

TRACING THE DETERMINANTS OF ECONOMIC CROSS-BORDER INTERACTION IN THE EUROPEAN UNION

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The abolition of the artificial impediments of cross-border interaction inside the European Union, has released dynamics that have influenced significantly the economic space at the frontiers. In contrast, at the European Union external borders, the constraints concerning cross-border interaction with third countries have become more tangible in the sphere of reality. Under this framework, a new mix of opportunities and the threats seems to come forth together with a new political, social and economic map that redefines the notion of vicinity. In the present article, the study of the “border effect” in Europe is attempted through the investigation of the basic determinants of the spatial dynamics of cross-border interaction. The findings of the article contribute to the better understanding of the “border effect” with significant implications for both theory and policy.

Key words: borders, interaction, integration, vicinity, trade, investment, migration

INTRODUCTION

The abolition of border impediments concerning the movement of people and production factors is one of the most basic elements of the European integration. The abolition of the artificial border impediments inside the European Union (EU) has released dynamics and brought into the surface a new mix of opportunities and threats together with a new political, social and economic map. At the external EU borders, on the contrary, the barriers to cross-border interaction with the neighboring third countries became more sensible, forcing many people to discuss about a “fortress-Europe”.

But also inside the EU, besides the fact that most of the institutional barriers regarding the

movement of people, goods, and capital, have been vanished, the asymmetries at the level of the historical image, the culture, the language and the perceptions remain important. Characteristic is the fact that even between the six founding members of the EU significant differences regarding the social and economic practices can be detected, despite the fact that the economic barriers among them are practically abolished for half a century. Furthermore, it is obvious that the level of cross-border relations, taking place through trade, foreign direct investments (FDI) and migration, is certainly affected not only from economic but also from qualitative parameters such as history, language and culture (Topaloglou et al., 2005).

Regarding the EU external surrounding, the recently introduced EU Neighborhood Policy officially aims at the creation of a “ring of friends” through policies for the encouragement of economic and political cooperation. Inside this framework, the

extremely important geopolitical and economic procedures have accentuated the need for processed spatial policies regarding borders. Suffice it to say that the EU borders now with 16 new countries with populations that reaches almost 400 million inhabitants and Gross Domestic Product (GDP) that is smaller than the 10% of the corresponding EU one.

Scientific discussion regarding the spatial and economic impact of the “border effect” is still in a preliminary stage. There are many those supporting that scientific discussion has been encircled in ad hoc case studies which are not able, however, to propound more general theoretical assumptions (House, 1982; Rumley and Minghi, 1993; Clark, 1994). As a result, the answers to the question that concerns the determinants of cross-border interactions remain vague.

In the framework of this discussion a series of interesting questions came at the forefront. To what extent, the institutional integration

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determines the intensity of cross-border interaction among countries? Do geographical coordinates affect the pattern and the intensity of cross-border interaction at the national level? To what extent, the cross-border interaction among the EU countries appertains to a “core-periphery” model?

The present article aims to investigate the basic factors that affect and determine the spatial dynamics of cross-border interaction among the EU countries. The elements of cross-border interaction analyzed concern trade, FDI, and migration. Due to the lack of the necessary data at the regional level, the analysis concerns the national level. This restriction, however, does not reduce the empirical and the theoretical contribution of the article since the extraction of general trends regarding the issue under consideration is achieved in a very satisfactory way. The analysis includes both the EU countries and the EU neighboring countries. This sample is classified on the basis of geographical and geopolitical criteria (north, south, east, west) and development criteria (low GDP per capita, high GDP per capita)². Simultaneously, the significance of vicinity and integration for the pattern and the intensity of cross-border interaction are evaluated.

The next section surveys the theoretical discussion regarding the impact of the existence and the abolition of border impediments on cross-border interaction. The third section attempts a comparative evaluation of cross-border interaction among the various groups (on the basis of geopolitical and development criteria) of EU countries regarding the neighboring and the non-neighboring countries under consideration. The last section presents the conclusions of the article.

THEORETICAL OVERVIEW

It is widely accepted that borders act as barriers of cross-border interaction, increasing the international trade cost; distorting the market and increasing the industrial production costs (Suarez-Villa, 1992; Kamann, 1993; Ratti, 1993; Clark, 1994). Respectively, cross-border interaction would be strengthening if there weren't borders. (McCallum, 1995; Wei, 1996; Bröcker, 1998; Helliwell, 1998).

² For the needs of the present article the limit between low and high GDP per capita is set to be at the level of 20,000 euros per inhabitant.

According these statements, it is clear that the intention of societies and countries to state borders among them comes along with one more cost, having spatial dimension. For the estimation of this cost, remarkable efforts can be found in the literature (Mackay, 1958; Bröcker, 1984; Nuesser, 1985; Rietveld and Janssen, 1990). Therefore, the reduction of border barriers at the institutional level, as a result of political integration and liberalization, undoubtedly affects the space and the economy (Hanson, 1996 and 1998). However, recent studies show that the abolition of economic barriers is not accompanied by analogous intensification of cross-border economic interaction (Collier and Vickerman, 2001). In other words, economic integration at the institutional level does not mean automatically financial market integration.

The crossing of borders in order to perform trade, FDI and immigration, it is by nature a phenomenon, which cannot be analyzed and interpreted, solely in economic terms. Recently, more and more articles in the literature analyze the border interaction as a social construction that demands interdisciplinary approach (Wilson and Donnan, 1998) while at the same time stress the dialectical relationship between space and social life (Paasi, 1992 and 1996; Kaplan, 1994; Pettman, 1996; Rabinowitz, 1998; Leontidou et al., 2002). However, the interdisciplinary analyses that have appeared so far haven't managed to bridge the theoretical gap among different statics (Newman, 2003; van Houtum, 2003).

Usually borders at the local or international level may operate as “institutions – filters” with their own rules of entrance and exit, specifying every time the degree of transportation of goods, capitals, services, people but also social principles (Paasi, 1996). The different language, for instance, between two neighbor countries discourages cross-border interaction (Meinhof et al., 2003). On the other side, the division “inter/extern” can be specified at the supra-national level (for example the EU) imposing regulations of inclusion or exclusion horizontally (Leontidou, 2003). The Schengen Treaty is the most prominent example of this type, as it is imposed on the whole of the external borders of the European Union³,

³ To be accurate, members of the Schengen Treaty are 22 out of 27 EU countries.

ignoring the individual social, historical, political or economic circumstances.

Moreover, it is interesting to examine the spatial distribution of economic activities as a result of the abolition of border barriers. It is true that the theory of integration and the corresponding theoretical models have failed so far to give satisfactory answers to the question of the distribution of trade, FDI and immigration at the intra-national level when borders are wiped out (Niebuhr and Stiller, 2002). For instance, does cross-border interaction include the border space at the regional level or it heads mostly to the capitals and the metropolitan areas, feeding polarization and “tunnel” phenomena (Petraikos and Topaloglou, 2008)?

Border areas are not considered generally to regard a popular location of economic activities mainly because of their distance from major metropolitan centers (Dimitrov, 2002). It is no coincidence that in most cases capitals are located in the mainland. The few cases where the capital is located near the borders (eg. Vienna) can be interpreted as the outcome of historical and political developments (eg. the former Austro-Hungary). The fact of reducing transportation cost and the economies of concentration induce companies to locate at the center and not at the borders because they ensure the possibility of a long-range market (Giersch, 1940; Lösch, 1944/1954). In the classic model of economic geography of Krugman (1991), the abolition of economic barriers will result in such reduction in transport costs in order to encourage companies to relocate in areas where there are already strong economies of concentration. So, the large market located in the center, attracts businesses and workers from smaller markets, increasing even further the placement in large markets. The conclusion of the analysis was that transportation cost plays a regulatory role in the spatial allocation of activities.

On the other side, the opening of borders offers access to businesses in a large market, like the EU market, resulting in the fact that border area acquires a degree of attractiveness. In other words, distance and market size determine greatly the balance between centripetal and centrifugal forces developed due to the removal of border barriers (Kallioras, 2006 and 2007; Topaloglou, 2008; Topaloglou and Petraikos, 2008). Hijzen et al. (2006), exploring the extent to which distance and the degree borders' openness affect cross-border investments, concluded that distance is

negatively correlated with investment. However, when they looked at in particular cross-border mergers and acquisitions among similar manufacturing industries found that distance affects investment at a lower level. Moreover, policies such as transportation, telecommunications, research and development are important determinants of interaction (Engel, 1999; Heimpold, 2000).

As far as trade is concerned, empirical estimates have shown that increasing the distance between countries is negatively correlated with the intensity of trade relations between them (Rauch, 1991; Kinoshita and Campos, 2003). Under this view, borders and their obstacles can be seen as factors that increase distance (Johnston et al., 1994). Conversely, the reduction of trade barriers at the borders would increase trade by reducing the distance.

It is also important whether trade developed between two neighboring countries is inter-industry (exchange of products of different sectors) or intra-industry (exchange of products of the same sector). In the inter-industry case, less developed border areas are in danger of being locked in labor-intensive

specializations allowing integration to lead in an increase of spatial inequalities (Panteladis, 2002). These analyses challenge neoclassic approaches that support the idea that regional trade leads to equalization of wages of labor and capital among regions through specialization and exchange (Samuelson, 1964).

Some recent empirical surveys suggest that trade transactions are not only influenced from vicinity but also from the level of economic development. For instance, it has been ascertained that the Baltic and South-Eastern countries trade more with the developed countries of the EU than with themselves (Uvalic, 2002; Paas, 2002; Bartlett, 2009). These surveys have, also, indicated the positive effect of the trade agreements between these countries and the EU in the reinforcement of the reforms and the volume of trade transactions.

The integration between neighboring countries affects the regional labour market through three mechanisms; trade, FDI and migration (Boeri and Brücker, 2000). In this context, the elimination of border barriers creates new facts regarding the geographical coordinates of a

border region in a more integrated market and, as a result, the location conditions of enterprises and employees are affected. Proximity due to vicinity encourages migration flows, having as a result the impact of integration on spatial equilibrium, affecting the allocation of population and economic activities among countries (Niebuhr and Stiller, 2002).

In the neoclassical approach, the main cause of cross-border mobility of labor is the difference between the level of wages and unemployment, which operates in a balancing way. Post-neoclassical theories analyze migration as a complex and complicated phenomenon, giving emphasis either on social (Sjaastad, 1962; Todaro, 1969; Fisher and Straubhaar, 1996) or on sectoral (Harris and Todaro, 1970) characteristics. Other analyses highlight the cost associated with distance and with the lack of information for the opposite side (Schwartz, 1973; Tassinopoulos, 1999; Janssen, 2000). In traditional theories of location it is concluded that the removal of border barriers in the labor market will have positive impact on both sides of the border. However, the theory of new economic

Table 1: The EU countries under consideration and their adjacent countries

| EU COUNTRY | GEOPOLITICAL POSITION | DEVELOPMENT LEVEL | GEOGRAPHICAL VICINITY (BORDER COUNTRIES) |
|----------------|-----------------------|-------------------|--|
| GREECE | SOUTH | | BULGARIA, TURKEY, ALBANIA, ITALY |
| ITALY | | | FRANCE, AUSTRIA, SLOVENIA, SWITZERLAND, GREECE, CROATIA, BOSNIA, MALTA, ALBANIA |
| SPAIN | | | PORTUGAL, FRANCE |
| PORTUGAL | | | SPAIN |
| BULGARIA | EAST | LOW | GREECE, SERBIA, ROMANIA, TURKEY, FYROM |
| ROMANIA | | | HUNGARY, SERBIA, MOLDAVIA, BELARUS, UKRAINE |
| SLOVENIA | | | AUSTRIA, ITALY, CROATIA, HUNGARY |
| SLOVAKIA | | | POLAND, CZECH REP., AUSTRIA, HUNGARY, UKRAINE |
| CZECH REP. | | | GERMANY, POLAND, SLOVAKIA, AUSTRIA |
| HUNGARY | | | SLOVENIA, SLOVAKIA, AUSTRIA, ROMANIA, CROATIA, SERBIA, UKRAINE |
| POLAND | | | GERMANY, LITHUANIA, BELARUS, UKRAINE, SLOVAKIA, CZECH REP., RUSSIA, SWEDEN |
| LATVIA | | | ESTONIA, LITHUANIA, RUSSIA, BELARUS, SWEDEN |
| LITHUANIA | | | LATVIA, BELARUS, POLAND, RUSSIA, SWEDEN |
| ESTONIA | | | RUSSIA, FINLAND, LATVIA, SWEDEN |
| SWEDEN | NORTH | | FINLAND, NORWAY, DENMARK, GERMANY, POLAND, LITHUANIA, LATVIA, ESTONIA |
| DENMARK | | | GERMANY, SWEDEN, NORWAY |
| FINLAND | | | RUSSIA, SWEDEN, ESTONIA, NORWAY |
| AUSTRIA | WEST | HIGH | GERMANY, CZECH REP., HUNGARY, SLOVENIA, SWITZERLAND, ITALY |
| BELGIUM | | | GERMANY, LUXEMBURG, NETHERLANDS, FRANCE, UNITED KINGDOM |
| GERMANY | | | POLAND, AUSTRIA, CZECH REP., SWITZERLAND, FRANCE, BELGIUM, LUXEMBURG, NETHERLANDS, DENMARK |
| FRANCE | | | GERMANY, LUXEMBURG, BELGIUM, ITALY, SWITZERLAND, SPAIN, UNITED KINGDOM |
| LUXEMBURG | | | GERMANY, FRANCE, BELGIUM |
| NETHERLANDS | | | GERMANY, BELGIUM, UNITED KINGDOM |
| IRELAND | | | UNITED KINGDOM |
| UNITED KINGDOM | | | IRELAND, FRANCE, BELGIUM, NETHERLANDS |

Source: Authors' Elaboration

geography argues that if wages rise in border areas due to better access to areas with high purchasing power (as a result of integration), then there may be not only external but also internal migration flows (Fujita et al., 1999). Especially, if centrifugal forces prevail on centripetal, the result will be a spatial spread of business and labor. Other studies of the new economic geography school, support that integration will further exacerbate the labor market of border areas that had regional character before the removal of border barriers (Niebuhr and Stiller, 2004). In the same direction, Buettnner and Rinke (2004) support, by empirical findings, that the reduction in travel costs due to integration will increase job offer at the border areas of developed countries; as a result, the mean salary will decrease and the unemployment will increase in these areas.

In the realm of the real world, however, the assumption of full interregional and international mobility of labor is not confirmed. In recent models of analysis, the assumption of full mobility of labor is declining and the case of imperfect mobility is supported (Fujita et al. 1999; Puga, 1999).

According to the assumptions of the new economic geography, central border regions acquire geographical advantage in an economic union, attracting both enterprises and consumers. Especially, when enterprises are vertically linked, the incentive of spatial concentration is strong (Niebuhr and Stiller, 2002). From this perspective, border regions situated at the core or near the core of the EU appear to be more favored. Undoubtedly, there are border regions in Europe which had always favorable geographical position in relation to the economic core of Europe, for example the regions at the borders of France-Belgium, Germany-Austria and Germany-the Netherlands.

The models that analyze the spatial impact of integration usually ignore the non-economic barriers, such as the cultural, historical or social differences, at the borders. Experience, however, shows that apart from economic considerations, borders are often associated with different nationalities, languages, cultures and attitudes that influence the shape and intensity of economic interactions (Topaloglou et al., 2005). In other words, even if the barriers disappear completely, the level of cross-border economic interaction will be lower than the respective level of economic interaction within countries, because of the

presence of non-economic barriers (Brenton and Vancauteran, 2001; Afouxenidis and Leontidou, 2004).

EMPIRICAL INVESTIGATION

Methodology

This article attempts to investigate the factors that determine the cross-border economic interaction of the EU countries. In the empirical part below, the economic interaction is analyzed in terms of trade (exports and imports), FDI (outgoing and incoming) and migration (outgoing and incoming), and refers to the national level.

Given that cross-border interaction is associated with proximity, it is interesting to examine whether this factor is sufficient to interpret cross-border mobility. In other words, to what extent the "micro-geography" of spatial proximity is associated with the "macro-geography" of economic integration and the new geopolitical map of Europe.

To address these questions the EU countries have been classified on the basis of two criteria. The first criterion has to do with the macro-geographic and the geopolitical characteristics of the countries. In this context, four groups of countries have been formed. These groups contain the Southern, the Eastern, the Northern, and the Western EU countries. The group of the Southern EU countries includes Greece, Italy, Spain and Portugal, which, despite their traditional "western" orientation, have always exhibited a degree of underdevelopment and political diversification that had, to some extent, geographical features (Petraikos et al., 2004). The group of the Eastern EU countries includes the recently acceded countries, which are (still) undergoing political and economic transition since 1989. The group of the Northern EU countries includes Finland, Sweden and Denmark, which, despite the fact that apparently belong to the "west", they were chosen mainly because of their political, organizational and geographical particularities (the so-called Scandinavian model). The group of the Western EU countries includes the countries that have identified historically and geographically with the "western" political and economic model for Europe. The second criterion has to do with the level of development. In particular, on the basis of the per capita GDP level, the groups of more developed and less developed countries are formed. The group of more developed EU

countries includes the Western and the Northern countries, whereas the group of less developed EU countries includes the Eastern and the Southern countries.

The results concerning the importance of vicinity and integration for each country separately are synthesized for each group of countries in terms of trade, FDI and migration and in relation to the rest of the European countries. The "rest European countries" are grouped into: (a) border and EU members, (b) border and non-EU members, (c) non-border and EU members, and (d) non-border and non-EU members. Without neglecting the fact each country has its own peculiarities with regard to its commercial ties, investment flows and migratory pressures, the aim of the analysis is to identify macro-geographic trends with political and economic characteristics. Table 1 presents the EU countries and their adjacent countries (i.e. the countries that have borders with the EU country under consideration).

Interaction of Southern EU Countries

The first part of the empirical investigation refers to the interaction that takes place in Southern Europe. The results are presented in Table 2 and Figure 1.

Concerning trade transactions, vicinity does not seem to be a critical determinant of cross-border interaction, while total exports are slightly higher than total imports. Taking into consideration that trade activity is mainly of inter-sectoral type, as the southern EU countries are mainly specialized in agricultural and industrial consumer goods, one can explain why the bulk of trade is oriented towards non-border countries that are EU members. This indicates that integration is a critical determinant of cross-border interaction.

Concerning FDI flows, it can be observed the vast majority of investment is directed towards to (or is coming from) non-border countries that are EU members. Noticeable is the fact that vicinity is not a determinant of investment decisions concerning the southern EU countries. The interpretation of this fact should be sought in the characteristics of the productive base and structure of these countries and relatively long distance from the economic center of the EU. Moreover, these countries do represent neither low-cost destinations nor high-technology destinations with research and financial infrastructure. However, one can not that, at least in relative

terms, the area is mainly FDI receiver and not FDI sender.

The shares of migration in relation to border countries that are not EU members are very important on both the outgoing and, mainly, the incoming migration. From the results, it becomes evident that vicinity has a decisive effect on migration. Moreover, these findings illustrate the problem of both legal and illegal immigration, which is evident especially in the southern EU countries. Taking into account the balance between incoming and outgoing migration, one can easily ascertain the EU south is a net receiver of migration. In the recent years, especially, the statistics show that these countries act in practice as the “gate of Europe”.

Interaction of Eastern EU Countries

The second part of the empirical investigation refers to the interaction that takes place in Eastern Europe. The results are presented in Table 3 and Figure 2.

The situation concerning trade activity presents many similarities with the respective that concerns the Southern EU countries, except that trade with non-border countries that are not EU members is slightly higher. Given that these countries are Russia, Ukraine and Moldova, one can identify the role that the “initial conditions”⁴ and cultural proximity (Slavic origin, language, history etc.) continue to play in trade relations.

The outgoing and, especially, the incoming FDI are, essentially, divided between the non-border countries that are EU members, the border countries that are EU members, and the non-border countries that are not EU members. The extremely low percentages concerning the FDI flows to and from the border countries that are not EU members are noteworthy. These findings lead to the conclusion that, initially, economic integration is an important determinant of FDI. Furthermore, proximity with the EU countries provided an opportunity to the Eastern EU countries to broad the EU market area towards the east. The growth of the market obviously favours the emergence of scale economies, through the abolition of border obstacles, as it can be noticed that the incoming FDI are far more than the outgoing

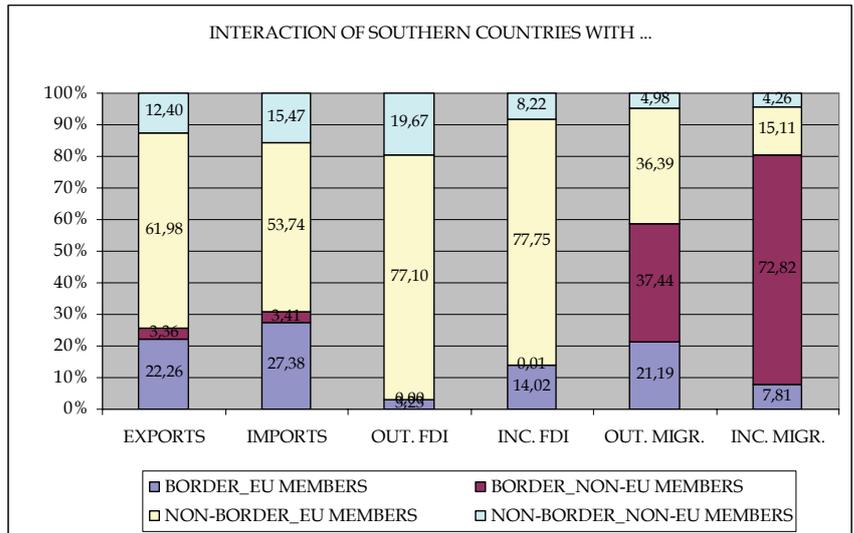
⁴ The notion “initial conditions” refers to the already-shaped historical, social, political and economic conditions at the borders.

Table 2: Trade, Investments and Migration Flows of the Southern EU countries with the rest of the European Countries, Year 2006

| TRADE FLOWS | | FDI FLOWS | | MIGRATION FLOWS | |
|-------------|---------|-------------|---------|-------------------|---------|
| Exports | 56,22% | Outward FDI | 26,14% | Outward Migration | 29,76% |
| Imports | 43,78% | Inward FDI | 73,86% | Inward Migration | 70,24% |
| TOTAL | 100,00% | TOTAL | 100,00% | TOTAL | 100,00% |

Source: Authors' Elaboration – Data derived from the National Statistical Services of Greece, Italy, Spain and Portugal

Figure 1: Interaction of the Southern EU Countries with the Rest of the European Countries, Year 2006



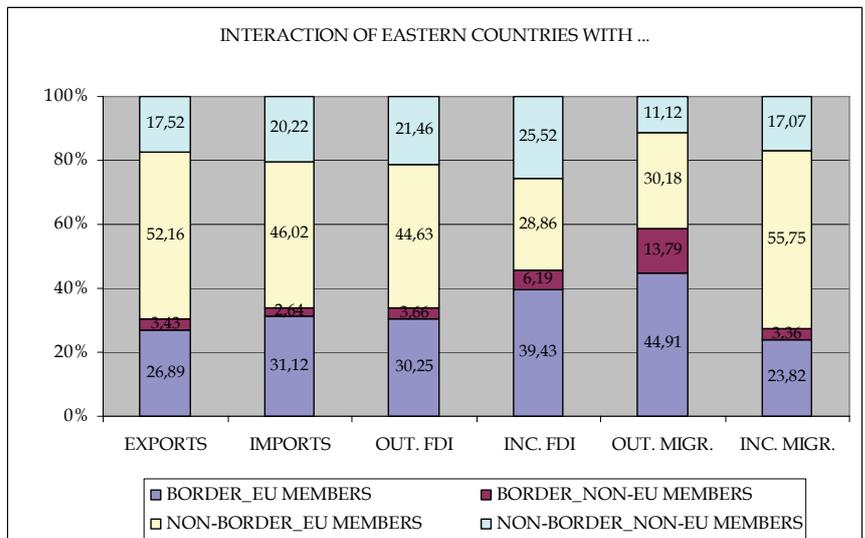
Source: Authors' Elaboration – Data derived from the National Statistical Services of Greece, Italy, Spain and Portugal

Table 3: Trade, Investments and Migration Flows of the Eastern EU countries with the rest of the European Countries, Year 2006

| TRADE FLOWS | | FDI FLOWS | | MIGRATION FLOWS | |
|-------------|---------|-------------|---------|-------------------|---------|
| Exports | 52,16% | Outward FDI | 34,73% | Outward Migration | 56,06% |
| Imports | 47,84% | Inward FDI | 65,27% | Inward Migration | 43,94% |
| TOTAL | 100,00% | TOTAL | 100,00% | TOTAL | 100,00% |

Source: Authors' Elaboration – Data derived from the National Statistical Services of Bulgaria, Romania, Slovenia, Slovakia, Czech Rep., Hungary, Latvia, Lithuania and Estonia

Figure 2: Interaction of the Eastern EU Countries with the Rest of the European Countries, Year 2006



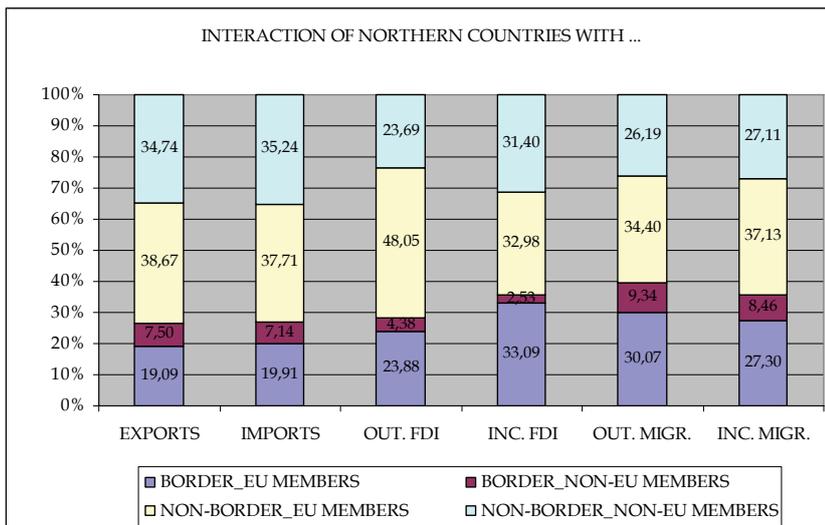
Source: Authors' Elaboration – Data derived from the National Statistical Services of Bulgaria, Romania, Slovenia, Slovakia, Czech Rep., Hungary, Latvia, Lithuania and Estonia

Table 4: Trade, Investments and Migration Flows of the Northern EU countries with the rest of the European Countries, Year 2006

| TRADE FLOWS | | FDI FLOWS | | MIGRATION FLOWS | |
|-------------|---------|-------------|---------|-------------------|---------|
| Exports | 50,18% | Outward FDI | 49,64% | Outward Migration | 53,67% |
| Imports | 49,82% | Inward FDI | 50,36% | Inward Migration | 46,33% |
| TOTAL | 100,00% | TOTAL | 100,00% | TOTAL | 100,00% |

Source: Authors' Elaboration – Data derived from the National Statistical Services of Greece, Italy, Spain and Portugal

Figure 3: Interaction of the Northern EU Countries with the Rest of the European Countries, Year 2006

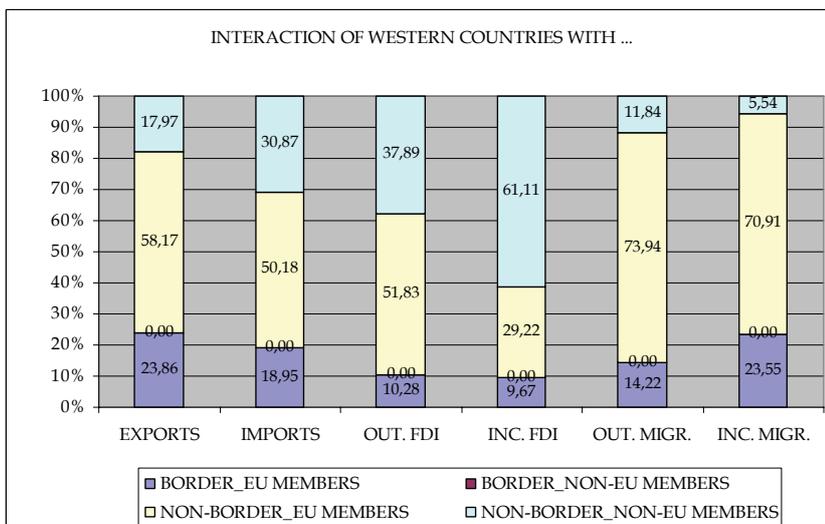


Source: Authors' Elaboration – Data derived from the National Statistical Services of Sweden, Denmark and Finland

Table 5: Trade, Investments and Migration Flows of the Western EU countries with the rest of the European Countries, Year 2006

| TRADE FLOWS | | FDI FLOWS | | MIGRATION FLOWS | |
|-------------|---------|-------------|---------|-------------------|---------|
| Exports | 48,74% | Outward FDI | 63,14% | Outward Migration | 43,73% |
| Imports | 51,26% | Inward FDI | 36,86% | Inward Migration | 56,27% |
| TOTAL | 100,00% | TOTAL | 100,00% | TOTAL | 100,00% |

Figure 4: Interaction of the Northern EU Countries with the Rest of the European Countries, Year 2006



Source: Authors' Elaboration – Data derived from the National Statistical Services of Austria, Belgium, Germany, France, Luxembourg, the Netherlands, Ireland, and the United Kingdom

ones. Furthermore, the strong interaction between the Eastern EU countries and the non-border countries that are not EU members verifies the critical role of "initial conditions" concerning investment decisions. To this direction, empirical findings argue that the strong economic ties between the former Soviet Union countries continue to affect the flow and the direction of investment (Topaloglu, 2008).

Significantly larger proportion of interaction is recorder in relation to the outgoing migration. The largest percentage, in particularly, concerns the border countries that are EU members, suggesting that vicinity is the predominant determinant of interaction. Regarding the incoming migration, in contrast, it can be observed that the higher percentages of interaction concern the non-border countries that are EU members. This finding reveals the crucial role of economic integration regarding cross-border interaction.

Interaction of Northern EU Countries

The third part of the empirical investigation refers to the interaction that takes place in Northern Europe. The results are presented in Table 4 and Figure 3.

The intensity of interaction in terms of exports appears to be almost identical to that of imports. The largest percentage concerns the non-border countries that are EU members, indicating the important role of economic integration in trade relations. It can also be noted that the percentage of trade with the non-border countries that are EU members is almost equal to the percentage of trade with the non-border countries that are not EU members. This finding indicates the intense openness of these countries, in which the factor of vicinity is not shown to be decisive.

The interaction concerning FDI refers almost equally to the incoming and the outgoing FDI. The largest percentage of outgoing FDI concerns the non-border countries that are EU members, underlying the important role of economic integration in cross-border interaction. In contrast, the largest percentage of incoming FDI concerns the border countries that are EU members, underlying the significance of vicinity in cross-border interaction.

The percentage of interaction that refers to outgoing migration is slightly large than the respective percentage for the incoming migration. Moreover, the highest percentages

of both outgoing and incoming migration concern the non-border countries that are EU members, indicating the importance of economic integration in cross-border interaction.

Interaction of Western EU Countries

The fourth part of the empirical investigation refers to the interaction that takes place in Western Europe. The results are presented in Table 5 and Figure 4.

The percentage of interaction that refers to imports is slightly lower than the respective that refers to exports. This result is mainly due to the interaction the border countries that are EU members and reflects the impact of economic integration on cross-border interaction in terms of trade.

The percentage of the outgoing FDI is far greater than that of the incoming. The largest percentage of the outgoing FDI, in particular, concerns the non-border countries that are EU members. This finding reveals the crucial role of economic integration in cross-border activity in terms of outgoing FDI.

The percentage of the incoming migration flows is significantly larger than that of the outgoing, revealing that Western EU countries are net receivers. More specifically, the larger percentage of cross-border interaction in terms of migration concerns the non-border that are EU members and reveals that economic integration is the most crucial determinant of cross-border interaction.

Interaction of More Developed EU Countries

Having analyzed the characteristics of cross-border interaction for each geopolitical group of the EU countries, it could be interest to examine the degree to which cross-border interaction in terms of trade, investment and migration is determined from the level of development. In this framework, Table 6 and Diagram 5 present the results regarding cross-border interaction of the more developed EU countries (i.e. the Northern and the Western EU countries).

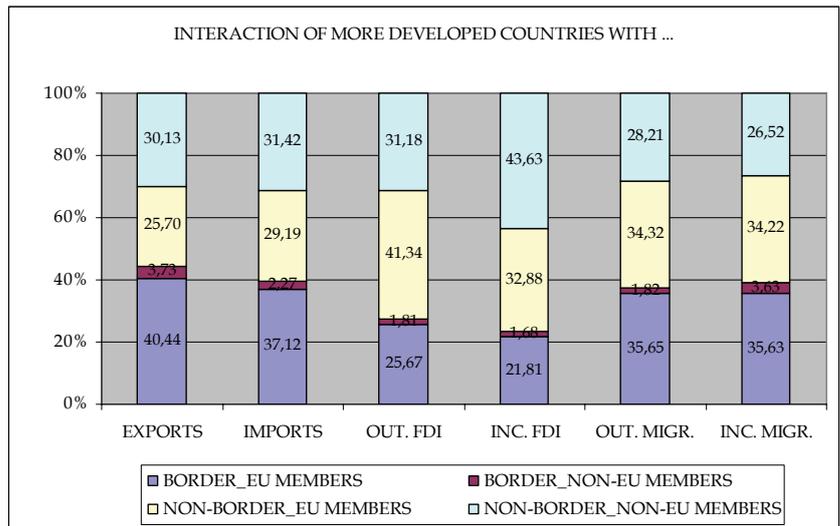
The trade interaction between the more developed EU countries and the rest of the European countries concerns, oddly enough, imports and exports almost equally, despite the fact that the inter-industry character of the trade transactions between the more and the less developed countries leads, in the long-

Table 6: Trade, Investments and Migration Flows of the More Developed EU countries with the rest of the European Countries, Year 2006

| TRADE FLOWS | | FDI FLOWS | | MIGRATION FLOWS | |
|-------------|---------|-------------|---------|-------------------|---------|
| Exports | 48,88% | Outward FDI | 62,03% | Outward Migration | 43,94% |
| Imports | 51,12% | Inward FDI | 37,97% | Inward Migration | 56,06% |
| TOTAL | 100,00% | TOTAL | 100,00% | TOTAL | 100,00% |

Source: Authors' Elaboration – Data derived from the National Statistical Services of Sweden, Denmark, Finland, Austria, Belgium, Germany, France, Luxemburg, the Netherlands, Ireland, and the United Kingdom

Figure 5: Interaction of the More Developed EU Countries with the Rest of the European Countries, Year 2006



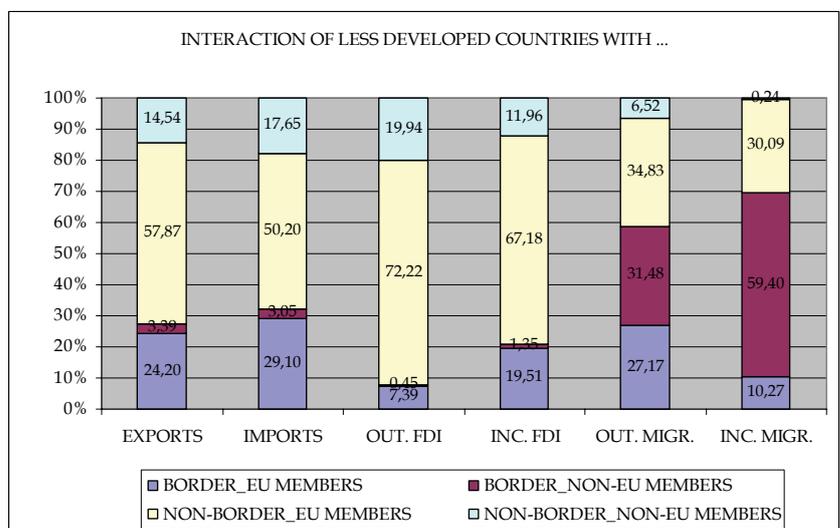
Source: Authors' Elaboration – Data derived from the National Statistical Services of Sweden, Denmark, Finland, Austria, Belgium, Germany, France, Luxemburg, the Netherlands, Ireland, and the United Kingdom

Table 7: Trade, Investments and Migration Flows of the Less Developed EU countries with the rest of the European Countries, Year 2006

| TRADE FLOWS | | FDI FLOWS | | MIGRATION FLOWS | |
|-------------|---------|-------------|---------|-------------------|---------|
| Exports | 54,44% | Outward FDI | 27,62% | Outward Migration | 67,61% |
| Imports | 45,56% | Inward FDI | 72,38% | Inward Migration | 32,39% |
| TOTAL | 100,00% | TOTAL | 100,00% | TOTAL | 100,00% |

Source: Authors' Elaboration – Data derived from the National Statistical Services of Greece, Italy, Spain, Portugal, Bulgaria, Romania, Slovenia, Slovakia, Czech Rep., Hungary, Latvia, Lithuania and Estonia

Figure 6: Interaction of the Less Developed EU Countries with the Rest of the European Countries, Year 2006



Source: Authors' Elaboration – Data derived from the National Statistical Services of Greece, Italy, Spain, Portugal, Bulgaria, Romania, Slovenia, Slovakia, Czech Rep., Hungary, Latvia, Lithuania and Estonia

term, in anisomeric trade relations. Furthermore, it seems that the factor of economic integration has an important impact on cross-border interaction since the bulk of trade relations concern the non-border countries that are EU members.

Concerning FDI, it is obvious that the percentage of the outgoing FDI is significantly larger comparing to the respective of the incoming FDI. This is an expected finding, since the more developed EU countries are, usually, the basic senders of investment flows towards the less developed countries. Concerning the outgoing FDI, in particular, it is evident that the largest percentage of interaction concerns the non-border countries that are EU members. This fact demonstrates the important role of economic integration to the direction of the cross-border investment flows. The largest percentage of the incoming FDI, in contrast, concerns the non-border countries that are not EU members. This finding seems, initially, to be paradox since neither the factor of economic integration nor the factor of vicinity has a significant impact on cross-border interaction. At this point, it should be noted that practically these percentages represent a small volume of incoming investment flows. Moreover, Russia and Norway being third countries which have no borders with the core of the more developed EU countries have developed, during the last years, mainly in the sector of energy, significant investment activity in the European space.

Concerning migration, the incoming migration is significantly higher than the outgoing migration. This finding is in harmony with the findings of many surveys that detect a positive relation between the level of development and the volume of the incoming migration. The largest percentage of cross-border interaction, in terms of both the incoming and the outgoing migration, concerns the non-border countries that are EU members. This finding reveals that economic integration favors the migration flows towards the more developed EU countries.

Interaction of Less Developed EU Countries

Continuing the analysis of the characteristics of cross-border interaction on the basis of the level of development, Table 7 and Diagram 6 present the results regarding cross-border interaction of the less developed EU countries

(i.e. the Southern and the Eastern EU countries).

The percentage of trade interaction that refers to exports is significantly higher comparing to the respective interaction that refers to imports. This finding is important, since it provides serious evidence that the inter-industry type of trade between the more developed and the less developed countries does not operate against the balance of trade of the less developed countries. In other words, the specialization of the less developed countries mainly in the agricultural sector or in industrial consumer sectors does not have a negative impact on the exports towards the more developed countries. Noticing, that the bulk of trade transactions concerns the non-border countries that are EU members it can be ascertained that the impact of economic integration on cross-border interaction is important.

The largest percentage of the incoming FDI comparing to the outgoing FDI reveals that the less developed EU countries are net recipients of cross-border investment flows. The largest percentage of interaction concerns the non-border countries that are EU members, revealing the important role of economic integration. This finding, together with the fact that the geographic factor is associated with the level of development, reveals the mix of parameters that have an important impact on the direction of investment flows. In other words, the less developed EU countries represent both geographically and economically the periphery of the EU.

The less developed EU countries represent the basic senders concerning cross-border migration. The largest percentage of outgoing migration concerns the non-border countries that are EU members. However, besides the impact of integration, equally important is the impact of vicinity on the cross-border migration flows. It is noteworthy that the largest percentage of the incoming migration concerns the border countries that are not EU members. In this case, one could insist that the perspective for the access to the enlarged EU labor market, together with the factor of vicinity, made the less developed EU countries more attractive to the neighboring third countries of the EU.

CONCLUSIONS

The analysis has attempted a theoretical and empirical investigation of the basic determinants of cross-border interaction

among the European countries. More specifically, based on data that concern the year 2006, the dynamics of cross-border interaction, in terms of trade, FDI and migration, have been examined. The basic question under examination concerns the investigation of the degree that the economic integration, the vicinity and the geographic – geopolitical factor determine trade, investment and migration flows at the border areas. According to the analysis, the following findings can be extracted:

Concerning cross-border interaction in terms of trade and FDI, evident is the fact that economic integration seems to be the most crucial determinant comparing to the factor of vicinity. For each of the groups examined, on the basis of geographic and development criteria, the percentages of interaction concern mainly the non-border countries that are EU members. In other words, the spatial impact of the abolition of trade and investment barriers at the borders, in the framework of the creation of an enlarged economic market, is extremely significant.

In contrast, the cross-border migration flows reveal different patterns of interaction concerning each group of countries. More specifically, concerning the northern, the western and the more developed EU countries, vicinity seems to be the most important factor of interaction. In contrast, concerning the southern, the eastern and the less developed EU countries, economic integration seems to be the most important factor of interaction. Given that migration flows towards the southern and, mainly, the eastern EU countries are not usually having characteristics of high specialization, it is logical for the outgoing migration to be oriented towards the corresponding sectors of neighboring EU countries. Of course, for the extraction of safer conclusions a further analysis, regarding the structure, the duration, the objectives and the spatial characteristics of migration, is considered to be necessary.

Certainly, the holistic examination of the economic cross-border interaction in Europe requires the investigation of more determinants, besides economic integration and vicinity. It is obvious that in the framework of this investigation factors such as European and national policies, transportation and telecommunications networks, cultural proximity and other geopolitical parameters can not be ignored.

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