implemented at the level of a cross-border group, whereas domestic groups face a single economic environment. However, this could also be a driver for consolidation, as those differences in cycles can help to smooth the profitability by reducing risk and earnings volatility through geographical diversification (E.C., 2005).

Empirical Evidence

What is attempted within the empirical part of our research, is to scrutinize the extent to which economic geography functions as a barrier to interaction across the external border of European Union.

The empirical analysis is based on a research carried out in nine cross border areas at the EU's external borders within the framework of the EXLINEA[1] European Research Programme. Three of these cross border areas are found in the Northern Greek borders. The survey was conducted within the period of May 2004 to March 2005, with the use of a standardized questionnaire which included a total of 220 closed questions providing answers to sets of questions in a Likert scale ranging from 1 to 7. A total of 937 questionnaires have been gathered within the EXLINEA project from which 400 questionnaires refer to the Greek case study. The actual cross border areas under scrutiny are depicted in Map 1.

[1] EXLINEA (Lines of Exclusion as Arenas of Cooperation: Reconfiguring the External Boundaries of Europe — Policies, Practices, Perceptions) is funded by the European Commission under the 5th Framework Programme. This survey is a part of a wider effort to study the evolution, problems, policies, practices and perceptions prevailing in the old and new external borders of the European Union.

Map 1: Cross border study areas of the EXLINEA project

Source: Authors' Elaboration

The research teams collected 937 questionnaires representing the public and private sector. Table 1 illustrates the basic profile of the sample which includes representatives of the public and of the private sector, comprising a balanced sample. Table 2, provides summary information on the respondents per each border zone in our sample.

Table 1: The profile of respondents of the survey

(a) Public	**(b) Private**
Local Authoritites	Local Chambers
Public Agencies	Selected large firms
Development agencies	Consultants
Agencies promoting cbc	Journalists
Universities and Institutions	NGOs

Source: Exlinea project, own elaboration

Table 2: Summary Information of the Research Sample

No	CROSS BORDER ZONES	QUESTIONNAIRES
1	GREECE (49)-ALBANIA (49)	98
2	GREECE (83)-FYROM (41)	124
3	GREECE (60)-BULGARIA (118)	178
4	FINLAND (39)-RUSSIA (42)	81
5	ESTONIA (70)-RUSSIA (78)	148
6	POLAND (29)-UKRAINE (26)	55
7	ROMANIA (75)-MOLDAVIA (73)	148
8	HUNGARY (24)-ROMANIA (41)	65
9	HUNGARY (11)-UKRAINE (29)	40
	TOTAL	**937**

Source: Authors' Elaboration

Table 3 provides summary information concerning the questions mentioned above, including results referring to the Northern Greek border area (columns 2 to 9) and the European level (columns 10 to 13), as well. The responses range from 1 to 7, with value 1 representing barriers that cannot be overcome and value 7 indicating no barriers at all.

Table 3: Economic Geography as a barrier

1	2		3		4		5		6	7	8	9
1 = barrier that cannot be overcome 7 = no barrier at all	Greece Albania		Greece FYROM		Greece Bulgaria		Total Greece (ALFYBU)		Non EU States	New Member States	EU-15	EXLINEA
	GR	AL	GR	FY	GR	BU	West	East	BEX	BNM	BEU	
Observations	**49**	**49**	**83**	**41**	**60**	**118**	**192**	**208**	**338**	**368**	**231**	**937**
Insufficient in size nearby markets in the other side	3,35	4,98	3,64	4,49	3,80	4,55	3,61	4,64	4,16	4,38	3,72	**3,8**
	sig. (,000)						sig. (,000)		sig. (,000)			
Low purchasing power of the nearby markets in the other side	3,16	5,31	3,47	4,21	3,66	4,51	3,45	4,64	4,32	3,83	3,43	**4,0**
	sig. (,000)						sig. (,000)		sig. (,000)			
Difficult geographical conditions in border regions	3,90	5,31	4,31	4,90	4,31	4,41	4,20	4,71	4,87	4,50	4,40	**4,7**
	sig. (,002)						sig. (,060)		sig. (,012)			
Large cities on the other side too far away	4,12	4,84	4,05	4,46	4,19	4,38	4,11	4,50	4,72	4,40	4,23	**4,4**
	sig. (,029)						sig. (,176)		sig. (,052)			
Low quality and productivity of local firms	3,49	3,49	3,81	4,10	4,03	3,99	3,80	3,89	3,69	3,81	3,76	**3,7**
	sig. (,001)						sig. (,784)		sig. (,550)			
Limited product differentiation of local economy	3,43	3,96	3,95	4,18	4,25	4,02	3,91	4,03	3,68	3,86	3,78	**3,6**
	sig. (,019)						sig. (,117)		sig. (,316)			

Source: Authors' Elaboration

The empirical research focuses on two levels: (a) micro-geographical level where the Northern Greek border area is examined and (b) EXLINEA level taking into account the macro-geographical European perspective. In detail, the first level is concerned with the Greek-Albanian, Greek-FYROM and the Greek-Bulgarian border zones. At the macro-geographical level, we classify the regions of our sample

presented in Table 3, according to their location along the borders. Within this context, the following groups have come up: (a) The EU-15 border regions (BEU), (b) the border regions in New Members States (BNM) and (c) the border regions in External Countries (BEX). A set of six questions related to economic geography are addressed for analysis aiming to obtain information on the level of the border effect as a barrier on the other side. These questions deal with: (1) market size (2) purchasing power (3) geographical conditions (4) distance of large cities (5) quality and productivity of local firms and (6) product differentiation of local economy. Apart from descriptive statistic in all the particular parameters under scrutiny, it was selected the analysis of variance with the one-way ANOVA methodology, in order to examine the differences among the means. The level of significance was determined to $p<.05$.

Based on the results provided in Table 3, Diagram 1 graphically depicts the Northern Greek borders' performances. The vertical axis represents the level of obstacle ranging from 1 (max) to 7 (min) while value 4 shows the average grade.

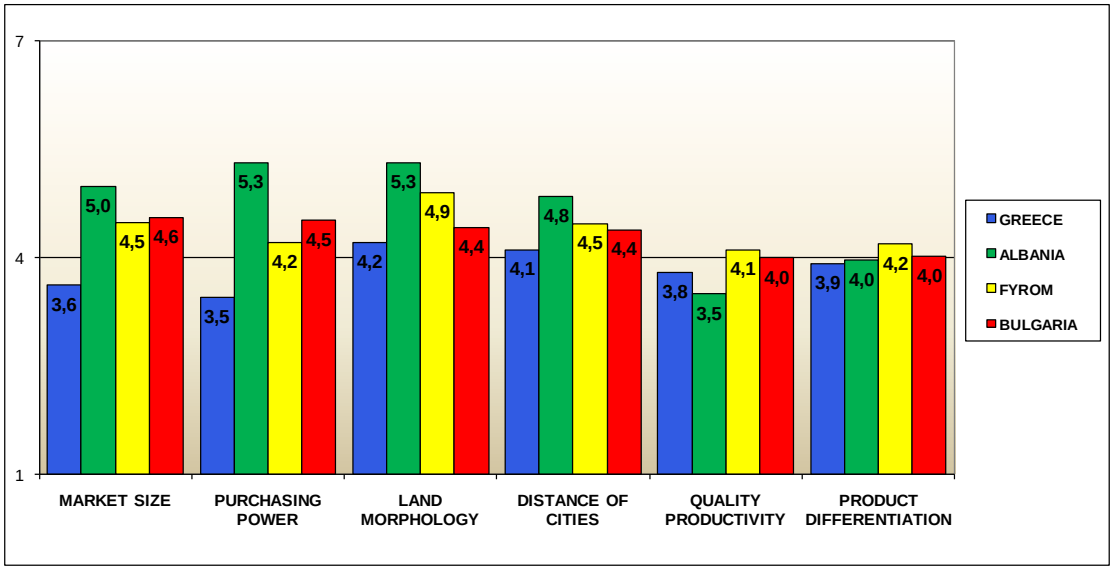
Given this background of information, the following remarks can be highlighted: First, it is obvious that market size appears to be an obstacle for the Greek side, while the east border zone (Albania-FYROM-Bulgaria) exhibits values higher than average. The latter finding indicates that the Greek market size is considered as asset. Second, a dividing line in perceptions becomes explicit concerning purchasing power between east and west. Therefore, Greeks regard the weak purchasing power of their neighbours as an obstacle whilst the east zone and especially Albanians consider that Greeks' purchasing power does not impede obstacles. Third, surprisingly, despite the fact of the harsh geographical conditions along the mountainous cross border zone, this factor does not seem to play a decisive role to interaction in either the east or west side. Fourth, large cities are not perceived as distant locations so as to function as obstacles to interaction. Consequently, the parameter of distance from large cities does not appear to be a significant barrier. Fifth, as far as quality and productivity of local firms are concerned, lower performances than average are reported in almost all cases. This evidence reflects a weak productive base indicating that border zones are generally areas of low performances and low growth in relative terms (Niebuhr και Stiller, 2002). Sixth, responses with regard to product differentiation of local economy range around average grades. It is obvious that border regions' market size does not encourage product differentiation as it usually occurs in metropolitan areas (Fujita, 1993; Thisse, 2000).

Taking into consideration the data reported in Table 3, the summary information referring to the total EXLINEA project is illustrated in Diagram 2.In fact, we aggregate our sample into the EU-15 border regions (BEU), the border regions in New Members States (BNM) and the border regions in External Countries (BEX). The vertical axis shown in Diagram 1, represents the level of obstacles ranging from 1 (max) to 7 (min) while value 4 shows the average grade.

The information provided above and in diagram 1 allows us to make the following comments: Firstly, market size obviously, is perceived as an obstacle for the BEU regions, while BEX regions report values around the average range. The fact however, that BNM values demonstrate the highest values, allows us to assume that Russia and Ukraine (included in BEX group) are considered as large market sizes in a way. Secondly, a systematic graduation is detected in values reported among BEU, BNM, and BEX regions, indicating that purchasing

power is viewed by EU-15 border areas as a more significant obstacle compared to BNM and BEX regions respectively. Thirdly, in the same line with the findings in Diagram 1, the geographical conditions along the borders are not considered as a remarkable obstacle to interaction in all cases. Contrary to the prevailing perceptions dealing with the importance of geographic morphology in cross border cooperation, the latter evidence indicates that the real barriers should be investigated in other fields. Fourthly, the distance of large cities does not seem to be a significant barrier to cross border interaction. Fifth, quality and productivity of local firms exhibit lower performances than average in all cases, apparently due to lower growth and competitiveness in such areas. Similarly to the Northern Greek border area, this finding leads us to the conclusion that the low quality and productivity of firms occurring in border areas, discourage interaction. Sixth, as far as product differentiation of local economy is concerned, all the values reported are lower than average, reflecting an obstacle to interaction. In contrast with capital and large metropolitan areas, the low agglomeration dynamics and inefficient market size occurring in border areas discourage product differentiation (Dimitrov, κ.α. 2002).

Diagram 1: Barriers to interaction in the Northern Greek border regions

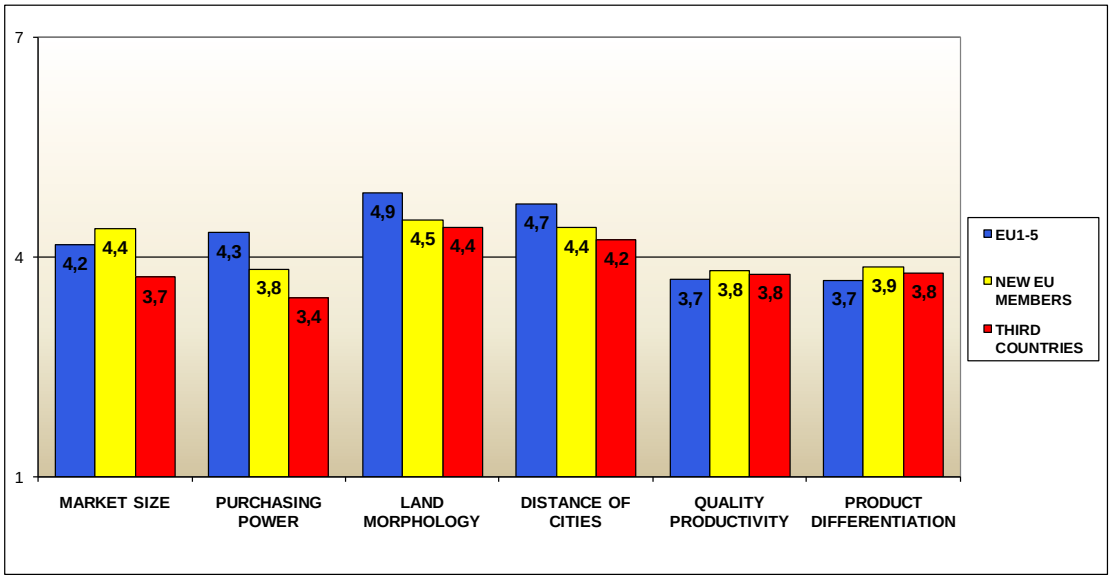


Source: Authors' Elaboration

In the next stage of our analysis, we attempt to scrutinize the research question mentioned above by depicting a series of maps which refer to areas of our focus. The first group of maps provides visual information with regards to the Northern Greek border area in the regional (NUTS III) level. Aggregated results based on the nine cross border zones within the EXLINEA project context are presented in the second group of maps. As far as the range of the color is concerned, the darker the color the lower the level of obstacle is.

Map 2a and Map 2b, provide visual information in relation to the extent to which nearby market size is viewed as insufficient.

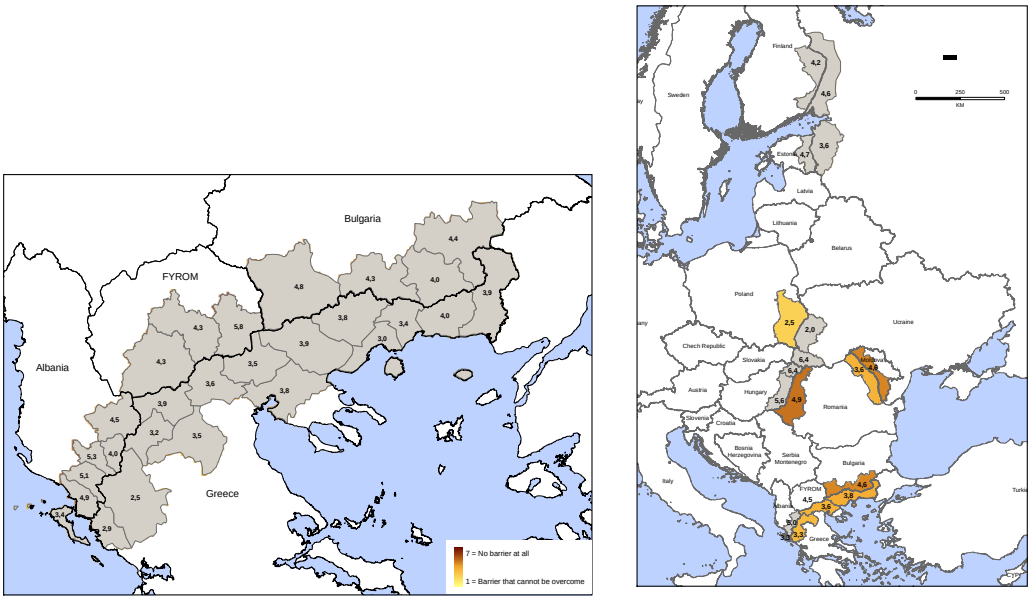
Diagram 2: Barriers to interaction in the EU external border regions



Source: Authors' Elaboration

In Map 2a, it becomes explicit, that market size is considered for Greeks as an obstacle to interaction almost in all regions and especially to those opposite to the Albanian border zone. On the other side however, it is remarkable that the highest values are reported in regions with better access to the metropolitan area of Thessalonica and also in the Albanian regions located in the south part of border zone with better access to the Greek hinterland and Athens as well. In Map 2b, market size is perceived as an obstacle in border zones of Poland, Ukraine, Romania (opposite to Moldova), Greece, and in Russia (opposite to Estonia).

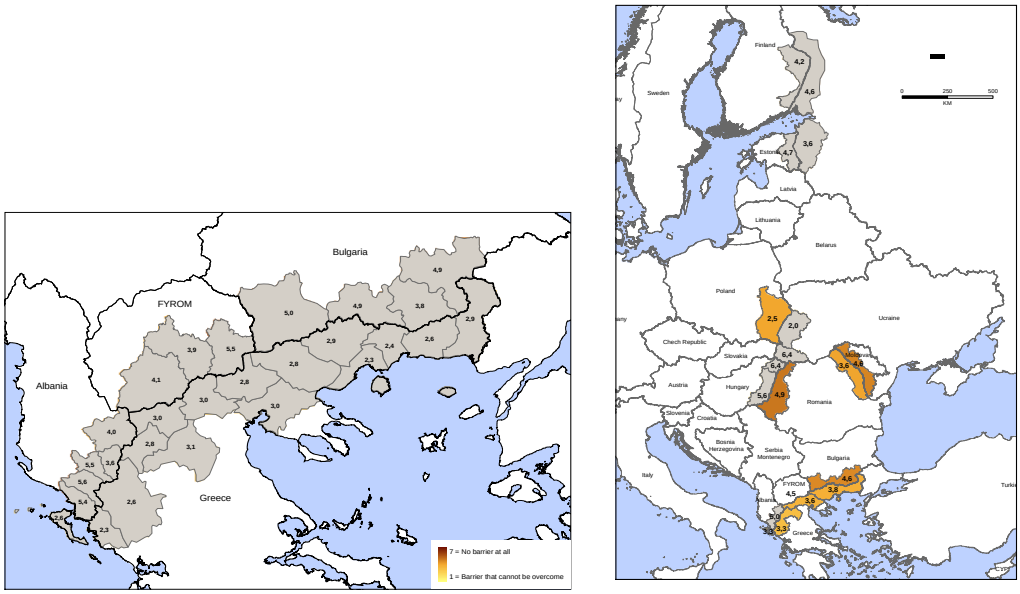
Maps 2a, 2b: Insufficient in size nearby markets in the other side



Source: Authors' Elaboration

A dividing line between all Greek border regions and border regions in the other side is obvious in Map 3a. This differentiation however, becomes even more intense along the border regions close to Thessalonica and the south part of the Albanian border zone as well. In Map 3b, the purchasing power in Hungarian, Ukrainian, Greek, Finnish and Estonian sides is considered to be an obstacle to interaction.

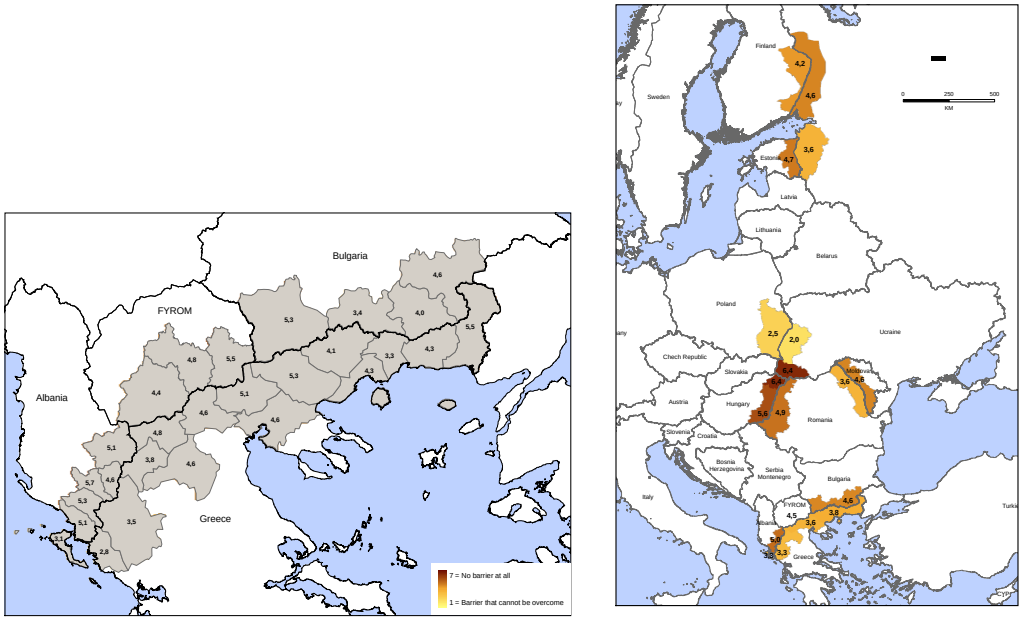
Maps 3a, 3b. Low purchasing power of the nearby markets in the other side



Source: Authors' Elaboration

Map 4a and Map 4b, depict the level of obstacles occurring due to the difficult geographic conditions in border regions.

Maps 4a, 4b: Difficult geographic conditions in border regions



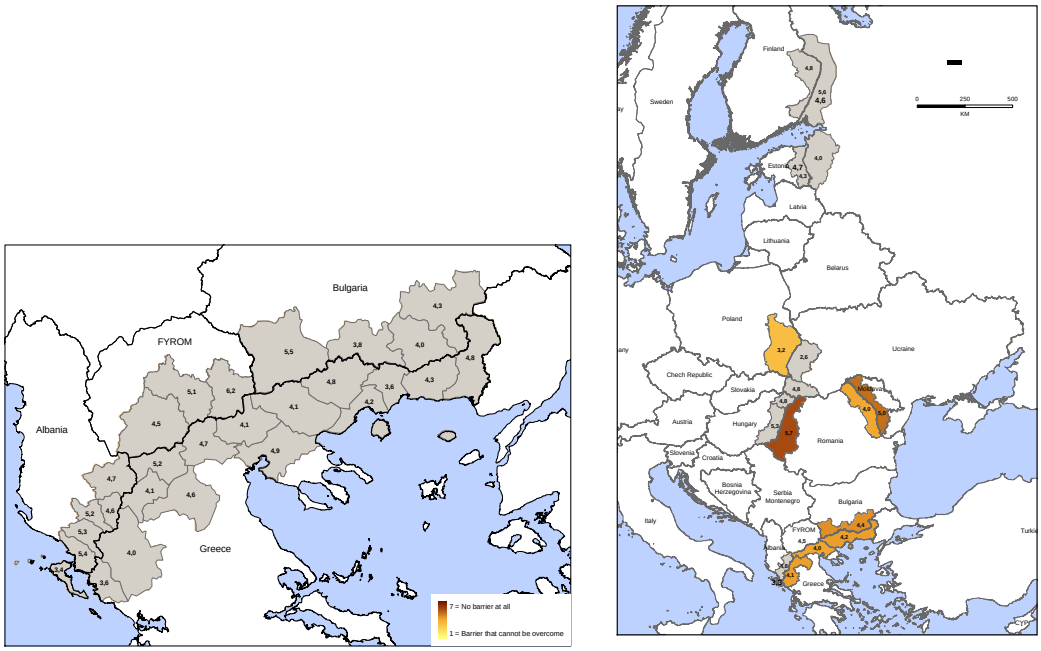
Source: Authors' Elaboration

In Map 4a, it becomes explicit that geographical conditions do not constitute an obstacle to interaction especially in the existing crossing points between Greece-Bulgaria and Greece-FYROM. Despite the difficult geographical conditions the Albanian border regions do not consider this factor as a hindrance. The Greek regions opposite to Albania however, see the harsh geographical morphology as a barrier. Similar views are detected in the Greek side opposite to Bulgaria in the regions where no crossing points exist. These findings allow us to assert that there is an association between perceptions concerning geographical conditions and the existence of crossing points along the borders. In Map 4b, it is obvious that geographical conditions are viewed as obstacles in the Polish-Ukrainian cross border zone and in Greek border zone opposite to Albania.

Map 5a and Map 5b provide visual information related with the distance of large cities. More specifically, what is illustrated here is whether or not the location of large cities is perceived being located too far away.

It is obvious that in most of the regions reported in Map 5a, large cities are not viewed being located too far away. The highest performances are detected in the Bulgarian and FYROM border regions close to the city of Thessalonica as those located in the south part of the Albanian regions close to the city of Ioannina. In Map 5b, we observe that apart from the case of Polish-Ukrainian cross border zone, the distance of large cities is not perceived as an to interaction.

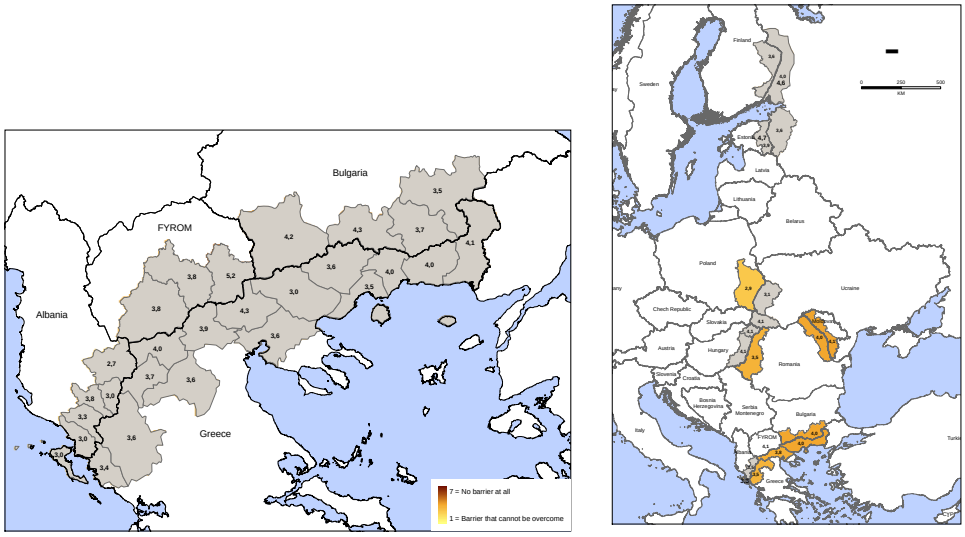
Maps 5a, 5b: Large cities on the other side are too far away



Source: Authors' Elaboration

Map 6a and Map 6b depict the perceptions concerning the quality and productivity of local firms and the extent to which these parameters are viewed as a barrier.

Maps 6a, 6b: Low quality and productivity of local firms

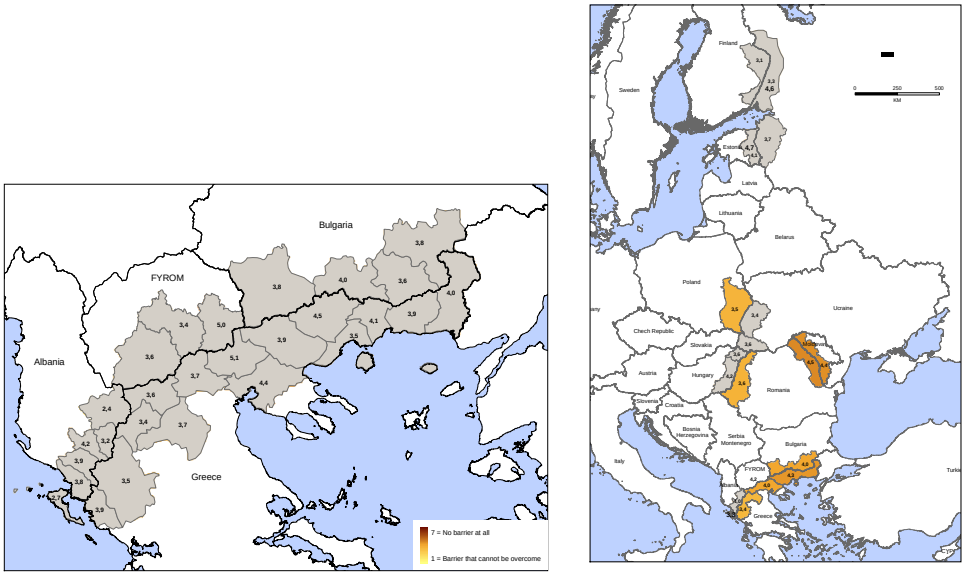


Source: Authors' Elaboration

The results depicted in Map 6a illustrate a widely spread obstacle to interaction as the reported values are lower than average in most of the border regions. In the Greek-Albanian zone in particular, the low values in all cases reveal a sub-border area which is characterized by low quality and low productivity. However, the higher values which are reported in the Greek-FYROM and Greek-Bulgarian border regions allow us to assume that industrial tradition plays a substantial role in quality and productivity of the local firms. In Map 6b, we notice a disintegrated picture where half of the border zones consider the quality and productivity of local firms as an obstacle while the other half supports the opposite.

Map 7a and Map 7b, present the results with regards to product differentiation of the local economy.

Maps 7a, 7b: Limited product differentiation of local economy



Source: Authors' Elaboration

In Map 7a it becomes explicit that the highest values are concentrated around the metropolitan area of Thessalonica. This underlines the important role to interaction the existence of large urban centers have, close to the borders. Map 7b similarly to Map 7a, demonstrates a non homogeneous picture concerning the factor of product differentiation. Apparently, obtaining clear conclusions from Map 7b, requires a further study of the specific features occurring in each border zone.

Conclusions

So far there has been a growing literature on border effect issues emerging. Despite the fact of different approaches concerning the necessity of borders, almost all agree that frontiers impede hindrances to interaction. Furthermore, the existing evidence suggests that even after the reduction or removal of consolidated border obstacles, real or mental barriers continue to exist.

We based our empirical work on a survey conducted within the framework of the EXLINEA project in nine different cross border areas at the Union's external border. In this paper we focused on obstacles related to economic geography as well as on their impacts on cross border interaction. The main conclusions derived from the precedent analysis which deserve consideration are the following:

First, the fact that market size of the nearby markets in the other side is perceived by the BEU border regions as an obstacle reveals an important parameter which discourages mobility and de-localization of activities in such type of border regions. On the other hand, taking into account that West-East interaction in Europe has been substantially intensified over the last fifteen years, we may assume that a sort of "tunnel effect" is in place among metropolitan areas which neglect border areas. The finding of the systemic higher performances in regions close to Thessalonica in particular, confirms the latter argument. Within this context, it seems that the role of planning and regional policy could prove most valuable for the development perspective of border areas.

Second, the systemic differentiation in perceptions with regards to purchasing power as an obstacle between BEU, BNM and BEX regions is in line with the differentiation in terms of income levels. The same dividing line is also detected across the Northern Greek border area. This evidence indicates that different purchasing powers have a rather bordering interaction effect between two adjusted areas. This makes a lot of sense if one takes into consideration the significant associations detected between the purchasing power form on the one hand and the level of export, immigration and labour flows from nearby regions on the other.

Third, interestingly, geographical conditions do not seem to play as an important role to border interaction as it was expected. The fact also that the higher values detected in regions close to crossing points, allow us to claim that cross border infrastructures reduce obstacles, independently of the land morphology. These findings have major policy implications as they review the prevail notions referring to the crucial role of the geographical conditions in the level of economic interaction. However, social interactions seem to be affected by difficult geographic conditions.

Fourth, large cities are not viewed as being too far. In particular such perceptions are reported to regions close to metropolitan areas. Moreover, the location of large cities is associated with social visits to nearby regions. If these findings indicate something, it is

that the existing border urban system across the external Union's borders does not function as an obstacle to interaction. The latter could operate as "favorable initial conditions" within the framework of the European Neighborhood Policy recently launched by the European Union.

Fifth, quality and productivity of local firms appear to be systematically an obstacle to interaction in the particular area. Also, taking into consideration that this factor is associated with low investment to the nearby largest cities we may assume that the weak productive base occurring traditionally in border areas is strongly correlated with the low level of interaction.

Sixth, the findings concerning product differentiation in the local economy reveal an obstacle to interaction in all cases. A correlation meanwhile is detected between product differentiation with imports from the nearby markets and investment to nearby markets. This evidence suggests that these particular border areas are low opportunity regions with low agglomeration dynamics which do not favor product differentiation.

References

Armstrong, H. and Taylor, J., 1993, "*Regional Economics and Policy*", Philip Allan, Oxford.

Batten D. and P. Nijkamp, 1990, "Barriers to communication and spatial interaction", *The Annals of Regional Science,* Vol. 24(10), pp.1409-1429.

Boggs, S. W., 1940, "*International Boundaries: A Study of Boundary Functions and Problems*", New York: Columbia University Press.

Boonstra, J., 1992, "*Barrieres in verkeer en infrastructuur; een internationaaal perspectief*", Vrije Universiteit, Amsterdam.

Bröcker, J., 1984, "How do international trade barriers affect interregional trade?" in: Andersson AE, Isard Vv; Puu T (eds) *Regional and industrial development theories,* North-Holland, Amsterdam, pp. 219-239.

Bröcker, J., 1998, "How would an EU-membership of the Visegrad-countries affect Europe's economic geography?", *Annals of Regional Science*, Vol. 32, pp. 91-114.

Brülhart, M., Crozet, M. and Koening P., 2004, "Enlargement and the EU Periphery: The Impact of Changing Market Potential", *Hamburg* Institute of International Economics, Discussion Paper No 270.

Cattan, N. and Grasland, C., 1992, *"Migrations of population in Czechoslovakia; a comparison of political and spatial determimants of migration and the measurement of barriers", Trinity Papers in Geography*, No 8, Dublin.

Dimitrov, M., Petrakos, G., Totev, S., and Tsiapa, M., 2002, "Cross-Border Cooperation in Southeastern Europe: The enterprise's Point of View", *Eastern European Economies*, Vol. 41 (5) pp: 5-25

Dimitrov, M., Petrakos, G., Totev, S., and Tsiapa, M., 2002, "Cross-Border Cooperation in Southeastern Europe: The enterprise's Point of View", *Eastern European Economies*, Vol. 41 (5) pp: 5-25

European Commission, 2005, *"IPM survey on obstacles to cross-border mergers and acquisitions"*, DG Internal Market and Services, April 2005

Newman, D., 2006, "Borders and Bordering: Towards an Interdisciplinary Dialogue" *European Journal of Social Theory,* Vol. 9, pp. 171-186

Fujita, M., 1993, "Monopolist competition and urban systems", *European Economic Review*, Vol. 37, pp. 308-315.

Helliwell, J., 1998, "*How Much do National Borders Matter*", Washington: The Brookings Institution.

Hofstede, G., 1980, "*Cultures consequences; international differences in work related values"*, Sage, Beverly Hills CA.

Holdich, T. H., 1916, "*Political Frontiers and Boundary Making"*, London: Macmillan.

Lösch, A., 1944/1954, "*The Economics of Location",* Yale University Press: New Haven

McCallum J., 1995, "National Borders Matter: Canada–US Regional Trade Patterns", *American Economic Review,* Vol. 85 (3), pp. 615–623.

Niebuhr, A. and Stiler, S., 2002, "Integration effects in border regions. A survey of Economic Theory and Empirical Studies", *Discussion Paper, no 179,* Hamburg Institute of International Economics.

Ratti, R., 1993, "Spatial and economic effects of frontiers: Overview of traditional and new approaches and theories of border area development", in Ratti, R. and Reichman, S. (eds), *Theory and Practice of transborder cooperation*, Verlag Helbing & Lichtenhahn: Basel und Franfurt am Main.

Rietveld, P. (2001), "Obstacles to openness of border regions in Europe", in van Geenhuizen, M., Ratti, R. (Eds),*Gaining Advantage from Open Border: An Active Space Approach to Regional Development*, Ashgate Publishing, Burlington, VT, .

Rietveld, P., 1993, "International transportation and communication networks in Europe: the role of barrier effects", *Transportation Planning and Technology"*, vol. 17, pp. 311-317.

Thisse, F., 2000, "Agglomeration and regional imbalance: Why and is it bad?" *EIB Paper*, Vol. 5 (2), pp. 47-67.

Petrakos, G. and Topaloglou, L., 2008, "Economic geography and European integration: the effects on the EU's external border regions", *International Journal Public Policy*, Vol. 3, Nos. 3/4, pp.146–162.

Topaloglou, L., Kallioras, D., Manetos, P. and Petrakos G., 2005, "A Border Regions Typology in the Enlarged European Union", *Journal of Borderlands Studies*, Vol 20 (2).pp: 67-89.

Van Houtum and Struver A., 2002, "Borders, Strangers, Doors and Bridges", *Space & Polity, Vol. 6, No. 2, 141–146,*

Wei, S.J., 1996, "Intra-National versus International Trade-How Stubborn are Nations in Global Integration?", *NBER Cambridge Massachusetts*, Working Paper No 5531.