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The Geography of Trade Relations between the EU and the ENP Countries: Emerging Patterns and Policy Recommendations

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Abstract

The European Neighborhood Policy (ENP), launched in 2004, is a unified European Union (EU) policy framework towards the EU neighboring (ENP) countries. The objective of the ENP is to strengthen the prosperity, stability and security of the EU and the ENP countries. Even though the ENP is distinct from the process of EU enlargement, the ENP countries operate under conditions of "neighborhood Europeanization". The objective of the paper is to evaluate the strengths and the weaknesses of the ENP against the backdrop of its trade component. It does so by providing a deep and comprehensive empirical analysis of the geography of trade relations (i.e. the size, the composition and the direction of exports and imports flows) between the EU and the ENP countries. The findings of the paper illustrate the emerging patterns of trade relations among the EU and the ENP countries, allowing for the provision of specific policy recommendations regarding the ENP and, in particular, its trade policy component.

Key words: *geography, trade, EU countries, ENP countries*

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1. Introduction

The European Neighborhood Policy (ENP), launched in 2004, is a unified European Union (EU) policy framework towards the EU neighboring countries (see Wesselink and Boschma, 2012a for an overview). The objective of the ENP is to strengthen the prosperity, stability and security of the EU, creating a "ring of friends". As the Commissioner for Enlargement and ENP, Štefan Füle, stated, "our Neighborhood Policy provides us with a coherent approach that ensures that the whole of the EU is committed to deeper relations with all our neighbors […]" (Füle, 2012).

The ENP framework is proposed - in alphabetical order - to Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, Moldova, Morocco, Occupied Palestinian Territory (hereinafter: Palestine), Syria, Tunisia and Ukraine (hereinafter: the ENP countries; see Map 1). It is further enriched with the Eastern Partnership (launched in Prague, in May 2009), the – formerly known as the Barcelona Process (launched in Barcelona, in November 1995) – Euro-Mediterranean Partnership or Union for the Mediterranean (re-launched in Paris, in July 2008), and the Black Sea Synergy (launched in Kiev, in February 2008). Currently, the ENP consists of two sub-groups; the ENP East (Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine) and the ENP South (Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria and Tunisia).

The ENP is a bilateral policy, between the EU and each ENP country. In particular, following the suspension of the Doha Development Round of the World Trade Organization (WTO) (see Ferguson, 2008), the European Commission started to pursue Free Trade Agreements (FTAs) (i.e. reduction of tariffs on trade and reduction of restrictions on investment), with targeted economies, in order to protect its markets and to enhance its competitiveness (see Acar and Tekçe, 2008 and Liargovas, 2011 for a critical discussion). For the EU, FTAs represent a subway to implement Deep and Comprehensive Free Trade Agreements (DCFTAs) with its neighboring countries (Liargovas, 2013). DCFTAs go beyond tariff reductions to cover, more extensively, regulatory issues such as investment protection, public procurement and competition policy (Mohamadieh, 2012). As the EU Trade Commissioner, Karel de Gucht described, "the DCFTAs represent the EU's support for the process of democratic and economic reform" (de Gucht, 2011).

Therefore, even though the ENP is distinct from the process of EU enlargement (Emerson, 2004; Browning and Joenniemi, 2008), the ENP countries operate under conditions of "neighborhood Europeanization" (see Axt et al., 2007 and Schimmelfennig, 2012 for a discussion about the "Europeanization" debate). This indicates a misfit (i.e. the so-called "capabilities-expectations" gap; see Monastiriotis and Borrell, 2012) between ENP demands (i.e. demands that do not differ much from those of "accession

Europeanization"; see Hughes et al., 2004 and Schimmelfennig and Sedelmeier, 2005 for a discussion about the "Europeanization" of the new EU member-states), on the one hand, and ENP rewards (i.e. the possibility of EU membership has been ruled out for the majority of ENP countries), on the other (Lavenex, 2004; Lang, 2007; Mahncke and Gstöhl, 2008). As the (then) Commission President, Romano Prodi, declared, "we have to be prepared to offer [to the ENP countries] more than partnership and less than membership, without precluding the latter" (Prodi, 2002). At this point, it has to be elucidated that the ENP countries have no general obligation to accept the *acquis communautaire* (i.e. the corpus of EU laws and policies). However, and despite the fact that the proper "membership anchor" is missing (Havlik et al., 2012a and 2012b), the acceptance of the *acquis communautaire* is rather necessary in order for the ENP countries to participate in EU programmes and to gain a stake in the EU market.

Given this misfit – and the general skepticism about the ENP capacity to transfer EU values and rules to the neighboring countries – deep(er) economic (in particular, trade) integration between the EU and the ENP countries is considered to be a catalyst for the success of the ENP undertaking (see Dreyer, 2012). Such a certitude – an "endowment" that comes from the era of Jean Monnet (see Monnet, 1976) – keeps step with the well-known dictum of Montesquieu that "the natural effect of trade is to bring about peace" since "two nations who traffic with each other become reciprocally dependent; for if one has an interest in buying, the other has an interest in selling; and thus their union is founded on mutual necessities" (see, Montesquieu, 1748/1750: 326).

The objective of the paper is to evaluate the strengths and the weaknesses of the ENP against the backdrop of its trade component. It does so by providing an in-depth analysis of the geography of trade relations[1] (i.e. the size, the composition and the direction of exports and imports flows) between the EU and the ENP countries. In particular, the paper provides empirically-based, clear-cut, responses, within the framework of the ENP, to a series of empirical questions: Which is the impact of the gradual dismantling of economic borders between the EU and the ENP countries on the level of EU-ENP trade activity? Which is the relative importance of the EU-ENP trade for the EU and the ENP countries? Which is the spatial allocation of the EU-ENP trade flows? Which is the sectoral allocation of the EU-ENP trade flows? Which is the pattern of economic (trade) integration between the EU and the ENP countries that tends to be configured? Is it a balanced or an unbalanced pattern? Is it a symmetric or an asymmetric pattern? The answers to the aforementioned questions are going to offer valuable insight, leading to specific policy recommendations, on the ultimate question (issue): Do the EU-ENP trade relations provide a solid stimulus in the process of "neighborhood Europeanization"? To put it differently, do the DCFTAs, the main trade policy thrust of the ENP, meet their targets or need to be revised?

[1] Geography is an integral component of trade theory (Grant, 1994; Andersen, 2010). The paper adopts the notion (understanding) of geography of trade provided by Grotewold (1961:309).

The present paper is the first comprehensive paper evaluating (the trade component of) the ENP on the basis of the EU-ENP geography of trade relations. The analysis utilizes trade data derived from the United Nations (UN) COMTRADE database (see http://comtrade.un.org/db/, for details), and refer to the national-sectoral (2-digit SITC classification) level. The sectors included in the analysis (see Table 1) grossly belong to the primary and the secondary sector of production and may form groups of activities (see Table 2) according to the intensity of the production factors used (see UNCTAD, 1996). The analysis covers the period 2000-2010 so as to gauge the latest shifts operated in trade structures as a result of the recent economic and political reforms (evolutions) implemented (took place) in the EU economy (i.e. the euro currency, the eastwards enlargement, and the on-going financial and economic crisis) and the ENP countries (i.e. the "color" revolutions, and the Arab "spring"), besides the ENP in itself.

The remainder of the paper proceeds as follows. Section 2 surveys the literature on economic integration and growth. Section 3 arrays some stylized facts for the EU and the ENP countries. Section 4 outlines the DCFTAs EU trade strategy towards the ENP countries, paying special attention the level of the average applied tariffs to trade. Section 5 provides the methodological framework for the empirical analysis. Section 6 conducts the empirical analysis and reports the main findings. Section 7 offers the conclusions of the paper and provides some policy recommendations.

2. Economic integration and growth: A review of the theoretical literature

It is widely accepted that the European perspective acts as a very strong stimulus for, and facilitator of, economic, political and institutional development by providing the incentives and resources to promote economic restructuring and institutional capacity-building. It is, thus, no surprise that especially for countries that are in dire need for economic restructuring, sociopolitical transformation and development, the process of European integration, in all of its facets (i.e. economic integration, political approximation and policy harmonization), has largely gone unquestioned (Monastiriotis et al., 2010). Indeed, deeper association with the EU brings a large battery of significant political and economic benefits at the domestic national level, strengthening domestic policies and, thus, facilitating political reforms that consolidate the process of political transition, democratization and, in some cases, conflict resolution and normalization of external relations (Monastiriotis et al., 2010).

However, together with the aforementioned benefits, which are, indeed, too strong to be overlooked, the process of European (economic) integration brings, also, effects which

are of a less unequivocal character.[2] Economic integration emaciates border obstacles for factor movements and further intensifies itself (self-sustained process) via the reduction of trade costs. Closed borders distort market size (Niebuhr and Stiller, 2002), whereas the abolition of economic barriers generates (releases) all kinds of spatial dynamics that relate to better access to foreign markets and to import competition (Brülhart et al., 2004). Therefore, even though economists accept, almost unanimously, that (the market-based process of) economic integration is a positive-sum game, an on-going debate is currently taking place concerning the distribution of the overall welfare gains (Petrakos et al., 2011).

Such a debate finds fertile ground since the size, the composition and the direction of trade and factor flows determine, to a large extent, the prospects and the limitations for development. To put it differently, in the (emerging) EU economic space, the space of flows (i.e. integration) affects, to a great extent, the space of places (i.e. development) (Petrakos, 2012). On the one hand, there is the view that economic integration is a long-term process that eventually leads to a reduction in inequalities through the expansion of trade relations, greater mobility of production factors and the diffusion of technology. This view is based on neoclassical-type assumptions about the operation of the economy and claims that the market forces released in the process of economic integration are, overall, beneficial for the least developed economies, leading, thus, to greater cohesion. On the other hand, there is the claim that the costs and the benefits of economic integration are unlikely to be uniformly spread in space. In contrast, more advanced economies are expected to benefit more, while lagging (and, possibly, less favored) economies are more likely to benefit less, or, even, fall further behind. The resulting increase in inequalities is primarily based on internal and external economies of scale, technological progress and structural change.

Moreover, and besides the previously described debate, economic integration involves, according to the critics of the traditional trade theory, significant welfare losses for the less developed economies due to unequal exchange mechanisms. As integration improves market access and raises incomes, the patterns of consumption and production change and imports increase disproportionately to exports. This has the tendency to produce structural trade deficits, which threaten the stability of the local currencies and contribute to fiscal imbalances[3] (Monastiriotis et al., 2010).

Thus, there is (still) widespread scepticism in the less-advanced and peripheral economies regarding their ability to adjust to the requirements of an integrated

[2] See, for example, the cases of the new EU member-states (see Kallioras and Petrakos, 2010), which provide a quasi-laboratory environment (or, to put it differently, natural experiment-like conditions) for the assessment of the impact of economic integration on regional inequalities.

[3] The recent experience of many peripheral (Southern) EU economies confirms the truth of the aforementioned criticism (see Gligorov et al., 2012 for details). Indeed, the current turbulence and instability triggered by the public debt of the weaker EU economies has transformed a financial crisis to an economic one, affecting the productive bases and the income levels of the EU economic space in a very unequal way (Petrakos, 2012).

economic space. Imperfect competition is deemed to result in an uneven distribution of the benefits of economic integration (Martin and Ottaviano, 2001; Ciccone, 2002) due to the inability of markets (and policy responses) to create conditions of optimum economic space. Such scepticism questions the neoclassical understanding for the operation of the spatial economy (Petrakos, 2008). Yet, in the realm of the real world, the EU experience does not seem to (fully) support the neoclassical claim (Petrakos, 2008 and 2012). In fact, core EU economies are, mostly, the ones generate advantages leading to differential growth performance, through the entrenchment of internal and external economies of scale, and operate as hubs for economic activities associated with increasing returns to scale (IRS).

3. The EU and the ENP countries: Stylized facts

Even a rough examination of the basic, economic and demographic, stylized facts (see Table 3), highlights the differences that exist between the EU and the ENP countries. By and large, the wider EU area (i.e. the EU and its neighborhood) exhibits a high degree of heterogeneity. Indeed, there is a clear gap in terms of economic performance as the level of the per capita Gross Domestic Product (GDP) indicator evinces. The per capita GDP level in the EU amounts (year 2010) to $32,364 per inhabitant, whereas the corresponding level in the ENP countries amounts to (only) $4,263 per inhabitant. The GDP per capita level in the ENP countries is significantly lower even comparing to the figure ($11,891 per inhabitant) that corresponds to the new EU member-states (coming from the former Eastern bloc). Among the ENP countries, Israel is considered to be a significant outlier as it enjoys a level of economic performance ($28,506 per inhabitant) significantly higher than the corresponding level of many EU countries.

The aforementioned gap in terms of economic performance becomes of paramount importance taking into consideration the fact that while (year 2010) the population of the ENP countries is equivalent to 55.7% of the EU population (279.749 and 501.826 million inhabitants, respectively), the GDP level of the ENP countries is equivalent to (only) 7.3% of the EU GDP ($1,192,653 and $16,241,135 million, respectively). Moreover, the population in the ENP countries has been increasing (period 2000-2010) at a rate of 11.3%, while the corresponding growth rate in the EU countries is 3.8%. In contrast, the level of per capita GDP in the ENP countries has been recording (period 2000-2010) a real growth rate of 24.9%, while the corresponding real growth rate in the EU countries is 48.7%. So, the EU attempts to create “neighborhood Europeanization” conditions with countries that, on aggregate, have (relatively) high population figures and enjoy low levels of economic performance.

The aforementioned mismatch generates concern when the discussion takes a (macro-) regional perspective. There are a couple of reasons that “legitimize” such concern. The

first one has to do with the (not very encouraging) experience of the EU spatial pattern of economic performance. Indeed, despite the serious and well-funded interventions at the structural and the regional level, the "core-periphery" spatial pattern of economic performance remains rather inalterable (coupled, in fact, by a "west-east" pattern) (Barrios and Strobl, 2005; Petrakos, 2008 and 2012). Hence, the unbalanced spatial pattern of economic performance in the wider EU area is expected to become (even) more pronounced. The second one has to do with the noteworthy high presence of rural population in the ENP countries. Indeed, rural population in the ENP area represents the 39.6% of the total population (share that corresponds approximately to 110.8 million inhabitants). This share, which is analogous to the respective of the new EU member-states (37.9%), stresses out the impact, on the EU-ENP trade relations, of the possible restrictions that may arise from the Common Agricultural Policy (CAP) (Dreyer, 2012; Liargovas, 2013), the most significant sectoral EU policy in terms of funds available.

4. The DCFTAs EU trade strategy towards the ENP countries: The level of tariff barriers to trade

The policies related to the internal market are the reference for the common trade policy of the EU member-states towards third countries (Koopmann and Wilhelm, 2010). Thus, the common external trade EU policy has a strong impact on the EU's external economic links since its reach not only covers cross-border trade flows but also includes regulatory issues such as investment protection, public procurement and competition policy. In particular, the Treaty of Lisbon, forced in December 2009, makes, *inter alia*, EU trade policy an integral part of the EU's "unified external action" (for details see Woolcock, 2010). Accordingly, all EU policies with a bearing on relations to third countries (except for the Common Foreign and Security Policy) should be guided by a common set of principles and objectives such as the consolidation and support of democracy and the preservation of peace (for details see Koopmans and Wilhelm, 2010).

As regards the ENP, in particular, the main reason for the EU to follow the road of bilateralism is its objective to deepen the substance of trade agreements, enhancing more comprehensive trade relations with its neighbors, and, thus, bringing its neighbors gradually closer to the Single Market. Thus, the DCFTAs between the EU and the ENP countries involve tailor-made agreements and conditions, in contrast to the rigid Copenhagen criteria that characterized the EU (eastwards) enlargement policy. In other words, DCFTAs are a "carrot and stick" tactic that considers mandatory *acquis communautaire* compliance related to political requirements as a precondition for trade negotiations (and agreements). Of course, the (recent) emphasis on behalf of the EU

towards bilateral agreements, rather than multilateral ones[4], brings both positive and negative elements. In particular (Liargovas, 2013), bilateral agreements seem easier to conclude, can cover more areas, take note of any (geo)political considerations and offer a strong leverage for domestic reform. In contrast, bilateral agreements create discrimination, are not able to solve systemic issues and may complicate the trade environment.

Even though the DCFTAs go beyond just removing tariffs, the elimination of tariffs is the most important success condition (see Dreyer, 2012 for a discussion about the success conditions of the DCFTAs). Tariffs indicate the level of protection, distorting the (free) market within an economy. Yet (year 2010), the EU imposes relatively high (simple) average tariffs to trade with the ENP countries, especially on agricultural goods (see Table 4, and http://stat.wto.org/TariffProfile/WSDBTariffPFReporter.aspx?Language=E, for details). Without getting into a discussion about the non-tariff barriers (such as the rules of origin) that exist between the EU and the ENP countries, it is evident that the goal of DCFTAs, still, has a long way ahead. Given the high shares of agricultural population in the ENP countries as well as the political upheaval in the ENP South and the slow reforms in the ENP East (Blockmans and van Vooren, 2013), it is doubtful whether the resistance on behalf of the EU to remove its (agricultural) tariff (and, also, non-tariff) trade barriers is able to guarantee the success of the DCFTAs, and, consequently, of the ENP undertaking.

5. The geography of trade relations between the EU and the ENP countries: Delimitation of the methodological framework

The estimation of a series of trade indicators, and the consequent descriptive statistical analysis of the findings derived[5], provides the basis for the empirical study of the geography of the EU-ENP trade relations. Since there is almost no empirical trade literature focusing on the ENP[6], the paper aspires to fill in (part of) the gap in the

[4] One of the most debated issues in international trade literature is whether bilateralism or multilateralism is the most effective strategy for achieving global free trade (see Aghion et al., 2007 for an overview).

[5] Due to lack of space, the actual results of the analysis are not provided in the paper (instead, there is a graphical depiction). However, they are available upon request.

[6] The literature looking at the ENP focuses, mainly, on political (i.e. diplomacy and security) issues; moreover, the literature that focuses on the economic aspects of the ENP seems to adopt a rather narrow focus / perspective without getting into specific empirical analyses (Vincentz, 2007; Monastiriotis and Borrell, 2012) regarding the geography of trade flows. In particular, the empirical papers dealing with the economic aspects (trade aspects, in particular) of the ENP either adopt a narrative approach or attempt to provide *ex ante* assessments concerning the effects of trade liberalization on the ENP countries. Exceptions to this general rule are the studies of Sekarev (2011), Havlik et al. (2012a and 2012b) and Moga and Fotea (2012) as well as some research projects dealing with ENP issues (see Wesselink and Boschma, 2012b, for an overview).

corresponding literature. Among the plethora of trade indicators (see the exceptional handbook of commonly used trade indicators offered by Mikic and Gilbert, 2009), the empirical analysis in the present paper is based on: (a) the Index of Trade Intensity, (b) the Index of Trade Openness, (c) the Index of Trade Balance, (d) the Index of Revealed Comparative Advantage, (e) the Index of Intra Industry Trade, and (f) the Index of Trade Composition Change. Each indicator is utilized to shed light on a specific dimension of the EU-ENP trade activity.

In particular, the Index of Trade Intensity (see Box 1) is utilized to assess the importance of EU (ENP) trade counterparts in terms of the overall trade activity of each ENP (EU) country under consideration. The index is expressed as the percentage share of the bilateral trade (exports and/or imports) between two countries in relation to the total (world) trade (exports and/or imports) of the country under consideration. When no trade activity is conducted between a country under consideration and a (partner) country, the index takes its minimum value (i.e. 0). When a country under consideration has trade transactions only with a partner county, the index takes its maximum value (i.e. 100).

The Index of Trade Openness (see Box 2), often called Index of Trade Dependence, is utilized to measure the importance of trade with the EU (ENP) counterparts for each ENP (EU) country under consideration, in terms of GDP. The index is expressed as the value of trade (i.e. exports and/or imports), with a specific partner country, or the world in general, in relation to the value of gross domestic product (GDP). The index takes its minimum value (i.e. 0) when the economy of the country under consideration is totally closed. The index takes higher values as the economy of the country under consideration becomes more open.

The Index of Trade Balance (see Box 3), also called Index of Net Exports, is utilized to assess the difference, in value terms, between the exports and the imports of each ENP (EU) country under consideration with the EU (ENP) counterparts. A positive balance (i.e. exports higher than imports) is known as trade surplus, whereas a negative balance (i.e. imports greater than exports) is known as trade deficit.

The Index of Revealed Comparative Advantage (see Box 4) is utilized to calculate the relative advantage of each ENP (EU) country under consideration against the EU (ENP) counterparts, in a specific sector. The index is expressed as the proportion of the country under consideration exports' in a specific sector divided by the proportion of a partner country (or world) exports' in the same specific sector. When the index takes values greater than 1, a comparative advantage is "revealed". Otherwise, the country under consideration has a comparative disadvantage.

The Index of Intra-Industry Trade (see Box 5) is utilized to match the value of the exports of a specific sector to the value of the imports of the same specific sector for each ENP (EU) country under consideration concerning its trade activity with the EU (ENP) counterparts. The index takes values in the interval [0, 1]. Values close to 0 indicate that trade activity between a country under consideration and a partner country

is an inter-industry one (i.e. concerns products that grossly belong to different sectors). Values close to 1 indicate that trade activity between a country under consideration and a partner country is an intra-industry one (i.e. concerns products that grossly belong to the same sectors).

Finally, the Index of Trade Composition Change (see Box 6), is utilized to estimate the reaction of each ENP (EU) country under consideration to the (changing/emerging) conditions of the (international) economic environment, in terms of the sectoral shares of its trade activity with the EU (ENP) counterparts. The index correlates the trade (exports and/or imports) shares of a country under consideration, in an initial (base) and a final year. The index takes values in the interval [-1, 1]. Values close to 1 indicate an almost perfect positive correlation (i.e. no change recorded as regards the trade shares of the country under consideration), values close to -1 indicate an almost perfect negative correlation (i.e. the trade shares of the country under consideration are completely the opposite), and values close to 0 indicate no correlation between the trade shares of a country under consideration, between a base and a final year.

Altogether, the findings derived from the utilization of the aforementioned indicators provide valuable insight regarding the emerging patterns of the EU-ENP trade activity.

6. The geography of trade relations between the EU and the ENP countries: The emerging patterns

The EU-ENP trade relations expanded significantly during the period 2000-2010 (see Table 5). During this period, the value of the EU-ENP trade flows has increased, almost, three-fold.

In fact, as the figures of the Index of Trade Intensity reveal, the EU is the most important trade partner for the majority of the ENP countries. However, it loses its shares over time. The juxtaposition of the spatial allocation of the ENP exports and imports shares for the years 2000 and 2010 (see Figures 1 and 2) reveals that the EU shares are getting decreased in 8 and 9 ENP countries (out of 12 for which data are available), respectively. In contrast, the shares of the RoW (i.e. rest of the world) countries are getting increased, mainly due to the dynamism that the BRIC countries (i.e. Brazil, Russia, India and China) exhibit (see Pinna, 2013). Noteworthy is, also, the fact that the intra-ENP shares are rather small. This indicates that the ENP economic space is still fragmented, with weak demand-supply chain links. In contrast, the spatial allocation of the EU exports and imports flows verifies that the ENP countries are not important trade partners for the vast majority of the EU countries (see Figures 3 and 4). EU trade activity is mostly intra-EU, generating concerns regarding the progress of the ENP undertaking

(i.e. the low success of DCFTAs) as well as the incompatibilities with (restrictions arising from) the EU sectoral policies (the CAP, in particular). This means that the magnitude trade effect from the implementation of the ENP remains rather low, in regard to the ENP countries.

The fact that the ENP countries are not important trade partners for the vast majority of the EU countries can, also, be indicated from the figures of the Index of Trade Openness. Indeed, the EU countries exhibit extremely low exports and imports shares (to and from the ENP countries, respectively) in relation to their GDPs (see Figures 4 and 5). Possible exceptions to this general rule are Lithuania, in terms of exports, and Cyprus, in terms of imports. In contrast, the corresponding shares for the ENP countries (i.e. exports and imports to and from the EU countries, respectively) are quite high (see Figures 5 and 6). However, in terms of exports, only 4 ENP countries (i.e. Azerbaijan, Egypt, Libya and Tunisia) exhibit increase between the years 2000 and 2010. The picture is diametrically opposite with respect to imports as 10 ENP countries (Armenia, Jordan, Israel, Moldova and Syria are the exceptions) exhibit increase in the above period. Moreover, one significant fact that should be mentioned is that, by and large, for the ENP countries, imports accounts for higher GDP shares comparing to exports.

Indeed, the figures of the Index of Trade Balance verify that the vast majority of the ENP countries have a negative trade balance with the EU (see Figure 9). Moreover, the juxtaposition of the figures for the years 2000 and 2010 evinces that the situation deteriorates. However, it is noteworthy the fact that the ENP countries that trade, mainly, products other than fuel primary commodities have all negative trade balance with the EU. In contrast, some of the ENP countries (i.e. Libya, Azerbaijan, and Algeria) that trade, mainly, fuel primary commodities have positive trade balance with the EU. Concerning the corresponding trade balance of the EU countries, the picture is rather different (see Figure 10). In particular, during the years 2000 and 2010, 13 and 18 EU countries have positive trade balance with the ENP countries. Either positive or negative, the trade balance figures for the EU countries are significantly smaller (as a share of GDP) comparing to the corresponding figures for the ENP countries.

The sector of fuel primary commodities is, indeed, as the figures of the Index of Revealed Comparative Advantage accentuate, a key-sector for the study of the EU-ENP trade relations (see Figures 11 and 12). This is so, as in the year 2010 in particular, Algeria, Azerbaijan, Belarus, Egypt, Georgia, Libya and Syria exhibit their highest revealed comparative advantage against the EU in this particular sector. Moreover, during the same year, Israel, Tunisia and Ukraine exhibit revealed comparative advantage against the EU in the sector of fuel primary commodities. These countries, however, exhibit their highest revealed comparative advantage against the EU in sectors other than the one of fuel primary commodities (mostly in the sector of non-fuel primary commodities). Looking at the EU countries, it is impressive that in the year 2010, in particular, there is no EU country exhibiting a revealed comparative advantage,

against the ENP, in the sector of fuel primary commodities. In contrast, all EU countries exhibit a revealed comparative advantage in medium-skill capital-intensive commodities and / or in high-skill capital-intensive commodities. This finding indicates the asymmetric nature of the EU-ENP relations, reminding of the corresponding trade relations that, mostly, occur between the core and the peripheral EU countries (see Kallioras and Petrakos, 2010 and Petrakos et al., 2012).

Asymmetry in trade relations means that trade relations are, mostly, of inter-industry type (i.e. more trade occurs between sectors rather than within sectors). Indeed, even though a significant number among the ENP countries tend, over time, to exhibit a trade relation, with the EU, which is more similar to the intra-industry pattern, the EU-ENP trade relation remains, by and large, an inter-industry one (see Figures 13 and 14). As the figures of the Index of Intra-Industry Trade indicate, only Israel, the most advanced ENP country, exhibits intra-industry trade relations with the EU.

The persistency of the inter-industry type of trade relations between the EU and the ENP countries has its explanation on the diachronic evolution of the sectoral shares of the corresponding trade activity (see Figure 15). In particular, the figures of the Index of Trade Composition Change reveal that, over time, the sectoral composition of exports flows from the ENP to the EU countries remains, more or less, unchanged. Only the figures for Armenia, Jordan and Lebanon may consider being rather small (indicating rather significant changes). In contrast, Algeria, Azerbaijan and Libya experienced absolute no change. For the majority of the ENP countries changes are experienced mainly during the period 2000-2005 (i.e. mostly prior to implementation of the ENP). However, there are some ENP countries (i.e. Egypt, Israel, Jordan, Moldova and Tunisia) experiencing greater changes during the period 2005-2010. The rather low changes in the sectoral composition of the ENP exports to the EU countries provide strong indication that the ENP countries, in their great majority, have not (successfully) implemented export-led strategies towards the diversification (expansion) of their exports bases (see also Havlik et al., 2012a and 2012b and Boschma and Capone, 2013). The situation is rather different concerning the EU countries. There are the new EU member-states that, over time, experience significant changes, many of them during the period 2005-2010 (i.e. after their accession to the EU). These changes can be considered a precursor to possible changes with respect to the ENP countries.

Closing the discussion about the EU-ENP trade, it is necessary to have a look on the spatial direction of trade flows in order to detect possible spatial links; otherwise, the picture would not be complete.

Indeed, the examination of the spatial allocation of the ENP trade flows, to and from the EU countries, reveals some interesting findings (see Figures 16 and 17). In particular, it can be observed that, over time, the ENP exports are directed mainly to the EU15 countries. This is an extremely important finding, taking, especially, into consideration that for many ENP countries the share of the main exports partner is extremely high (i.e.

higher than the one third of the total trade activity). Moreover, it can be observed that the shares of the new EU member-states (located in Eastern Europe) are extremely low. However, the sum of the aforementioned shares is quite high (i.e. higher than the one fifth of the total trade activity) in many ENP East countries. This finding accentuates the positive impact of historical ties (i.e. former members of the USSR) on the conduct of trade activity. The positive impact of historical ties (i.e. colonial relations in the past) stands, also, for other cases such as the exports flows from Libya to Italy and from Morocco and Tunisia to France. Concerning the ENP imports, there is an analogous situation since the latter come mainly from the EU15 countries. However, there is an exception that concerns Romania, which is the main imports partner for Moldova. Despite the presence of the exception above, the shares of the new EU member-states are, again, extremely low.

Extremely interesting are, also, the findings derived from the spatial allocation of the EU trade flows to and from the ENP countries (see Figures 18 and 19). Concerning the EU exports, in particular, it can be observed that for the vast majority of the EU countries, the shares of the main ENP exports partner are quite high. Noteworthy is the fact the main ENP exports partner for the vast majority of the new EU member-states belongs to the ENP East. The picture for the EU imports flows from the ENP countries is quite similar. Again, historical ties are present.

Summing up, the findings derived from the empirical study of the geography of the EU-ENP trade flows generate concerns about the success of the ENP undertaking, even though the EU-ENP expanded significantly during the period 2000-2010. The first concern stems from the fact that the EU-ENP trade relation is declining, in relative terms (mainly in favor of the BRIC countries). The second concern stems from the fact that the EU-ENP trade relation is uneven (i.e. the EU is a very important partner for the ENP countries, but the ENP (especially the countries that do not have a comparative advantage in fuel primary commodities) is not so important partner for the EU countries). The third concern stems from the EU-ENP trade relation is an unbalanced one (i.e. the vast majority of the ENP countries (mainly the countries that do not have a comparative advantage in fuel primary commodities) has a negative trade balance with the EU). The fourth concern stems from the fact the EU-ENP trade relation is an asymmetric one (i.e. the EU and the ENP countries exhibit, mostly, an inter-industry trade relation). Lastly, the fifth concern stems from the fact that the EU-ENP trade flows are not spatially dispersed (in contrast, the present strong trends of spatial concentration mainly due to impact of historical ties). Overall, the EU-ENP trade relations do not seem to provide a solid stimulus in the process of “neighborhood Europeanization”, triggering, thus, debate about the invigoration of the ENP undertaking.

7. Conclusions and some policy recommendations

The analysis of the geography of the EU-ENP trade relations allows for the evaluation of the strengths and the weaknesses of the ENP undertaking. Overall, it seems that the gradual dismantling of the economic borders between the EU and the ENP countries allows for the expansion of the EU-ENP trade activities (i.e. trade flows have almost tripled between the years 2000 and 2010). Indeed, the EU is the most important trade partner for the majority of the ENP countries. However, it loses its shares over time. This indicates the slow progress of the DCFTAs (mainly because the "capabilities-expectations" gap remains, and assuming, of course, that DCFTAs affect trade patterns) as well as the restrictions arising from the EU sectoral policies (and the CAP, in particular). At the same time, the BRIC countries exhibit a noteworthy dynamism, becoming important ENP trade partners, and this may increase their political influence in the ENP area.

Definitely, there is room for the expansion of the EU-ENP trade relations. This is so taking into account not only that tariff (and non-tariff) barriers are still high (especially in agriculture) but also that trade flows are not spatially dispersed (in fact, the impact of historical ties seems to retain the pre-ENP spatial pattern of trade flows). This is the reason that triggers debate about the invigoration of the ENP. The political instability in the ENP South and the slow reforms in the ENP East indicate that the "carrot and stick" tactic has not (at least, not so far) "produced" the anticipated results. Thus, the EU should examine the possibility that mandatory *acquis communautaire* compliance related to political requirements should not be a precondition for trade negotiations (and agreements) (see also, Emerson, 2011), but for further financial and technical support. This means that a possible ENP review should consider a further (even unilateral) liberalization of trade and a stronger financial support mechanism[7] as a reward for reforms. Considering that the ENP area is sensitive in economic (i.e. low welfare level) and in demographic (i.e. high presence of rural population) terms, the current perspective of the ENP runs the danger for the ENP countries to "export" people (see the discussion provided by Casas-Cortes et al., 2012) instead of products to the EU market.

Of course, the (further) expansion of the EU-ENP trade is not the only issue. The nature of the EU-ENP trade is another, equally important, issue. This is because the nature of the EU-ENP trade relations may not be leading to a sustainable type of integration, and, thus, to a reduction of the existing development gap. The clear-cut empirical findings of the paper indicate that the EU-ENP trade relation is uneven, unbalanced and asymmetric. This is so as the ENP countries, which are not so important trade partners

[7] Probably, similar to PHARE (Poland and Hungary: Assistance for Restructuring their Economies) or CARDS (Community Assistance for Reconstruction, Development and Stabilization).

for the majority of the EU countries, are locked-in an inter-industry type of trade integration with their more advanced EU counterparts. This type of trade relations is, mostly, the outcome of the inability of the ENP countries to diversify and expand their export bases, implementing export-led growth strategies. Especially for the ENP countries that do not exhibit comparative advantage in the sector of fuel primary commodities, this type of trade relations provides strong implications (given the recent experience of the Southern EU member-states) that trade deficits may be, quickly, "converted" into fiscal deficits. It seems that the position of the neoclassical school of thought is difficult to verify (given, of course, that its assumptions are not fully satisfied). On the contrary, the well-established "core-periphery" EU spatial pattern of development seems to be "reproduced" in the wider EU area.

The EU-ENP trading area, clearly, reminds of a "hub-and-spoke" system. The aforementioned ascertainment is a reminder of the fact that the ENP area is still fragmented, with weak demand-supply chain links. Accordingly, this fact strongly suggests that it is important for development efforts to assume active and coordinated plans not only at the national but also at the (macro-)regional level. Probably, the DCFTAs should adopt a new perspective, taking into consideration the specificities of the ENP area, their initial constraints and the ensuing competitive pressures that EU association brings. This is a salient issue as, despite their current fragmentation, (many of) the ENP countries have many historical, political and cultural communalities, and, most importantly, common future trajectories.

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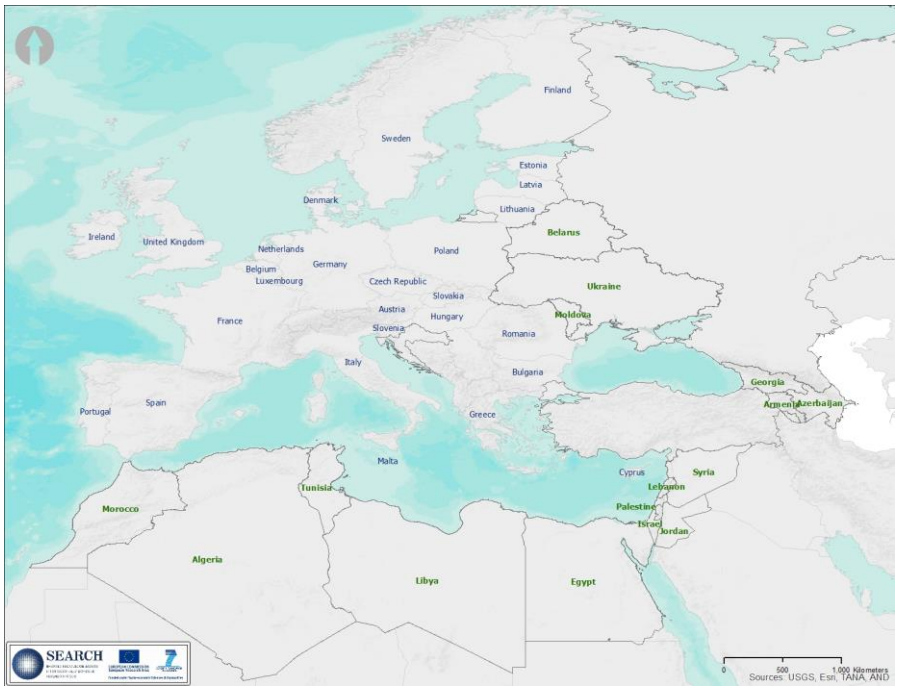
Appendix

Map 1: The EU-ENP area



Source: Authors' elaboration

Table 1: Sectors under consideration (according to Harmonized System (HS) sector activity)

HS	NAME	HS	NAME	HS	NAME
1	Live animals	34	Soaps, lubricants, waxes, candles, modelling pastes	67	Bird skin, feathers, artificial flowers, human hair
2	Meat and edible meat offal	35	Albuminoids, modified starches, glues, enzymes	68	Stone, plaster, cement, asbestos, mica, etc articles
3	Fish, crustaceans, molluscs, aquatic invertebrates nes	36	Explosives, pyrotechnics, matches, pyrophorics, etc	69	Ceramic products
4	Dairy products, eggs, honey, edible animal product nes	37	Photographic or cinematographic goods	70	Glass and glassware
5	Products of animal origin, nes	38	Miscellaneous chemical products	71	Pearls, precious stones, metals, coins, etc
6	Live trees, plants, bulbs, roots, cut flowers etc	39	Plastics and articles thereof	72	Iron and steel
7	Edible vegetables and certain roots and tubers	40	Rubber and articles thereof	73	Articles of iron or steel
8	Edible fruit, nuts, peel of citrus fruit, melons	41	Raw hides and skins (other than furskins) and leather	74	Copper and articles thereof
9	Coffee, tea, mate and spices	42	Articles of leather, animal gut, harness, travel goods	75	Nickel and articles thereof
10	Cereals	43	Furskins and artificial fur, manufactures thereof	76	Aluminium and articles thereof
11	Milling products, malt, starches, inulin, wheat gluten	44	Wood and articles of wood, wood charcoal	77	
12	Oil seed, oleagic fruits, grain, seed, fruit, etc, nes	45	Cork and articles of cork	78	Lead and articles thereof
13	Lac, gums, resins, vegetable saps and extracts nes	46	Manufactures of plaiting material, basketwork, etc.	79	Zinc and articles thereof
14	Vegetable plaiting materials, vegetable products nes	47	Pulp of wood, fibrous cellulosic material, waste etc	80	Tin and articles thereof
15	Animal, vegetable fats and oils, cleavage products, etc	48	Paper & paperboard, articles of pulp, paper and board	81	Other base metals, cermets, articles thereof
16	Meat, fish and seafood food preparations nes	49	Printed books, newspapers, pictures etc	82	Tools, implements, cutlery, etc of base metal
17	Sugars and sugar confectionery	50	Silk	83	Miscellaneous articles of base metal
18	Cocoa and cocoa preparations	51	Wool, animal hair, horsehair yarn and fabric thereof	84	Nuclear reactors, boilers, machinery, etc
19	Cereal, flour, starch, milk preparations and products	52	Cotton	85	Electrical, electronic equipment
20	Vegetable, fruit, nut, etc food preparations	53	Vegetable textile fibres nes, paper yarn, woven fabric	86	Railway, tramway locomotives, rolling stock, equipment
21	Miscellaneous edible preparations	54	Manmade filaments	87	Vehicles other than railway, tramway
22	Beverages, spirits and vinegar	55	Manmade staple fibres	88	Aircraft, spacecraft, and parts thereof
23	Residues, wastes of food industry, animal fodder	56	Wadding, felt, nonwovens, yarns, twine, cordage, etc	89	Ships, boats and other floating structures
24	Tobacco and manufactured tobacco substitutes	57	Carpets and other textile floor coverings	90	Optical, photo, technical, medical, etc apparatus
25	Salt, sulphur, earth, stone, plaster, lime and cement	58	Special woven or tufted fabric, lace, tapestry etc	91	Clocks and watches and parts thereof
26	Ores, slag and ash	59	Impregnated, coated or laminated textile fabric	92	Musical instruments, parts and accessories
27	Mineral fuels, oils, distillation products, etc	60	Knitted or crocheted fabric	93	Arms and ammunition, parts and accessories thereof
28	Inorganic chemicals, precious metal compound, isotopes	61	Articles of apparel, accessories, knit or crochet	94	Furniture, lighting, signs, prefabricated buildings
29	Organic chemicals	62	Articles of apparel, accessories, not knit or crochet	95	Toys, games, sports requisites
30	Pharmaceutical products	63	Other made textile articles, sets, worn clothing etc	96	Miscellaneous manufactured articles
31	Fertilizers	64	Footwear, gaiters and the like, parts thereof	97	Works of art, collectors pieces and antiques
32	Tanning, dyeing extracts, tannins, derivs, pigments etc	65	Headgear and parts thereof	98	
33	Essential oils, perfumes, cosmetics, toileteries	66	Umbrellas, walking-sticks, seat-sticks, whips, etc	99	Commodities not elsewhere specified

Source: UN COMTRADE Database

Table 2: Groups of sectors under consideration (according to Harmonized System (HS) sector activity)

HS GROUP	NAME	HS
1	Non-fuel primary commodities	1-26, 50-52, 74-76, 78-81
2	Fuel primary commodities	27
3	Labor-intensive and resource-based commodities	41-49, 53-65, 68-71, 95
4	Low skill-, technology-, capital- and scale-intensive commodities	72-73, 82-83, 86,89, 92, 94, 96-97, 99
5	Medium skill-, technology-, capital- and scale-intensive commodities	39-40, 66-67, 84-85, 87, 93
6	High skill-, technology-, capital- and scale-intensive commodities	28-38, 88, 90-91

Source: UNCTAD (1996)

Table 3: Some economic and demographic stylized facts for the EU and the ENP countries, years 2000 and 2010

	GDP (m. $; 2010)	GDP pc ($/inh.; 2010)	GDP pc real growth (%; 2000-2010)	population (m. inh.; 2010)	population growth (%; 2000-2010)	rural population (% population.; 2010)
Austria	379,069	45,181	60.1	8.390	4.7	32.5
Belgium	469,374	43,078	55.2	10.896	6.3	2.5
Bulgaria	47,714	6,333	132.1	7.534	-7.8	27.5
Cyprus	23,132	28,779	60.3	0.804	15.8	40.8
Czech Rep.	192,032	18,254	170.2	10.520	2.4	26.5
Denmark	311,989	56,245	48.5	5.547	3.9	13.2
Estonia	19,217	14,341	116.5	1.340	-2.2	30.5
Finland	238,041	44,378	66.4	5.364	3.6	16.4
France	2,560,002	39,448	50.7	64.895	6.8	14.8
Germany	3,280,530	40,116	58.6	81.777	-0.5	26.2
Greece	301,083	26,607	71.3	11.316	3.7	38.8
Hungary	128,632	12,863	68.3	10.000	-2.1	31.0
Ireland	206,612	46,170	52.7	4.475	17.6	38.1
Italy	2,060,965	34,075	38.6	60.483	6.2	31.8
Latvia	24,010	10,723	73.6	2.239	-5.6	32.3
Lithuania	36,306	11,045	150.5	3.287	-6.1	33.0
Luxembourg	53,334	105,195	61.8	0.507	16.2	14.8
Malta	8,256	19,845	46.5	0.416	9.1	5.3
Netherlands	779,356	46,904	57.9	16.616	4.3	17.3
Poland	469,440	12,294	112.8	38.184	-0.7	39.1
Portugal	228,571	21,486	47.1	10.638	4.0	39.5
Romania	161,624	7,539	9.0	21.438	-4.5	47.2
Slovakia	87,268	16,071	127.8	5.430	0.8	45.2
Slovenia	46,908	22,893	56.0	2.049	3.0	50.0
Spain	1,407,405	30,549	54.1	46.071	14.4	22.7
Sweden	458,552	48,897	47.2	9.378	5.7	14.9
United Kingdom	2,261,713	36,343	11.8	62.232	5.7	20.5
EU	16,241,135	32,364	48.7	501.826	3.8	26.3
EU-15[a]	14,996,596	37,625	44.5	398.585	5.4	23.3
EU-10[b]	1,213,151	11,891	94.5	102.021	-2.1	37.9
Algeria	161,979	4,567	27.1	35.468	16.2	28.0
Armenia	9,371	3,031	208.3	3.092	0.5	35.9
Azerbaijan	51,774	5,718	298.9	9.054	12.5	46.6
Belarus	54,713	5,765	-48.2	9.490	-5.1	25.4
Egypt	218,894	2,698	-17.3	81.121	19.9	56.6
Georgia	11,667	2,621	101.8	4.452	0.8	47.3
Israel	217,333	28,506	22.5	7.624	21.2	8.2
Jordan	27,574	4,560	43.8	6.047	26.0	17.5
Lebanon	39,006	9,228	46.3	4.227	13.0	12.9
Libya[d]	62,360	9,957	-50.3	6.263	19.7	n/a
Moldova	5,809	1,631	69.2	3.562	-2.1	53.1
Morocco	90,805	2,796	83.1	32.482	11.6	42.6
Palestine	n/a	n/a	n/a	n/a	n/a	n/a
Syria	59,147	2,893	29.1	20.447	27.9	44.3
Tunisia	44,291	4,199	35.0	10.549	10.3	33.9
Ukraine	137,929	3,007	11.8	45.871	-6.7	31.3
ENP	1,192,653	4,263	24.9	279.749	11.3	39.6
ENP East	271,264	3,592	36.7	75.521	-3.6	34.6
ENP South[c]	704,056	3,581	14.2	196.604	18.0	42.7

n/a: not available

a. The "old" EU member-states
b. The "new" EU member-states excl. Cyprus and Malta
c. Excl. Israel
d. Data for Libya concern years 2000 and 2009

Sources: World Bank / Authors' elaboration

Table 4: Simple average tariffs imposed, by the EU, on agricultural and non-agricultural goods, year 2010

	Simple average tariffs imposed on agricultural goods (%; 2010)	Simple average tariffs imposed on non-agricultural goods (%; 2010)
Algeria	12.9	3.0
Armenia	13.8	4.7
Azerbaijan	11.7	2.9
Belarus	10.2	3.9
Egypt	12.8	4.5
Georgia	10.8	3.5
Israel	13.6	4.2
Jordan	13.1	3.9
Lebanon	12.7	4.2
Libya	n/a	n/a
Moldova	11.9	4.7
Morocco	12.1	5.2
Palestine	n/a	n/a
Syria	n/a	n/a
Tunisia	11.5	5.0
Ukraine	11.1	3.9

n/a: not available

Sources: WTO / Authors' elaboration

Table 5: The value of the EU-ENP trade flows, Years 2000 and 2010

EU exports to ENP (bn. $; 2000)	EU exports to ENP (bn. $; 2010)		EU imports from ENP (bn. $; 2000)	EU imports from ENP (bn. $; 2010)
58,055	153,729		57,003	148,313

Sources: UN COMTRADE Database / Authors' elaboration

Box 1: Index of Trade Intensity

$$ITI_{c\_p,t} = \frac{XV_{c\_p,t} + MV_{c\_p,t}}{XV_{c\_w,t} + MV_{c\_w,t}} * 100 \text{ or } ITI_{c\_p,t} = \frac{XV_{c\_p,t}}{XV_{c\_w,t}} * 100 \text{ or } ITI_{c\_p,t} = \frac{MV_{c\_p,t}}{MV_{c\_w,t}} * 100$$

XV denotes exports values
MV denotes imports values
c denotes country under consideration
p denotes partner economy
w denotes world economy
t denotes year under consideration

ITI takes values in the interval [0, 100], from no trade with a (partner) country to trade only with the partner country

Source: Adjustment from Brown (1949), Kojima (1964) and Drysdale and Garnaut (1982)

Box 2: Index of Trade Openness

$$ITO_{c\_p,t} = \frac{XV_{c\_p,t} + MV_{c\_p,t}}{GDP_{c,t}} \quad \text{or} \quad ITO_{c\_p,t} = \frac{XV_{c\_p,t}}{GDP_{c,t}} \quad \text{or} \quad ITO_{c\_p,t} = \frac{MV_{c\_p,t}}{GDP_{c,t}}$$

XV denotes exports values
MV denotes imports values
GDP denotes Gross Domestic Product
c denotes country under consideration
p denotes partner economy
t denotes year under consideration

ITO takes values greater than (or equal to) 0, from no openness with a (partner) country to perfect openness with a partner country

Source: Adjustment from Frankel and Romer (1999)

Box 3: Index of Trade Balance

$$ITB_{c\_p,t} = XV_{c\_p,t} - MV_{c\_p.t}$$

XV denotes exports values
MV denotes imports values
c denotes country under consideration
p denotes partner country
t denotes year under consideration

ITB takes values from $-\infty$ to $+\infty$; values greater than 0 indicate positive trade balance (i.e. exports higher than imports)

Source: Adjustment from Sullivan and Sheffrin (2003)

Box 4: Index of Revealed Comparative Advantage

$$RCA_{c\_p,i,t} = \frac{\frac{XV_{c\_p,i,t}}{XV_{c\_p,t}}}{\frac{XV_{p,i,t}}{XV_{p,t}}}$$

XV denotes exports values
c denotes country under consideration
p denotes partner economy
t denotes year under consideration
i denotes sector under consideration

RCA takes values greater than (or equal to) 0; values greater than 1 indicate relatively better exporting performance and a possible comparative advantage

Source: Adjustment from Balassa (1965)

Box 5: Index of Intra-Industry Trade

$$IIT_{c\_p,t} = (1 - \frac{\sum_{i=1}^{n} \left| XV_{c\_p,i,t} - MV_{c\_p,i,t} \right|}{\sum_{i=1}^{n} \left| XV_{c\_p,i,t} + MV_{c\_p,i,t} \right|})$$

XV denotes exports values
MV denotes imports values
c denotes country under consideration
$i(= 1,\ldots, n)$ denotes sectors under consideration
t denotes year under consideration
p denotes partner country
Σ is a symbol for sum

IIT takes values in the interval [0,1], from no intra-industry trade (perfect inter-industry trade) to perfect intra-industry trade (no inter-industry trade)

Source: Adjustment from Grubel and Lloyd (1971 and 1975)

Box 6: Index of Trade Composition Change

$$TCC_{c\_p,tb\_tf} = COR_{i=1}^{n}(\frac{XV_{c\_p,i,tb} + MV_{c\_p,i,tb}}{XV_{c\_p,tb} + MV_{c\_p,tb}}, \frac{XV_{c\_p,i,tf} + MV_{c\_p,i,tf}}{XV_{c\_p,tf} + MV_{c\_p,tf}})$$ or

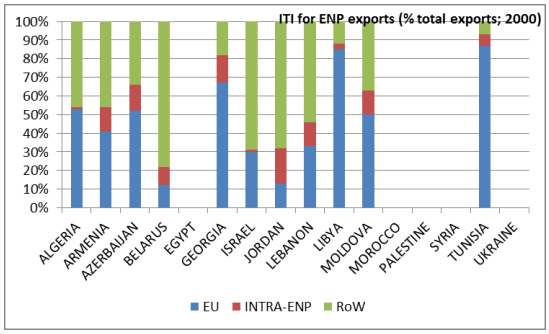
$$TCC_{c\_p,tb\_tf} = COR_{i=1}^{n}(\frac{XV_{c\_p,i,tb}}{XV_{c\_p,tb}}, \frac{XV_{c\_p,i,tf}}{XV_{c\_p,tf}})$$ or $$TCC_{c\_p,tb\_tf} = COR_{i=1}^{n}(\frac{MV_{c\_p,i,tb}}{MV_{c\_p,tb}}, \frac{MV_{c\_p,i,tf}}{MV_{c\_p,tf}})$$

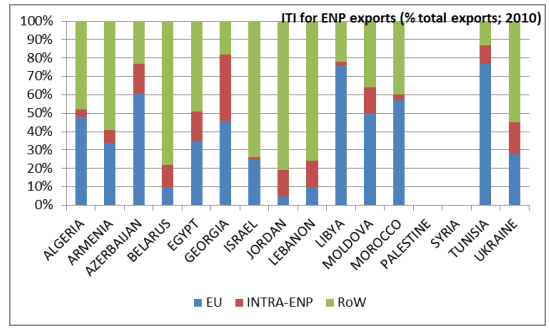
XV denotes exports values
MV denotes imports values
c denotes country under consideration
$i(= 1,\ldots, n)$ denotes sectors under consideration
tb denotes the base year under consideration
tf denotes the final year under consideration
p denotes partner country
COR is a symbol for correlation

TCC takes values in the interval [-1, 1], from perfect negative correlation to perfect positive correlation; values close to 0 indicate no correlation

Source: Adjustment from Finger and Kreinin (1979), Havlik (1995) and Jackson and Petrakos (2001)

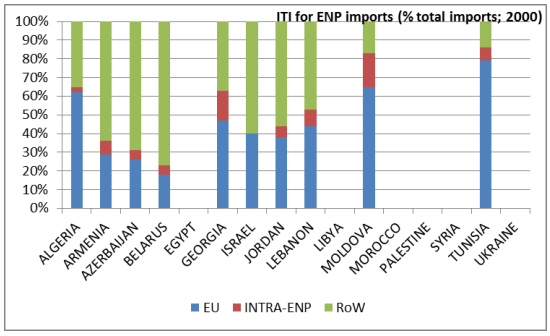
Figure 1: Index of Trade Intensity for ENP exports, years 2000 and 2010

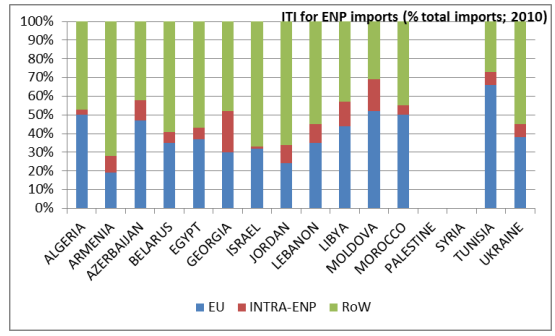




Sources: UN COMTRADE Database / Authors' elaboration

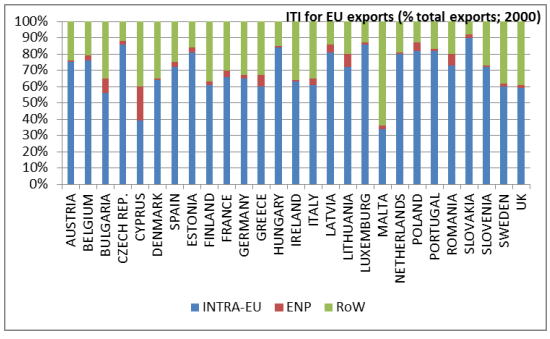
Figure 2: Index of Trade Intensity for ENP imports, years 2000 and 2010

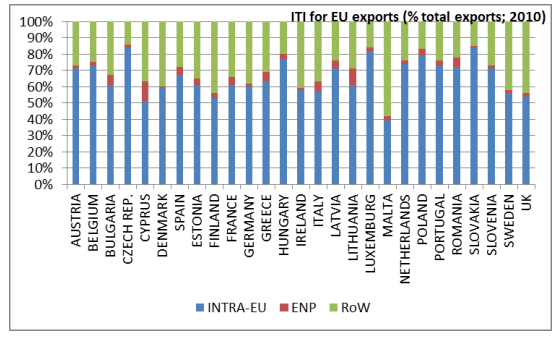




Sources: UN COMTRADE Database / Authors' elaboration

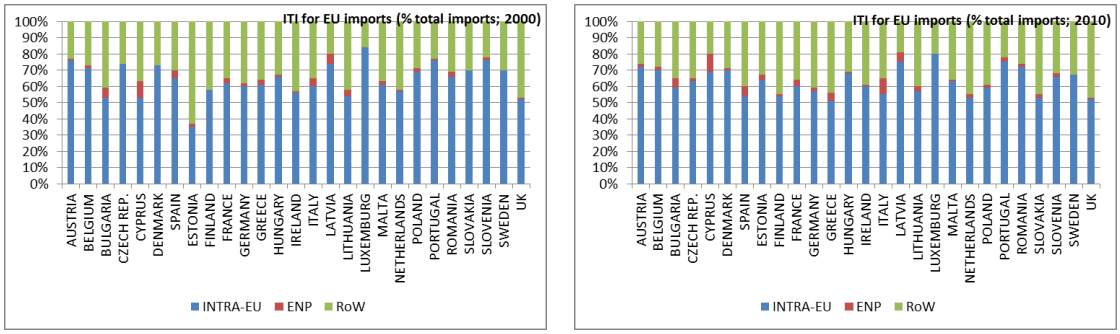
Figure 3: Index of Trade Intensity for EU exports, years 2000 and 2010





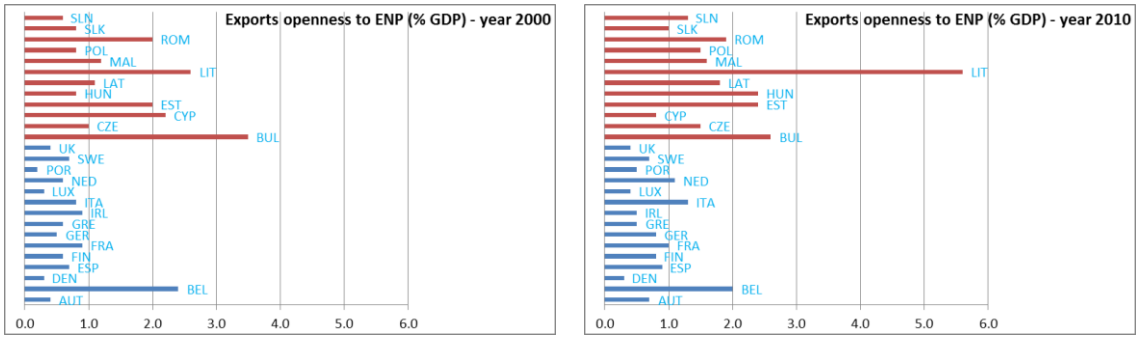
Sources: UN COMTRADE Database / Authors' elaboration

Figure 4: Index of Trade Intensity for EU imports, years 2000 and 2010



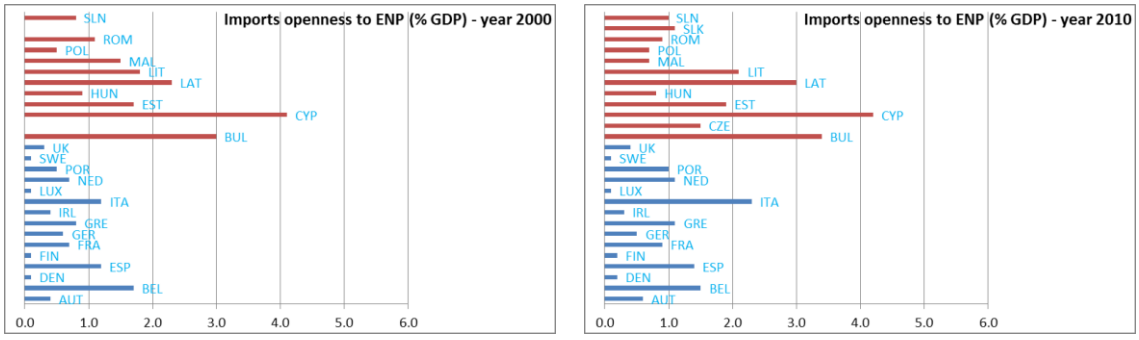
Sources: UN COMTRADE Database / Authors' elaboration

Figure 5: Index of Trade Openness for EU exports, years 2000 and 2010



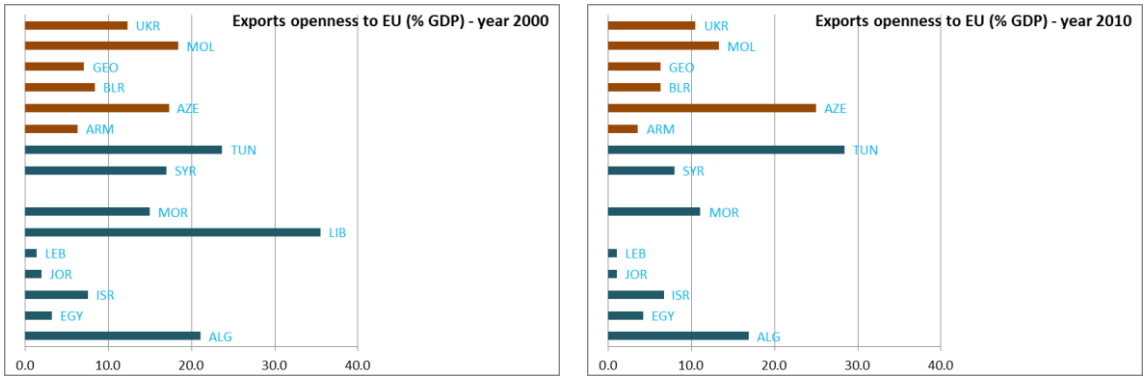
Sources: UN COMTRADE Database / World Bank / Authors' elaboration

Figure 6: Index of Trade Openness for EU imports, years 2000 and 2010



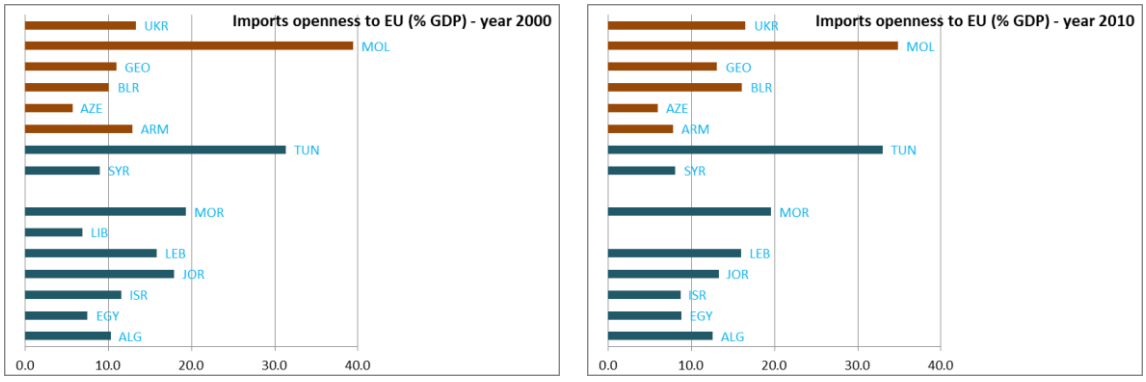
Sources: UN COMTRADE Database / World Bank / Authors' elaboration

Figure 7: Index of Trade Openness for ENP exports, years 2000 and 2010



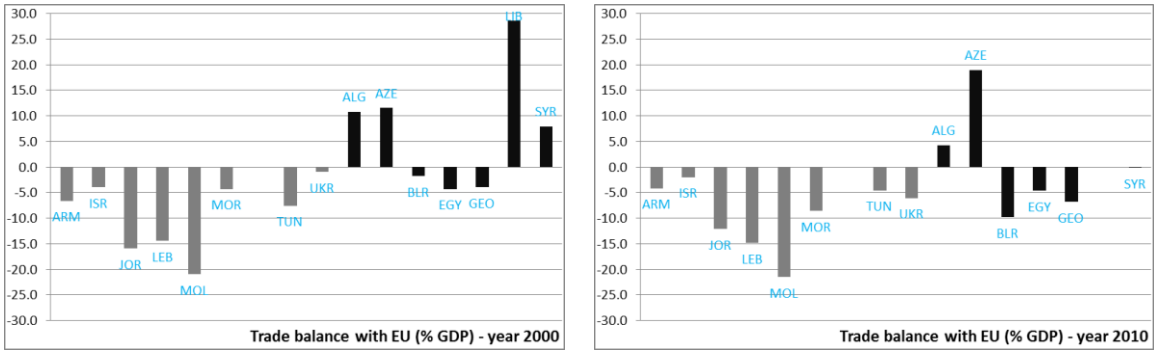
Sources: UN COMTRADE Database / World Bank / Authors' elaboration

Figure 8: Index of Trade Openness for ENP imports, years 2000 and 2010



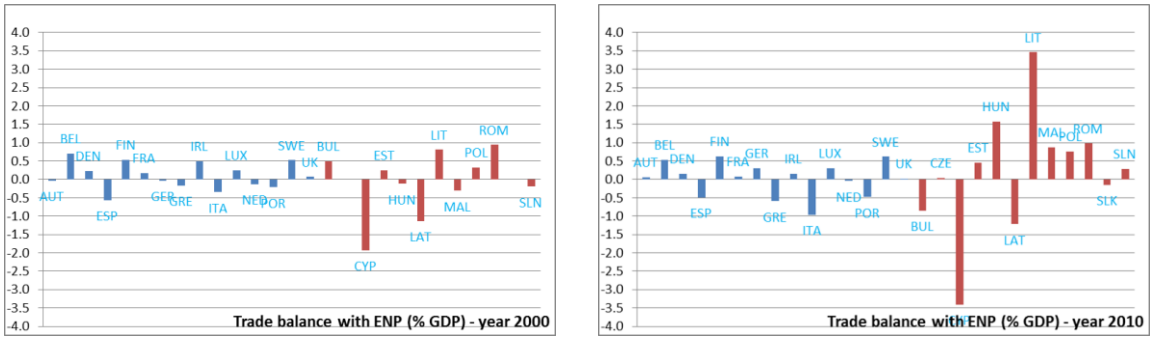
Sources: UN COMTRADE Database / World Bank / Authors' elaboration

Figure 9: Index of Trade Balance (% of GDP) for the ENP countries, Years 2000 and 2010



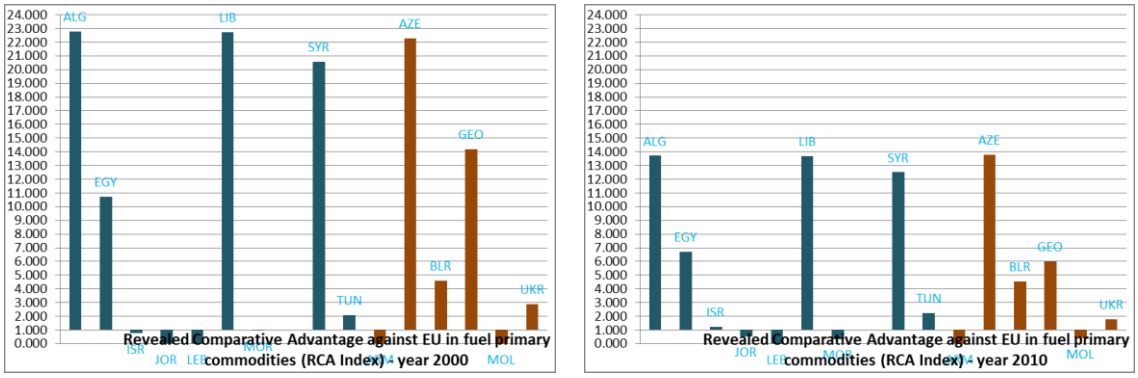
Sources: UN COMTRADE Database / World Bank / Authors' elaboration

Figure 10: Index of Trade Balance (% of GDP) for the EU countries, Years 2000 and 2010



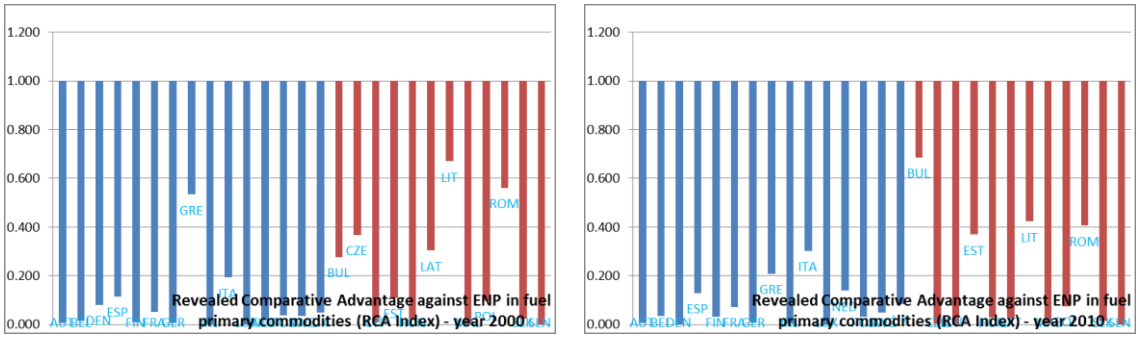
Sources: UN COMTRADE Database / World Bank / Authors' elaboration

Figure 11: Index of Revealed Comparative Advantage, against the EU countries, for the ENP countries in the sector of fuel primary commodities, Years 2000 and 2010



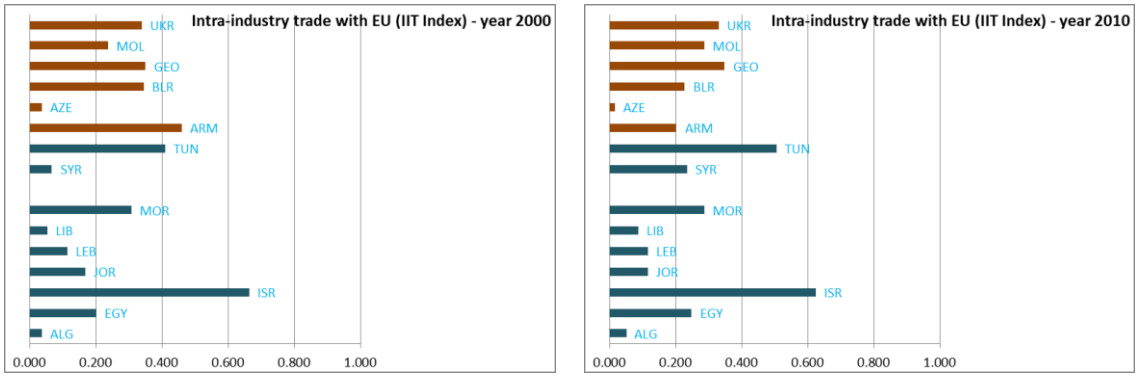
Sources: UN COMTRADE Database / Authors' elaboration

Figure 12: Index of Revealed Comparative Advantage, against the ENP countries, for the EU countries in the sector of fuel primary commodities, Years 2000 and 2010



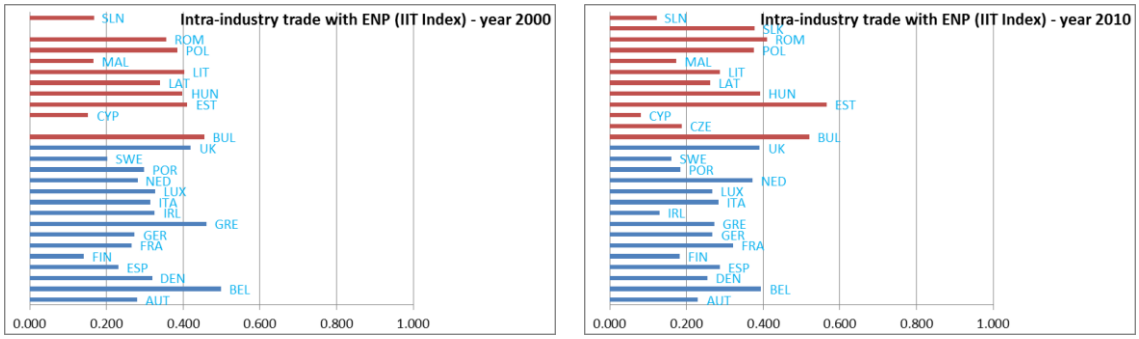
Sources: UN COMTRADE Database / Authors' elaboration

Figure 13: Index of Intra-Industry Trade for the ENP countries, Years 2000 and 2010



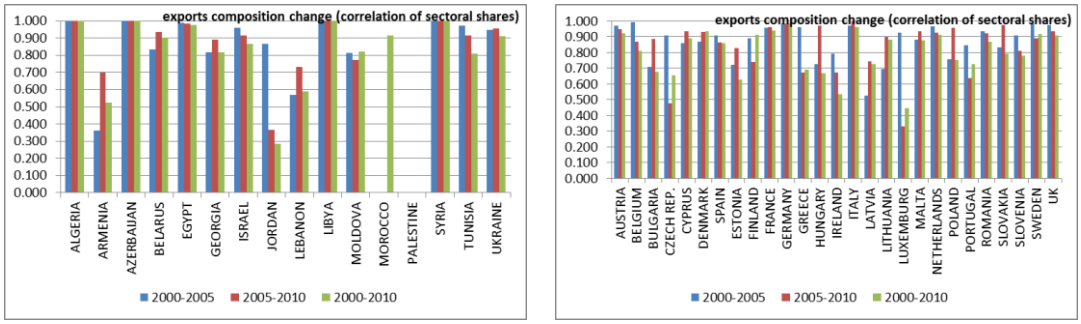
Sources: UN COMTRADE Database / Authors' elaboration

Figure 14: Index of Intra-Industry Trade for the EU countries, Years 2000 and 2010



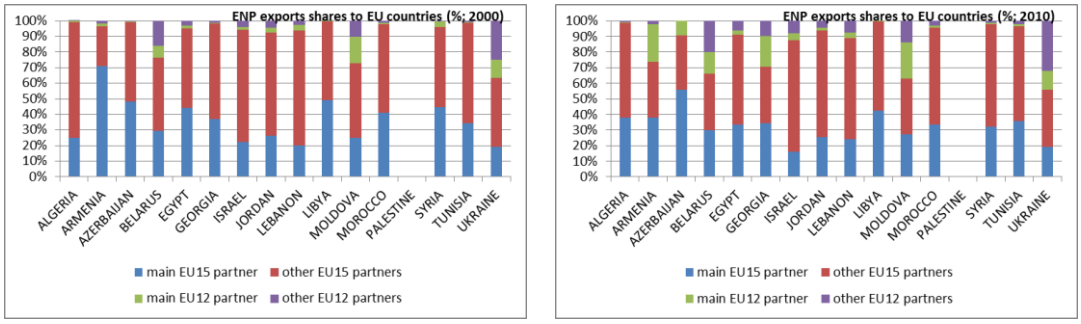
Sources: UN COMTRADE Database / Authors' elaboration

Figure 15: Index of Trade Composition Change (correlation of exports sectoral shares) for the ENP and EU countries, Periods 2000-2005, 2005-2010, and 2000-2010



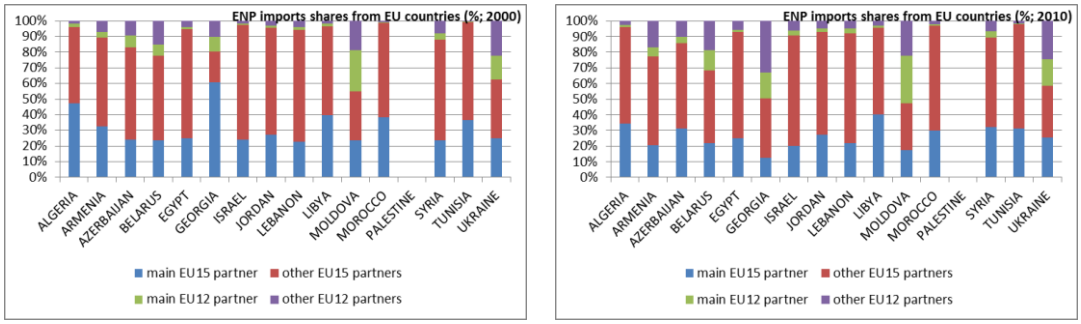
Sources: UN COMTRADE Database / Authors' elaboration

Figure 16: Spatial allocation of the ENP exports to the EU countries (% of total exports to the EU), Years 2000 and 2010



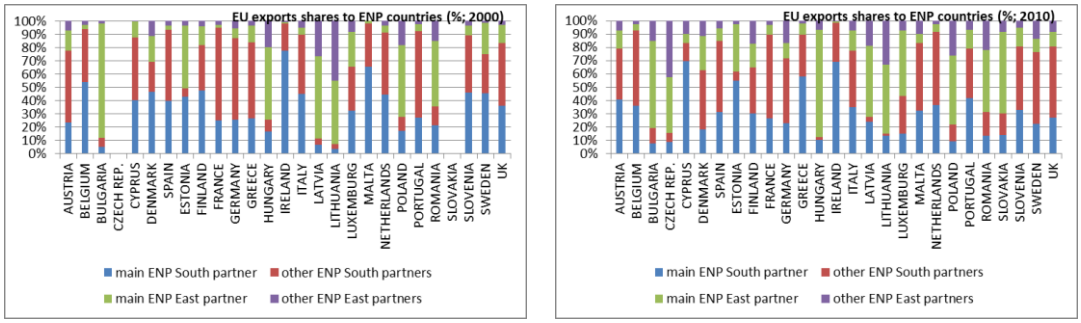
Sources: UN COMTRADE Database / Authors' elaboration

Figure 17: Spatial allocation of the ENP imports from the EU countries (% of total imports from the EU), Years 2000 and 2010



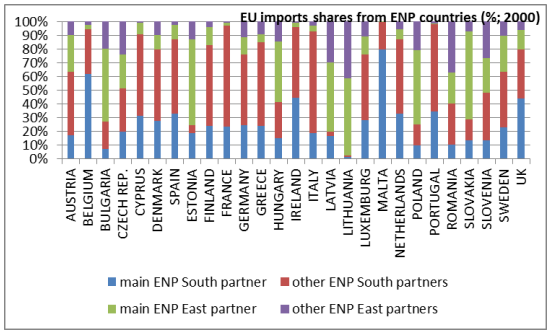
Sources: UN COMTRADE Database / Authors' elaboration

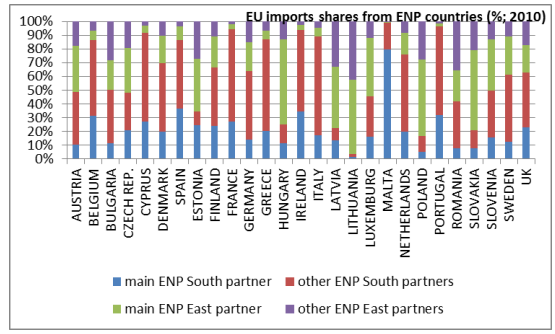
Figure 18: Spatial allocation of the EU exports to the ENP countries (% of total exports to the ENP), Years 2000 and 2010



Sources: UN COMTRADE Database / Authors' elaboration

Figure 19: Spatial allocation of the EU imports from the ENP countries (% of total imports from the ENP), Years 2000 and 2010





Sources: UN COMTRADE Database / Authors' elaboration