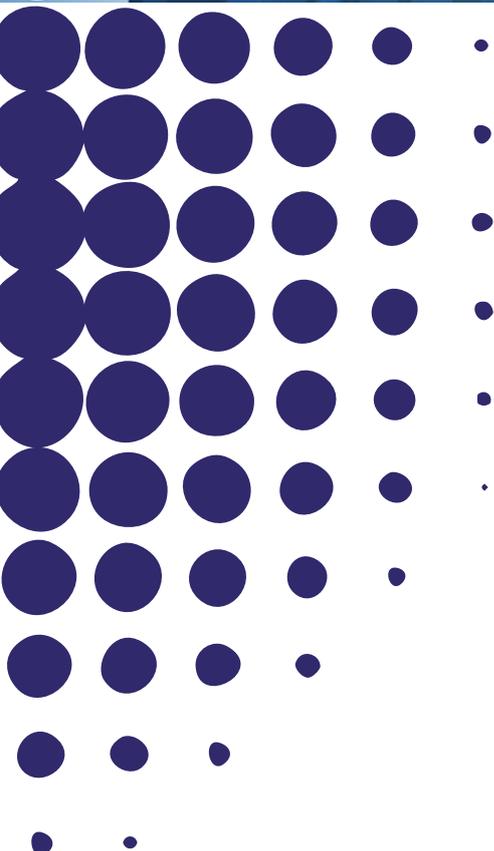


D1.1 SEARCH DELIVERABLE

Report on the development effects of both the EU enlargement and the ENP since their implementation in 2004: socio-economic cohesion regional disparities and intensities of economic interactions.

January 2012



The research leading to these results has received funding from the European Community's Seventh Framework Programme (FP7/2010-2.2-1) under grant agreement n° 266834

**Deliverable 1.1: Report on the Development Effects of both
the EU Enlargement and the ENP since their Implementation
in 2004: Socio-Economic Cohesion, Regional Disparities and
Intensities of Economic Interactions.**

*Andrea Ascani** , Ron Boschma* , Riccardo Crescenzi** , Simona Iammarino** ,
Edzard Wesselink**
**Coordinators*

*(*Utrecht University, **London School of Economics and Political Science)*

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1. Introduction

After the fifth enlargement round of the European Union in 2004 its external borders shifted drastically. Suddenly a range of poorer, economically and politically less stable and less democratic countries bordered the EU. In response to these changing circumstances the need was felt to create a unified policy to deal with neighbouring countries. This unified policy, the European Neighbourhood Policy (ENP), subsumed the patchwork of existing policy instruments. Its goal is to create a ring of countries around the EU with which the EU has close, peaceful and co-operative relations (COM 373 final, 2004).

The Search project will analyze the impact of this new policy on the integration of neighbouring countries and the EU in the areas of trade flows, mobility and human capital, technological activities and innovation diffusion, and the institutional environment. The report of deliverable 1.1 forms a baseline for these analyses, by offering an overview of relevant research projects and academic literature on the ENP, and a literature review on several theoretical perspectives. Together with the report of deliverable 1.2, which gives an overview of the history and the goals of the ENP, the institutional structures and the policy measures that have been taken, the report of this deliverable will support and inform further research of the SEARCH project.

This report consist of three working papers; the first working paper, WP1.1, takes stock of existing research projects on the ENP, the second, WP1.2, reviews the literature on new economic geography, and the third, WP1.3, reviews the literature on regional development and the

enlargement of the EU. This report will not elaborate on the institutional structure of the ENP, because this information is contained in the report of deliverable 1.2.

Working paper 1.1 takes stock of European research projects that have studied the impact of the ENP in different themes. These themes are selected to accord with the other workpackages of the SEARCH project. The first theme considers the impact of the ENP on trade, FDI, and localization choices. The second theme considers labour migration, remittances, and their influence on the EU and the ENP countries. The third theme is concerned with innovation diffusion, research activities and networks, and technological activities. The fourth and final theme is concerned with the institutional environment, cultural diversity and social capital. This stock-taking provides a sketch of the frontier in empirical research on the ENP from the perspective of different academic disciplines, and informs the empirical research of the SEARCH project.

Working paper 1.2 explores the main contributions to New Economic Geography (NEG) with a particular focus on the effects of economic integration on spatial development. Firstly, the theoretical framework is explored by presenting the fundamental building blocks of NEG and successively looking at the principal models of NEG. Then, empirical research within a NEG framework is summarised by giving an overview of empirical studies in order to give a sense about the main paths that research has covered so far and, more particularly, the debate about the economic integration effect of the EU enlargement to Central Eastern European Countries (CEECs) is explored. This perspective can inform further research in the SEARCH project.

Working paper 1.3 offers an analysis of the main concepts explored in the regional and local economic development literature. It explains the rationale for a regional approach to development in a context of growing internationalisation of the world economy, by analyzing how development is context-specific. It then explores how this encourages bottom-up economic policy development. Finally, the paper analyzes the movement towards decentralization in most parts of the world in the last decades in this light. This theoretical and empirical overview can further aid the understanding from which the SEARCH project analyzes the ENP.

Together, these three working papers together give an overview of the relevant theoretical and empirical literature and provide part of the backdrop against which further research on the ENP can be conducted.

2. General Conclusion

This report consists of three working papers, which subsequently offer an overview of the gaps in empirical literature on the ENP in the themes that the SEARCH project will examine, an overview of theoretical literature and empirical literature on new economic geography, and an overview of regional development literature. Together these working papers could inform both the empirical direction and the theoretical underpinnings of the SEARCH project. This conclusion will give a brief overview of the most important conclusions of the working papers. Since the goal of this report is only to provide an overview of existing research in order to inform the SEARCH project, policy implications of this report are not further explored. The academic implications of this report for the SEARCH project will not be discussed in depth either, as that is the topic of the report of deliverable 1.3.

Working paper 1.1 gives an overview of the empirical literature that studies the ENP and its impacts in the areas of trade, migration, innovation and education, and the institutional environment, social capital and cultural diversity. The majority of empirical literature concerning the ENP has focused on trade, migration has received attention to a lesser extent, there are only a few studies on innovation in the ENP countries, and no studies explicitly examine the role of the ENP on the institutional environment, cultural diversity and social capital on innovation. In all these research projects, three key gaps can be identified. Firstly, most research does not examine the effect of specific policy measures, but only analyzes the change over a period of time which can only measure the impact of all policies that have been implemented in that period. Secondly, almost all studies focus on a national level in their analysis, and the sub-national level is rarely considered. Thirdly, most of the reforms carried out due to the ENP are very recent, and most studies do not have data that is recent enough to evaluate the impact of these reforms.

Working paper 1.2 summarizes the main insights offered by NEG with respect to economic integration between countries and regions. What emerges from reviewing the theoretical framework of NEG is a fundamental ambiguity in the response of spatial economic processes to the gradual removal of trade barriers. Most, but not all NEG models predict a bell-shaped association between the agglomeration of economic production and welfare in a few places and the intensity of trade liberalisation. In this case barriers to trade are not only represented by 'natural' trade obstacles such as tariffs and quotas, but also by other elements such as different regulatory frameworks as well as different languages and cultures. Therefore, full economic integration is not possible without integration in a number of non-economic elements. With respect to empirical research, relevant empirical studies concerned with the effect of the EU

enlargement eastward are reviewed. Most of these works seem to suggest that economic integration lead to a restructuring of industry in CEECs and that relocation patterns characterise most of the economic geography of such countries. Divergence and polarisation between regions in new EU member countries appear to be among the main consequences of enlargement, with more favoured regions (metropolitan and regions bordering EU) taking off while others stagnating or declining. It remains to be seen if the ENP has similar divergent effect on neighbouring countries.

Working paper 1.3 offers an analysis of the main concepts explored in the regional and local economic development literature. First, the rationale for a regional approach to development in a context of growing internationalisation of the world economy is explored. Then, the relevance of local social and institutional characteristics is discussed by arguing that favourable conditions for development are the result of a highly context specific combination of rules, norms and social relations which encourage and facilitate knowledge diffusion and exploitation mostly on a localised basis. It is argued that the frequent ineffectiveness of top-down policies employed to spur regional development supports the importance of a bottom-up approach to economic development emerging from. Finally, it is argued that the increasing demand for decentralisation of powers and resources from central governments to regional and local administrations in most parts of the world in the last decades can be interpreted as the acknowledgement that regional forces and characteristics are strongly relevant in shaping local development trajectories in a context of increasing globalisation. In this framework, therefore, decentralisation represents the capacity of heterogeneous regions and territories to tailor specific development strategies in order to address their particular needs and influence their own destinies.

Together, these working papers provide an empirical direction and theoretical underpinning of the SEARCH project. The connections between these working papers and the SEARCH project will be teased out more extensively in the report of deliverable 1.3.

WP1/01 SEARCH WORKING PAPER

Taking Stock of Research Projects on the European Neighbourhood Policy

Edzard Wesselink, Ron Boschma

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Taking Stock of Research Projects on the European Neighbourhood Policy

Edzard Wesselink, Ron Boschma

Utrecht University
Faculty of Geosciences
Department of Economic Geography
PO Box 80 115
3508 TC Utrecht
The Netherlands
tel. +31 (0)30 253 2896 (or 1399)

Abstract

This paper offers an overview of the key research projects that have examined the various impacts of the European Neighbourhood Policy (ENP). The paper focuses on the impact of the ENP on trade, migration, innovation and institutional and cultural diversity, and social capital. The majority of empirical literature concerning the ENP has focused on trade. Migration has received attention to a lesser extent. There are a few studies on innovation in the ENP countries, and no studies explicitly examine the role of the ENP on the institutional environment, cultural diversity and social capital on innovation. In all these research projects, three key gaps can be identified which are most relevant for the SEARCH project. Firstly, most projects do not examine the effect of specific policy measures, but only give an overall analysis of the impact of all policies that have been implemented in a time period. Secondly, almost all studies focus on a national level in their analysis. Rarely is the sub-national level considered. Thirdly, most of the reforms carried out due to the ENP are very recent, and most studies do not have data that is recent enough to evaluate the impact of these reforms. The specific gaps as identified in this paper can inform further empirical studies of the SEARCH project.

Keywords European Neighbourhood Policy, Literature Review, Trade, Migration, Innovation, Institutional Environment

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1. Introduction

After the fifth enlargement round of the European Union in 2004 its external borders shifted drastically. Suddenly a range of poorer, economically and politically less stable and less democratic countries bordered the EU. In response to these changing circumstances the need was felt to create a unified policy to deal with neighbouring countries. This unified policy, the European Neighbourhood Policy, subsumed the patchwork of existing policy instruments. Its goal is to create a ring of countries around the EU with which the EU has close, peaceful and co-operative relations (COM 373 final, 2004). The Search project will analyze the impact of this new policy on the integration of neighbouring countries and the EU in the areas of trade flows, mobility and human capital, technological activities and innovation diffusion, and the institutional environment

This working paper will consist of five sections, which take stock of European research projects that have studied the impact of the ENP on different policy themes. The first section gives an overview of the main institutes that do empirical research on the ENP. The other sections focus on different policy themes. The themes in which this overview is divided follow the themes of the different SEARCH work packages. The first theme considers the impact of the ENP on trade, FDI, and localization choices. The second theme considers labour migration, remittances, and their influence on the EU and the ENP countries. The third theme is concerned with innovation diffusion, research activities and networks, and technological activities. The fourth and final theme is concerned with the impact of political, cultural and social institutions. This stock-taking will provide a sketch of the frontier in empirical research on the ENP from the perspective of different academic disciplines, and inform the empirical research of the SEARCH project.

Since the ENP is relatively new, the amount of research done on its impact is limited. In the themes where there is little or no research that relates specifically to the ENP, the report will also provide an overview of projects that examine the enlarged European Union. These projects could offer a framework for similar studies of the impact of the ENP. The projects that are surveyed in this report mostly result in reports with a strong empirical focus. Academically published articles that are not a result of European research projects will receive less attention in this overview because the focus is mostly on applied empirical knowledge about the ENP, but they will also be detailed if relevant to describe the state-of-the-art knowledge on the impact of the ENP. All references in this report also refer to project numbers in order to clarify which publications

belong by which project. These numbers are listed in the project overview tables, appended to the report.

2. Main Institutes Performing Empirical Research on ENP

Many of the research projects described in this working paper have been funded by either the European Framework programmes, by specific grants like the Marie Curie grant or by other European funding mechanisms. A range of universities, independent research institutes and research networks carry out these types of research. Some of the most active players in the field of research on the ENP are listed below, with a short reference to their core activities.

CASE is the Center for Social and Economic Research. This center is an independent research institute that carries out policy research for the European Union. They apply for funding through the Framework Programmes, but they also carry out contract research for national governments and the European Commission. Their core focus is on the countries in Central and Eastern Europe, but they have recently diversified into studies of the Mediterranean countries. They have participated in a few large studies of the ENP, and they have also carried out smaller country studies for some of the eastern ENP countries (CASE, 2011a).

FEMISE is the Euro-Mediterranean Forum for Economics institutes. This forum has 94 members, and it promotes research on Euro-Mediterranean collaboration. The forum was founded in 1998, when it was studying the effects of the Barcelona process and the EuroMed collaboration. With the ENP subsuming previous policies, the FEMISE is now dedicated to studying the effect of the ENP on southern ENP countries. The FEMISE receives a yearly budget of around 6 million Euros from the FEMIP, a facility from the European investment fund to assist economic development and integration in the Mediterranean area. In yearly funding rounds all members can compete for research projects. All research projects relate to the southern ENP countries. All projects work towards the main goal of gaining a deeper understanding of the impact of the ENP on southern countries (FEMISE, 2011).

The CREMed, a collaboration between the European Institute of the Mediterranean and the Barcelona Graduate School of Economics, also strives to monitor the economic dimensions of the ENP. This institute was founded in 2008, so it does not have a large number of reports yet (CREMed, 2011). These institutes are the most important sources of research on the ENP in the topics of the SEARCH project. Of course there are a lot of other institutes that also research the

European Union, but for these institutes the ENP and the topics of the SEARCH project are not the core focus of research.

3. Trade, FDI and Localization

The goal of work package two is to gain a comprehensive insight into the determinants and the impact of the ENP on trade and capital flows between the partner countries and the EU, and the policy implications of these effects. The impact of trade and FDI can be analyzed in terms of spatial patterns, economic growth, structural change and cohesion. This literature overview will give insight into existing European research projects that analyze these effects.

3.1. Trade liberalization

The ENP promises access to the free internal market to the partner countries in exchange for political and economic reforms. The promise of the benefits of free trade is the driving force behind the reforms that the ENP strives to realize. That is why it does not come as a surprise that a large part of ENP literature is devoted to the effects of trade liberalization. The ENEPO project and some smaller projects carried out by the CASE institute, and a range of projects carried out by members of the FEMISE and by CREMed have resulted in a range of reports that try to assess the impact of trade liberalization. Most reports do an ex-ante analysis, and use computable general equilibrium models (CGE's) to predict what effect further trade liberalization could have on economic growth in different ENP partner countries. There are also some reports that do an ex-post analysis and try to estimate what the effects are of existing reforms.

Other reports use a range of different approaches to execute a more detailed analysis by examining only the impact on a few countries, or a few sectors in those countries, or on the labour market of specific countries. All these reports examine the impact of tariff-barriers to trade. There is also a range of reports that tries to estimate the size and impact of non-tariff barriers (NTB) to trade, such as technical product specifications or other quality assurance demands, and the possible effects of removing these barriers. Finally, a range of reports use a qualitative approach to map the importance of specific trade flows for policy, for instance energy trade in the eastern ENP countries. Table 1 lists the most important projects and the rest of the section further details these projects and a number of other academic publications that have advanced our knowledge of the impact of the ENP on trade with ENP partner countries.

Table 1: Overview of European Research Projects relating to the effects of the European Neighbourhood Policy on Free Trade.

Institutes	Project Details:	Countries	Topic
CASE	Nr 1. ENEPO May 2006- May 2009 32 reports	CEE Countries, CIS Countries ,Russia	Influence of ENP on FDI, trade (TB's and NTB's), labour migration, remittances and institutional harmonization
	Nr 2. Trade and Economic Integration in the Euro-Mediterranean Region Dec 2008-Jul 2009 2 reports	EU 27, MEDA countries	Effect of existing integration agreements, EU-south and south-south, on trade patterns in the region using CGE's. Study of potential future FTA's in region, short- and long-term.
	Nr 3. Economic Aspects of the Energy Sector in CIS Countries. Aug 2007- Apr 2008 2 reports	Azerbaijan, Belarus, Kazakhstan, Georgia Russia, Turkmenistan Ukraine, Uzbekistan	Impact of energy sector on respective countries on macro-economic indicators. Influence of possible EU policies towards energy (that are part of the ENP) on the future development of energy-trade.
	NR 4. Economic Impact of EU-Armenia and EU-Georgia FTA Jul 2007- March 2008 4 reports	Georgia, Armenia, Azerbaijan ,Black Sea countries	Implications of FTA between EU and Georgia and Armenia, and implications of regional integration
	NR 5. Prospects for EU-Moldova Economic Relations Aug-Dec 2006	Moldova	Comprehensive analysis of the impact of ENP policies on trade, FDI, finance, migration, regulatory frameworks, and local conflicts.
	NR 6. Prospects of EU-Ukraine economic relations May-Dec 2006	Ukraine	Examination of implementation of ENP economic reforms by Ukraine. Analysis of optimal level of integration and freedom of movement of labor, capital, goods and services
Case and CEPS for the FEMISE	NR 7. MEDPRO: Prospective analysis for the Mediterranean region. Feb 2010-Jan 2013 5 reports up to dec 2011	Mediterranean Partner Countries	Possible alternative political scenarios for 2025 for the region. Possible role of EU policy in the process. Impact of policy on energy and climate change mitigation, economic development, trade and investment, human capital, social protection, inequality, and migration.
Various institutes related to FEMISE	NR 8. Assessing the Macro Economic Effects of the Barcelona Initiative's Liberalization Process FEM 31-10, 2007	Algeria, Egypt, Jordan, Lebanon, Morocco, Syria, Tunisia, Israel, Turkey	Literature review of 25 articles that perform ex-ante CGE models on EU integration. First ex-post CGE analysis of FTA's from Barcelona Process
	NR 9. Income Inequality and Poverty after Trade	MENA countries, Morocco	Impact of free-trade on low income jobs. Specific case studies of Morocco

	Liberalization in MENA Countries FEM 33-02, 2009	and Israel	and Israel
	NR 10. Unemployment, Job Quality and Labour Market Stratification in the MED Region: The cases of Egypt and Morocco FEM 32-20, 2009	Egypt, Morocco	Impact of the gradual integration of Morocco and Egypt in the world economy on the wage distribution in the labour market, differentiated by skill and gender.
	NR 11. Deep Integration, Firms and Economic Convergence FEM 33-23, 2010	Morocco	Impact integration on business environment. Differential impact of business environment on firms. Overview of institutional changes in Morocco that have furthered convergence.
	NR 12. Impact of Liberalization of Trade in Services. FEM 22-02, 2005, 10 articles in one report	Egypt, Morocco, Tunisia, Turkey	Predicting the effect of liberalization of Banking, telecommunication, and Maritime sector on four selected countries.
	NR 13. South-South Trade, Monetary and Financial Integration and the Euro-Mediterranean Partnership: An Empirical Investigation FEM 22-39, 2005	Bahrain, Egypt, Jordan, Kuwait, Lebanon, Morocco, Qatar, Saudi Arabia, Syria, Tunisia, UAE, Yemen	Measuring level of integration between respective countries and suggesting policies for further integration.
	NR 14. Regional Integration, Firms' Location and Convergence: An Application to the Euro-Mediterranean Area FEM 33-01, 2009	Mediterranean and North African Countries	Measuring the effect of the Barcelona Process and the ENP on integration in the MENA area by analyzing co movement of macro-economic indicators.
	NR 15. Comparative analysis of importance of technical barriers to trade (TBT) for Central and Eastern European Countries' and Mediterranean Partner Countries' exports to the EU FEM 22-03, 2005	CEE countries, Mediterranean Partner countries	Measuring the size of TBT's, and their impact on the economy of Mediterranean partner countries. Quantifying the benefits of harmonization of institutions.
CREMed	NR 16. Assessing the Macroeconomic Effects of the Barcelona Initiative Working paper 6, 2010	Algeria, Egypt, Jordan, Lebanon, Morocco, Syria, Tunisia	Using econometrics to calculate effect of free-trade agreements on respective countries. Calculating the predictive power of earlier studies that estimate the effect of the removal of trade barriers.
	NR 17. ClubMed? Cyclical fluctuations in the Mediterranean basin Working Paper 1, 2011	EU 27, MENA countries	Examining the level of economic integration by measuring co-movement of macro-economic indicators.

The ENEPO project focuses on the Commonwealth Independent States (CIS), most of which are eastern ENP countries. The project offers two overview reports that describe the baseline state of affairs in the CIS countries and estimate the gaps between the EU and the CIS countries on economic, human, openness, environmental, and institutional dimensions (1, Sinitsina et al., 2008), and the differing interests and motives of the various CIS countries for integration (1, Menkiszak et al., 2008). These articles give a concise overview of the state of affairs regarding the actual situation in these countries and their approach to the ENP framework.

The ENEPO project also has authored a report on the ENP and trade flows on a country level, which uses a CGE model to assess the possible impact of different types of free trade agreements (FTA's) for four CIS countries (1, Francois and Manchin, 2009). It suggests that an FTA in only goods would most likely have a negative effect on the economic growth of these countries, but that FTA's with deeper integration might have a positive effect on the CIS countries.

The CASE has also contributed to the MEDPRO project within the FEMISE network. The MEDPRO is an ongoing project which assesses the prospects of the Mediterranean area. Within this project, Ghomein (7, 2011) has authored a report that studies trade flows in with the Southern ENP countries. This project uses similar techniques to assess the impact of more extensive free trade agreements with the southern ENP countries.

The FEMISE has also authored a range of smaller projects that focus on the southern ENP countries. Lucke and Nathanson (8, 2007) for instance give an overview of all previous studies that model the potential impact of removing tariff barriers in the southern ENP countries, using General Equilibrium Models. This study reviews 25 studies, lists the countries concerned and the calculated impacts. All these studies are ex-ante studies that examine the possible effect of trade liberalization. The vast majority of these studies have been performed before the launch of the ENP, and they focus on the impact of earlier trade reforms initiated through the Barcelona process. Lucke and Nathanson (8, 2007) perform the first ex-post CGE analysis in which the actual effects of reforms are analyzed. The study uses data up to 2005, and therefore does not incorporate reforms carried out due to the ENP. However, it does provide a useful starting point to understand the impact of earlier trade reforms.

Lucke and Zotti (16, 2010) have further analyzed the use of CGE models in the southern ENP countries, this time through the CREMed institute. They analyze the predictive power of all studies that have carried out CGE models, and find no statistical evidence to support the idea

that these models can effectively predict the benefits of trade liberalization. This suggests that the slew of studies using CGE's to predict the effect of trade reforms due to the Barcelona process were not the most effective approach in understanding the possibilities of trade reforms.

The ENEPO has not only focused on the national-level impact of free trade, but has also authored two reports that model the sub-national spatial effects of trade liberalization using numeric simulation techniques. Melchior (1, 2009a) used a numeric simulation model with 90 regions in 9 countries to examine to what extent post-enlargement integration could predict the shift in spatial income distribution. The model finds that areas further away from the middle of the EU grew faster after enlargement. This could be taken as a sign that the integration offered by enlargement reduced the costs of distance for economic activity. The effect was also visible in Ukraine, Turkey and Russia, suggesting that the enlargement has also had benefits for ENP countries. In the second report this model was used to examine the effect of enlargement on border areas of the EU and of ENP countries (1, Melchior, 2009b). The conclusions of this model were that growth did significantly differ between border regions, but that these differences could be explained by country effects, not integration effects. These models do not explicitly measure the effect of integration caused by the ENP, but they could offer a framework or theoretical model for analysis of the regional impact of the ENP.

The FEMISE has also supported a range of projects that study the effect of free trade on different levels than the national level. Nathanson (9, 2009) examines the effect of trade liberalization on low-income jobs. They find that it depends a lot on the specific policies of countries whether the poor benefit from economic growth resulting from trade liberalization. In this report, two in-depth case studies of the labour markets of Israel and Morocco provide more information about the mechanisms that guide the influence of trade liberalization on trade.

Said (10, 2008) has also analyzed the impacts of trade liberalization on labour markets, but focused specifically on Egypt and Morocco. This analysis shows that liberalization has varying effects. On the one hand it has caused wage gaps to narrow and labour conditions to improve; on the other hand the economic prospects have on average worsened.

Augier (11, 2010) uses firm-level data of Morocco to examine the varying effects trade liberalization has on firms. The report gives an in-depth overview of economic reforms in Morocco, coupled with a firm-level analysis of the performance of firms related to the business environment. Using the influence of various business environment variables on different types of

firms, and the influence of trade liberalization on the variables, the impact of trade liberalization on different firms could be predicted. The study suggests that Moroccan firms probably suffer from a mismatched access to credit, especially the smaller firms that do not export, and that trade liberalization might improve access to credit.

FEMISE does not only examine the effects of liberalization in trade of goods, but also in trade of services. They have authored a range of studies, published in one report, that examine liberalization of three service sectors; the banking, telecom, and maritime sector in Turkey, Tunisia, Morocco and Egypt (12, Bilkent University, 2005). The studies use a range of methods and have varying results. The studies suggest that Morocco would have the most to gain from adopting the EU acquis, with strong growth potential in all three sectors after adoption of the Acquis. In Egypt, liberalization would create most growth potential in the maritime sector, marginal growth in the banking sector, and unknown results in the telecom sector. For Tunisia, the effect was only studied for the maritime sector, and the study had inconclusive results due to a dearth of data.

All these projects model the possible effect of complete liberalization of markets. However, these projects do not actually measure the state of integration at the moment. Other projects do attempt to measure the actual level of integration in order to find out whether reform policies actually reach their goal. Through a FEMISE project Neaime (13, 2005) for instance analyzes to what extent neighbouring Mediterranean and Middle Eastern countries – many of which are part of the southern ENP policy – are integrated. He uses a model in which co-integration is examined by checking to what extent macro-economic variables between countries exhibit co-fluctuations. When different countries experience convergence in the fluctuation of macro-economic variables, they can be said to be integrated to a certain extent. Based on this measure of integration, barriers to trade flows can be examined. The report then analyzes differences between different types of countries in the Mediterranean and Middle Eastern area, and examines policy recommendations that could enhance future integration and trade flows.

Within another FEMISE project Peridy (14, 2009) has examined integration between the southern ENP countries and the EU countries. Using similar techniques to Neaime (13, 2005), convergence of macro-economic indicators of EU and MENA countries was examined. The Barcelona process before 2004 and the ENP after 2005 does not seem to correlate with increased macro-economic convergence between the MENA and EU countries. Interestingly, the

level of investments by the European Investment Bank in a country did correlate with convergence to the EU and therefore did seem to impact integration.

Canova and Ciccarelli (17, 2011), in a study authored by the CREMed institute, also analyze the extent of integration between the EU and Mediterranean and North African countries, most of which are southern ENP countries, by examining the extent of co-movement of macro-economic indicators. They find that the EU 27 is integrated, but that in the MENA area there is only selective co movement in localized areas, not general co movement. They conclude by suggesting that any level of integration in the southern ENP countries is localized and easily reversible.

One of the reasons that removing tariff barriers is not enough for true integration is that there are also a large number of non-tariff barriers (NTBs) to free trade. Most of the southern ENP countries have FTAs with the EU, but according to the above-mentioned studies integration between the EU and the southern ENP countries is weak at best. Part of the promise to ENP countries is that by adhering to the reforms that the EU proposes, these NTBs will disappear.

A FEMISE project authored by Michalek (15, 2005) tries to offer a starting point to formally calculate whether it is beneficial for MEDA countries to accept the economic reforms of the ENP. The study examines the impact of non-tariff barriers in the form of technical compliance regulations for import products. Different product groups have different types of technical compliance demands, which mean that the southern ENP countries with different export profiles experience different effects of these technical barriers to trade. The proposal of the ENP to give neighbouring countries access to the unified market when they take up substantial parts of 'the Acquis' will remove these barriers to trade as it will give these countries open access to the market, but adopting the Acquis will also cost money. The study concludes that the benefits of the ENP will vary between countries, but that further studies are necessary to calculate the exact effect for different countries.

Maliszewska et al. (1, 2009), through the ENEPO project, try to model the effect of the removal of these NTB's in eastern ENP countries. They find the effects to be significant and very diverse, ranging from 1.7 per cent GDP growth in Georgia to 5.8 per cent GDP growth in Ukraine. Their study relies on a previous study by Taran (1, 2009) who has made an inventory of existing NTBs in these countries.

Focusing on a single sector, ENEPO has also investigated the energy sector in the Eastern ENP countries. A set of articles based on this project examine both the state of the energy trade between the EU and eastern ENP and Russia (1, Papava et al., 2009), and the influence it has on regional policy efforts of the EU (1, Dura, 2009).

The literature on the effect of the ENP in the area of trade has several important gaps. First of all, most impact studies examine the potential effect of complete trade liberalization. These studies analyze the maximum potential that free trade can offer. At the moment however, none of the ENP countries has the prospect of getting completely free access to the market. There are negotiations with some ENP countries to close deep and comprehensive free trade agreements, but even in such an arrangement only some products are completely liberalized and barriers still remain. No research up to now has tried to model the impact of specific policy arrangements that realistically lower trade barriers in certain sectors, instead of completely removing all barriers instantly. Such a study would be useful, as it would more accurately model the actual benefits ENP countries could derive from the ENP.

Secondly, there are significant costs associated with adopting all the relevant EU regulations and developing the standards compliance institutes needed to get access to the internal market. The ENP does supply funding to help the harmonization efforts, but it is not clear how high the costs actually are. A clearer understanding of the costs and benefits of the ENP is relevant because many critics of the ENP point out that the benefits the ENP promises are too low in comparison to the costs, which delays reforms in ENP countries.

Thirdly, the ENP is quite a recent policy, and reforms carried out due to the ENP have been even more recent. To complicate matters, reforms that date from before the ENP are still phasing in. The projects that have been reviewed either work with data that is not new enough to incorporate reforms taken under the ENP, or they do not try to separate the impact of the ENP and previous reforms. The projects that have been reviewed that assess integration always look at the effect of all policies combined, and never try to isolate the effect of a single policy measure. This means that up to now no project has truly managed to assess the impact of the ENP on trade flows.

Finally, only two studies explicitly examine the effects of trade liberalization on GDP development on a sub-national scale. These studies are limited because they model a limited number of regions, and have few possibilities for explicit modeling of different levels of trade

liberalization. This means that there is huge potential to explore the potential effects of trade liberalization on economic development on a sub-national level. These two studies could provide a starting point for the further development of trade models on a sub-national level which include more realistic policy elements.

3.2. FDI

FDI also plays an important role in the ENP because it offers strong prospects for growth and integration of the EU neighbouring countries. Whilst the CREMed, FEMISE and CASE devote less attention to FDI than to trade flows, they have still produced a variety of reports on the topic (table 2). These reports partially focus on determining the variables that influence FDI flows, often using gravity models but also a range of other econometric models, and partially on the potential impact of integration on FDI flows. Further, there is also a quite extensive academic literature on FDI, the EU, and neighbouring countries. Most of these articles focus on the accession countries and the effect of the EU enlargement, but some specifically analyze the ENP. This overview will only give an overview of the articles that analyze FDI flows in ENP countries.

The ENEPO project has carried out two studies that are related to FDI flows. The first examines the determinants of capital inflows in the CIS countries, most of which are eastern ENP countries, (1, Kudina and Lozovyi, 2007) using the Tobin-Markowitz framework, and the second examines the motives and impediments investors experience in investing in four CIS countries (1, Jabuciak and Kudina, 2008) using surveys. Kudina (1, 2009) gives a summary of these articles and extracts policy conclusions. Most interestingly, Kudina and Lozovyi (1, 2007) show that there is a correlation between FDI flows in the fifth enlargement accession countries and in the CIS countries. They tentatively suggest that this could mean that investors expect the ENP to have similar effects on the institutions and economy of ENP countries as the enlargement had on accession countries.

Jabuciak and Kudina have also studied FDI through a project of the OECD. In this project they have examined the conditions for a positive impact of FDI on the economy. Since FDI is often concentrated in industries that have limited interaction with the rest of the economy, like mineral extraction, this research examines under what conditions FDI has the largest impact on regional and local economies. Four CIS countries are used as case studies: Georgia, Moldova, Kyrgyzstan and Ukraine (19, Kudina and Jabuciak, 2008).

Over the years FEMISE has regularly commissioned studies on FDI in both accession countries and countries that were part of the Barcelona process and later on the ENP. A good example is a three-part study on the impact of ENP on FDI in the MENA countries, most of which are Southern ENP countries, by Cherif (18, 2009). The first part of this study examined the effect of signing partnership agreements with the EU on FDI inflows in MENA countries and does not measure any significant change in FDI flows.

Table 2 Overview of European Research Projects relating to the influence of the ENP on FDI.

Institutes	Project Details:	Countries	Topic
CASE	NR 1. ENEPO May 2006- May 2009 32 reports	CEE Countries, CIS Countries ,Russia	Influence of ENP on FDI, trade (TB's and NTB's), labour migration, remittances and institutional harmonization
Various institutes related to FEMISE	NR 18. Private Capital Flows in Southern Mediterranean Countries : Determinants and Impact on Economic Growth, Domestic Investment and Wage Inequality FEM 32-14, 2009, 3 articles in one report	MENA countries	Impact association agreements as signed through Barcelona process on FDI. Impact FDI on economic growth. Impact different forms of investment on Real Exchange Rate Appreciation.
OECD	NR 19. OECD Investment Policy Perspective 2008, Chapter of report	Kyrgyzstan, Georgia, Moldova, Ukraine	Conditions for spill-overs in local economy of FDI.

Table 3 Overview of European Research Projects relating to the impact of the ENP on Localization choices of firms.

Institutes	Project Details:	Countries	Topic
University of Macedonia	NR 20. Move: The moving frontier: the changing geography of production in labour intensive industries. Sept 2004- May 2007, 1 book.	EU countries	Development theoretical framework to understand localization and delocalization effects. Range of case studies applying the framework on different sectors in a range of EU countries.

The second part of the study analyzes the impact of FDI on economic growth in MENA countries. This study does report a positive effect, suggesting that FDI does have a positive influence on economic growth. The final study analyzes the effect of FDI as opposed to other forms of investment on the foreign exchange rate, as the exchange rate influences export competitiveness. It finds that contrary to other forms of investment like portfolio investment, development aid, or foreign borrowing, FDI does not have an appreciative effect on exchange rates. This suggests that FDI can be a useful source of capital flows for the development of a country.

Because there have been a limited number of European Research projects relating to FDI and the ENP, a brief overview of academic literature on this theme will also be offered. Academic literature has focused on a range of questions relating to FDI and ENP countries. For instance, there were fears that greater integration with the Central and Eastern European accession countries would negatively impact FDI flows to Mediterranean countries. Ferragina et al. (2005) reject this fear by showing that FDI flows to accession countries and southern ENP countries are not significantly related. This is shown by developing a gravity model for FDI flows. A gravity model relying purely on domestic economic, political and environmental variables is most effective in predicting FDI flows, and using external variables such as FDI flows to other countries did not improve the predictive power of the model.

Other research has tried to find out what determines why accession countries have a much higher level of FDI than the ENP countries. Kinoshita and Campos (2002) compare Central and Eastern European Countries with CIS countries in order to determine how FDI flows vary between these countries. Johnson (2006) also examines the differences between the Central and Eastern European accession countries and the CIS countries in order to find out whether the economic transition or other factors influence FDI flows.

Some studies have examined the development of FDI in a single ENP country more in-depth. Karmar and Badkardzhieva (2002), for instance, did an in-depth comparison between Egypt and three Eastern European accession countries. The three accession countries have witnessed a far more rapid uptake in FDI flows than Egypt, even in the period before accession. One of the main conclusions is that the promise of access to the unified EU market has tremendously increased the value of investments in the Central and Eastern European countries, even before accession has actually taken place. This suggests that if investors will find the promise of the ENP to grant access to the internal market credible enough, FDI flows to ENP countries could increase

drastically before any FTAs have been signed. Further examples of specific case studies are offered by Bakir and Alfawwaz (2009), who have examined the determinants of FDI flows in Jordan using a gravity model, or Al-rawashdeh et al. (2011), who have used ARIMA models to predict future FDI flows in Jordan.

The literature concerned with the ENP and FDI has similar gaps as the literature on the ENP and trade. The data used by most projects is not recent enough to assess the impact of reforms carried out due to the ENP. The studies that do have recent data take a macro-perspective and do not link changes in FDI to specific policy changes. This makes it impossible to separate the effect of the ENP from other policies that are still being phased in. Furthermore, the literature on FDI focuses on countries as a whole. There is very little, if any, attention for the sub-national spread in FDI flows, and the determinants and effects of different sub-national patterns of FDI.

3.3. Localization choices

To our knowledge, there has been only one European research project that specifically focuses on localization choices and delocalization effects in the European Union (table 3). The MOVE project has studied the question of how production patterns have shifted after the EU enlargement, resulting in a book on the topic (20, Labrianidis, 2008). The book first attempts to build a coherent theoretical framework out of previous, somewhat fragmented research into localization and delocalization effects. Then, a range of case studies are used to examine shifting spatial patterns in industrial sectors due to economic integration of regions. Most case studies focus on the European perspective, but there is also a range of case studies from other continents. Even though this book does not specifically focus on the localization effects of the ENP, it could offer a basis for further research into localization effects.

The academic literature further consists of a number of case studies that examine localization in the EU, but to our knowledge none specifically focus on the impact of the neighbourhood policy or one of its precursors.

In the literature relating to localization choices much work still needs to be done. The framework that results from the MOVE project could be seen as offering a starting point for further research on localization effects of the ENP. Since no studies have explicitly examined the impact of the ENP, this means that any research in this area could enhance our understanding of the impact of partial integration on localization choices. A potentially interesting venue of research is to study how the partial integration offered by ENP affects different sectors. Sectors have different location needs, so it is to be expected that partial integration would cause a shift in the spatial

industrial specialization patterns. This differential effect could be accentuated due to the fact that the ENP offers the possibility to negotiate sector-specific liberalization agreements. By researching the sector-differential shifts in spatial industrial specialization patterns, the SEARCH project could deliver important contributions to our understanding of the interplay institutional frameworks and localization choices.

4. Labour Migration and Remittances

The goal of work package three is to gain a comprehensive insight of the determinants and the impact of the ENP on labour and remittance flows between the partner countries and the EU, and the policy implications of these effects. The impact of labour migration and remittances can be analyzed from the sending and receiving region on the labour market, human capital formation, economic growth and social capital formation. This literature overview will give insight into existing European Research Projects that analyze these effects. These projects focus on both the determinants of existing migrant flows, the impact of these migrant flows on sending and receiving countries, and the potential migrant flows and their impacts under different policy regimes. The projects (table 4) use different criteria to disaggregate the migrant flows: some projects look at skill level, other projects at the demographic composition, and still other projects at historical cultural relations of migrants. The projects use a range of models: from simple gravity models, to CGE models, to multi-region world overlapping generation models.

4.1. Migration Patterns

The ENEPO project has generated four reports that analyze the determinants and impacts of migration patterns in selected eastern ENP countries. Atamanov et al. (1, 2008) analyze and model migrant flows in Russia, Ukraine, Belarus and Moldova. They differentiate between two different flows of migrants: those with ethnicities that have close ties with other countries or large Diasporas (e.g. Armenians in Russia or France) and migrants that migrate due to economic concerns. It is assumed that the first category of is less affected by push and pull factors than the second group. For the first group, a simple geometric projection is used, and for the second group a Computable General Equilibrium model is used. Three scenarios with varying levels of migratory restrictions to the EU and Russia are used to predict future flows of migrants. Some limited conclusions are drawn on the effects of these migratory flows on the demographic distribution in the example countries.

A second report by Borgy and Chojnicki (1, 2008) examines the question of the demographic impact of migratory flows in more detail, by using a multi-region world overlapping generation's model to simulate the interaction between population aging, pension reform and international capital and its effect on migratory flows.

Table 4 Overview of European Research Projects relating to the impact of the ENP on migration flows and remittances.

Institutes	Project Details:	Countries	Topic
CASE	NR 1. ENEPO May 2006- May 2009 32 publications	CEE Countries, CIS Countries ,Russia	Influence of ENP on FDI, trade (TB's and NTB's), labour migration, remittances and institutional harmonization
	NR 21. ENPI - Costs and Benefits of Labour Mobility between the EU and the Eastern Partnership Partner Countries Aug 2011 – Feb 2013. Unknown number of publications	Eastern Partner Countries Germany, United Kingdom, Italy, Poland, Spain	Predict future flows of labour migration from Eastern partner Countries, the impact of existing policy, and possible future policies that would aid in labour-matching with the EU. Also examine possible future inflows to the EU from other countries, especially the southern partner countries.
Case and CEPS for the FEMISE	NR 7. MEDPRO: Prospective analysis for the Mediterranean region. Feb 2010-Jan 2013 5 publications up to dec 2011	Mediterranean Partner Countries	Possible alternative political scenarios for 2025 for the region. Possible role of EU policy in the process. Impact of policy on energy and climate change mitigation, economic development, trade and investment, human capital, social protection, inequality, and migration.
Various institutes related to FEMISE	NR 22. Regional Integration and Goods and Factors Flows in the Middle East and North African Region and Turkey FEM 31-07, 2007. 7 articles in one report	Turkey, Germany	Range of articles that study determinants and effects of remittances. Notably the effect of the 1996 Customs Union between Turkey and the EU is examined, and found to have positive impact.
	NR 23. A Dynamic Long and Short Term Approach to Migration Between MPC's and the EU: Demographical Framework and the Role of Economic and Social Reforms FEM 32-06, 2008, 3 articles in one report.	Southern Partner Countries	Report that gives an overview of existing labour migration patterns from Southern Partner Countries to the EU. Analysis of determinants of migration flows. Prediction of future migration flows under different policy scenarios. Analysis of the way a common migration policy could fit in the ENP.
	NR 24. Tendances migratoires entre les pays méditerranéens et l'UE: Evaluation quantitative et implications en termes de politiques économiques FEM 31-01, 2007	MENA countries	Analysis of newly raised migration patterns between MENA countries and EU. Comparison with migration patterns of other southern countries. Examination of coherence between national migration regimes and the ENP.
CREMed	NR 25. The impact of MENA-to-EU migration in the context of demographic change Working paper 5, 2010	MENA countries	Analysis of impact of different types of migration flows from the MENA countries to the EU on the sending and receiving areas. Analysis decomposed between the impact of low-skill and high-skill migrants. Implications studied of possible common migration policy which is selective based on skill.

In this model the eastern ENP countries and the EU are modeled using detailed demographic and economic data, and the effects of a range of migration scenarios on economic growth, the demographic distribution, and possibilities for pension reforms are calculated. A third report by Borgy et al. (1, 2009) is based on the same multi-region world overlapping generations model, and studies migration from a global perspective instead of purely the eastern ENP countries.

Finally, Atamanov et al. (1, 2009) focus on the economic effects of changes in migration flows for Moldova, Ukraine, Georgia, Kyrgyzstan, and Russia using a CGE model. All countries except for Russia are large net exporters of migrants. In all these countries remittances have a strong positive effect on private consumption. Russia is the destination country for most of the out-migration from CIS countries, and the model suggests that these inflows of migrants depress real wages in Russia.

The MEDPRO project, carried out by CASE through the FEMISE, is in its early stages, and has as of November 2011 not generated reports on migration or remittances in the southern ENP countries. However, it has generated a report on tourism flows to the southern ENP countries. The third work package of SEARCH will also study tourists as a form of people flows, so this report might be interesting. Tourism is a crucial element of most economies in the Mediterranean region, and has seen tremendous growth over the past decades. This report by Lanquar (7, 2011) projects the impact of different future policy regimes and different levels of political stability on tourism flows to the region. The projections suggest that even in a worst-case scenario, tourism flows will increase towards 2030.

The CASE has just started a new study called: “ENPI – Costs and benefits of Labour Mobility between the EU and the Eastern Partnership Partner Countries” (21, CASE, 2011b), which will focus on the impact of the ENP on labour mobility between Eastern ENP countries and the EU, the effect of these migration flows on sending and receiving areas, and possible policy interventions. This project has no finished reports yet, but in the course of the SEARCH project it is expected to generate a large number of reports that are relevant for SEARCH. Several of these reports would also model the impact of remittances on local economies, and the possible development of remittances due to different policy regimes.

FEMISE has authored two studies which relate to migration. These projects focus specifically on labour migration between the EU and southern ENP countries. The first study from Peridy (24, 2007) analyzes existing trends of migratory flows between the EU and MENA countries, many of

which are southern ENP countries, and determines factors that predict these flows. The study also tries to distinguish these flows from migrant flows from Sub-Sahara African countries. Further, the impact of specific national migration policies on existing migration flows is studied, and the coherence of these policies with ENP migration policies is examined. A rich and detailed econometric model is used to estimate the effect of specific policy measures. Finally, potential migration flows are studied in order to find out to what extent migration flows have reached their potential.

The second study by Lorca and Arce (23, 2008) consists of three publications. The first publication analyzes the extent to which the EU national migration policies are converging to a common policy. It concludes that collaboration on combating illegal migration has proceeded far more effectively than collaboration on allowing legal migration. There is precious little EU-wide collaboration on migration, especially since the rejection of a common constitution which would have enabled migration reforms. However, policy does seem to converge slowly. The second publication takes a purely demographic perspective and shows that continuing trends over the years will strengthen the pressure for existing migratory flows. The third publication concentrates on determining what variables predict migration flows, the influence of policies on these flows, and potential future migration flows under different policy regimes. The publication also gives an overview of a lot of previous articles that have modeled migration flows from and to the EU, and reviews the strengths and weaknesses of these publications.

The CREMed has also authored a study on migration from the MENA countries to the EU, by Docquier and Marchiori (25, 2010). Whereas previous studies look mainly at demographics, this study focuses more specifically on the impact of migration of high and low skill labour on both the sending and receiving regions. Like other studies that assess the impact of migration in both sending and receiving region, they use a multi-region world overlapping generation's model to study the impact of labour migration differentiated by skill. Based on this analysis they conclude that selective migration policies can have a detrimental effect on sending regions, unless there are targeted policies to compensate for loss in human capital. They do make the caveat that large outmigration of skilled labour might introduce stronger incentives for people to get highly educated, which might raise the level of human capital in a region, but do not explicitly model this effect.

There are several important gaps in the reviewed literature. First of all, the literature on migration has only examined the determinants and effects of migration flows on a national level

and regional. These studies do not use data on sub-national migratory flows on a sub-national level, and can therefore not model the causes and effects of migrant flows on this level.

Secondly, the reviewed literature has limited its impact studies to direct effects on the labour market and GDP growth. However, other literature suggests that migration also influences the human capital stock strongly through a range of mechanisms, and thus indirectly affects the economy. These effects can be both positive and negative. Because migration flows are so large in most ENP countries, these effects could have a significant impact on the economy of these countries and therefore deserve more attention.

Thirdly, the research on migration flows does model different policy regimes, and in this regard offers more realistic models than the literature on trade flows (section 3.1), but no research has empirically researched actual changes in migration flows due to specific visa agreements. Visa facilitation agreements have been concluded with several ENP countries (Deliverable 1.2 SEARCH), so it should be possible to empirically measure the impact of these policies.

4.2. Remittances

Remittances have received less attention than labour migration, but the studies that do examine remittances find that they have a significant effect on receiving economies. Internationally, there is a wide range of literature that examines these effects, but in relation to the ENP the research is relatively scarce.

The only direct study of the effect of the ENP on remittances was done by Atamanov et al. (1, 2009) in the ENEPO project. In this study four CIS countries are examined, and the impact of migration on the sending region is explicitly modeled. It is found that remittances constitute 8 per cent of GDP in Ukraine up to 30 per cent of GDP in Moldova. This is a huge number, and it shows how sensitive these countries could be to changing migration regimes following from the ENP. If the ENP enables free movement of people between ENP countries and the EU, the expectancy is that remittance flows will increase to even higher levels.

The FEMISE has authored one study on remittances. This study does not focus on ENP countries, but takes Turkey as a case study in order to examine different aspects of remittance flows (22, Akkoyunlu, 2008). However, since Turkey exists in a customs union with the EU, without being a member, it could offer an example of the direction the ENP could go. The ENP promises complete access to the internal market, which is similar to entering a customs union. This study

has resulted in seven articles, which each study different aspects of the dynamics between labour migration and remittances.

The impact of the ENP on remittances has received much less attention than the impact of the ENP on migration in the literature. No projects have yet analyzed remittance flows to southern ENP countries, although this information is forthcoming because CASE just started a project on labour migration (21, CASE, 2011b). The studies that have been done mostly examine only the direct income effects of remittances and rarely look at income replacement effects, either through alteration of the human capital stock, through Dutch disease like effects, or through other indirect effects. Also, realistic policy modelling has not been carried out. Finally, there is no overview of the size, causes, and effects of the remittance flows on a sub-national level.

5. Technological Activities and Innovation Diffusion

The fourth work package of the Search project deals with innovation diffusion and technological activities in the ENP countries. The focus of this work package will be on explaining the spread of technological activities and the diffusion of innovation through the EU27 and the ENP countries, and understanding the influence of the ENP on this process. In 2000 the European Research Area (ERA) was launched with the goal of creating a single European research market. In 2007, it was decided to open up the ERA to the ENP countries (ERAWatch, 2011a). Specific research and education policies like the Framework Programmes, Erasmus Mundus, and TEMPUS, were opened for ENP countries on a case-by-case basis (Deliverable 1.1, SEARCH). This section will first give an overview of the research on ERA, and then it will focus on the impact of specific policies like Erasmus Mundus or TEMPUS on innovation systems in ENP countries (table 5).

5.1 The ENP and ERA

To our knowledge there are no projects that specifically examine the impact of the ERA on ENP countries. The two projects that do study innovation systems in the ENP area were launched before the ENP countries were invited to the ERA; these projects will be discussed later in this section (table 5). There are other projects that do examine the European Research Area, but none of these projects specifically focus on the ENP. The ERAWATCH network regularly publishes reports on different elements of the ERA. In these reports the ENP countries are sometimes also mentioned, but to our knowledge the ERA has not published any study that is specifically focused on the ENP countries or on ENP policies concerning the ERA (26, ERAWatch, 2011b).

Table 5 Overview of European Research Projects relating to the impact of the ENP on technological activities and innovation diffusion.

Institutes	Project Details:	Countries	Topic
ERAWatch network	NR 26. ERAWatch: Range of research documents on the European Research Area. Yearly innovation survey through INNO-Metrics.	All European Area countries	Research Range of research that analyzes the European Research area from different perspective. Never a central focus on ENP countries, but they are often taken along in a general analysis.
Range of partners	NR 27. ESTIME: Evaluation of Scientific and Technological capabilities in Mediterranean countries. Sep 2004-Feb 2007 13 synthesis reports and final overview report.	Morocco, Tunisia, Algeria, Egypt, Lebanon, Syria, Jordan, Palestinian Territory	Description of state of research institutes and science and technology policies. Statistical overview of knowledge production through bibliometrics, in different sectors. Analysis of dynamics of research activities, and use of scientific results. Analysis of impact of specific policy measures and regimes on innovation and research.
Range of partners	NR 28. ASBIMED: Assessment of the bilateral scientific co-operation between the European Union Member States (MS), Accession Countries (AC), Candidate Countries (CC) and the Mediterranean Partner Countries (MPC) May 2004- Jun 2006 9 country reports and 3 overview reports.	Morocco, Tunisia, Algeria, Egypt, Lebanon, Syria, Jordan, Palestinian Territory, Turkey	Stock-taking of existing policies regarding education, research and development. Analysis of impact of separate policies on research collaborations.
CASE through the ERAWatch network	NR 29. Contribution of policies at the regional level towards the realization of the European Research Area. Dec 2008 - Jul 2009	16 EU countries	Analysis of contribution of ERA to the structuring of local science and technology policies. Analysis of barriers to engagement in the ERA process. Possibilities for strengthening the ERA
	NR 30. Monitoring progress towards the European Research Area Oct 2008 – Mar 2009	EU 27 countries	Analysis of the evolution of ERA related policies.

CASE has also carried out two projects that give an overview of the impact of the ERA. The first project by Górzyński (29, 2008) examines to what extent regional policies in sixteen EU regions contribute to the goals of the ERA. This project disaggregates the regions into three different types. Only for the regions which have significant research activities and who can specify their research policies autonomously has the ERA had significant impact.

The second project by Nauwelaers and Wintjes (30, 2008) has monitored the progress of innovation policies towards the goals as espoused by the ERA. This project has carefully examined the activities and programmes at institutional level, and the innovation policies at sub-national, national and regional level in selected areas to find out to what extent the principles of the ERA are being adhered to. The conclusion of this study is that a substantive convergence towards the principles of the ERA is indeed taking place in most regions, but that this convergence is mostly driven by grass-roots efforts of individual research institutions and not so much by national or supra-national policies. It remains to be seen whether this convergence also occurs in institutions and regions that are located in ENP countries.

5.2. ENP and Innovation Systems

Data on scientific production and innovation in the Mediterranean countries is scarce and unreliable. ESTIME is the first project which has tried to develop a systematic overview of the state of the science and innovation systems, and its related policies, in Mediterranean countries, a sub-set of southern ENP countries. A range of country reports for the first time give in-depth information, comparable and consistent information on the concentration of research in different sectors of the Mediterranean partner countries, and the relative impact of scientific production of these countries as compared to other countries. The project also gives a detailed inventory of all the local and regional innovation policies, and analyzes the value of these policies. It concludes that most innovation policies date back to the seventies, and that they are not conducive to either production of innovative scientific knowledge, or the diffusion of this knowledge to society. The report concludes that, by and large, there is a strong separation between research and society and that most knowledge does not diffuse into society (Arvanitis, 2008).

The ASBIMED project also has a focus on the southern ENP countries. Its focus is mostly on bilateral innovation policies between different EU countries and the southern ENP countries. The main purpose of the project was to create an inventory of existing policies which could help with

designing more coherent innovation policies in the future. The project has also carried out some analysis on the effectiveness of the innovation policies. By examining the different bilateral and multilateral innovation and research mobility programs in relation to developments in co-publications and researcher mobility, the project has tried to establish the effectiveness of these policies. It concluded that these policies often bear no correlation to the amount of collaboration between researchers in different countries. Finally, the project maps in significant detail co-publications and collaboration between researchers in southern ENP countries and within the EU. This information gives an initial overview of the existence of research networks in between the EU and ENP countries (28, ASBIMED, undated).

The ESTIME and ASBIMED projects suggest that the southern ENP countries have weak innovation systems at best, with a strong top-down structure. Linked to the conclusion of Górczyński (29, 2008) that only regions with a strong autonomous research policy benefit from the ERA, this would suggest that the ENP countries would have little benefit from the ERA. However, the context in southern ENP countries is significantly different from the EU context, so the results cannot easily be extrapolated. Similar inventory projects to our knowledge do not exist for Eastern ENP countries.

Existing research into innovation in the ENP countries has been hampered by a lack of reliable data and statistics. Two projects have ameliorated this problem by performing a first inventory of the state of research and innovation, and related policies, in the southern ENP countries. To our knowledge, no similar projects have been carried out in the eastern ENP countries, which mean that there is a gap in the data on this topic.

Although these projects try to trace the effectiveness of several policies instated through the ENP that are designed to enhance student and researcher mobility and cooperation they mostly work with outdated data. The ENP has significantly developed the implementation of these policies since these projects have been carried out (Deliverable 1.2, SEARCH). New research could shed more light on the effect of these developments.

Since the ENP countries have been accepted into the ERA in 2007, ERA policies could also influence the innovation systems in ENP countries. No specific research has been done yet into the changes in innovation policies since this decision, or the impact it has had on research and innovation in the area. Some more general studies have been done that try to assess the impact of ERA in the EU and these studies show a cautiously positive result but it is not clear if these

results can be extrapolated to the ENP countries due to their drastically different internal structure.

Because research into the impact of the ENP on innovation is in its early phases, most of the gaps identified in the previous work packages are also relevant for this work package. The impact of specific policies is barely studied, no effort is made to disentangle the effect of previously implemented policies and ENP efforts, and studies are only done on a national scale. Finally, indirect effects of the ENP on innovation are rarely studied. For instance: commercial parties also shape the innovation system in countries. These commercial parties and their R&D decisions are inevitably influenced by a range of policies implemented due to the ENP. For example, increased FDI and trade could lead to more commercial R&D in ENP countries, and changing human capital stocks due to migration could also have an impact on R&D.

6. The ENP and Social Capital, Cultural Diversity, and the Institutional Environment

The fifth work package of the SEARCH project focuses on the social, cultural and institutional environment in ENP countries. The themes treated in this work package are quite broad and wide-ranging, so this report will focus on the three core topics which are emphasized in this work package: the role of social capital in innovation and economic growth, the role of cultural diversity in creativity and innovation, and the role of the institutional environment in knowledge creation and innovation diffusion.

The ENP does promote policies that in theory should directly influence the social capital, cultural diversity, and institutional diversity in ENP countries. In the bilateral and cross-border programmes there is funding for cultural programmes, and the Union for the Mediterranean and the Eastern Partnership have funding for an integrated cultural programme which focuses on people-to-people contact and fostering cultural diversity (European Commission, 2011). However, the effects of these policies on social capital and cultural diversity, and its resulting effect on innovation, are difficult to measure. To our knowledge, no project up to now has tried to measure the impact of these types of policies on ENP countries.

As mentioned in section 5, the ENP can also indirectly affect innovation. For instance, migration and trade could affect the level of human capital or the amount of cultural diversity in a region, which could then in its turn affect innovation. Although to our knowledge these effects have not been studied in ENP countries, they have been studied in the EU (table 6). The TRANSFORM project has taken stock of the culture of innovation throughout the EU (31, Didero et al., 2008),

which could provide a methodology for collecting data on culture and innovation. The project limited itself to taking stock of the levels of a culture of innovation, but it did not examine how this culture of innovation is affected by for instance migration or economic development. There is a range of academic literature which does study these kinds of effects. For instance, Niebhur (2006) examines the effect of migration on cultural diversity, and its impact on innovation in regions in Germany, and Hunt and Gauthier-Loiselle (2008) similarly explore the effect of migration on innovation in the United States.

Efforts have also been made to measure the effect of the institutional environment on innovation. The InnoDrive project aims to deliver data on the role of intangible capital in innovative capacity and performance of firms in the EU. On the one hand, this project has developed a method to quantify intangible capital, and has compiled an extensive region-level database of the spread of intangible capital through the EU. On the other hand, a wide range of publications were authored which examine different ways in which intangible capital influences performance and innovation (31, InnoDrive, 2011).

Finally, a number of projects study the effect of the ENP on convergence in a range of other themes, which indirectly might influence social capital, the institutional environment and cultural diversity. The EXLINEA project deals with the fifth enlargement and examines to what extent there is capacity to support the formation of European regions across border areas in Central and Eastern Europe. These European regions would consist of co-operative structures which alter the institutional environment, and could therefore offer a study of the ways in which integration could shift the institutional structures on a sub-national level (Scott & Matzeit, 2006). The EUDIMENSIONS project has similar goals, and examines how cross-border cooperation between the EU and neighbouring countries is affected by the shifted political environment, and how this affects relations between communities across borders (Boechner & Scott, 2009). The EUBORDERREGIONS project, finally, has just started in 2011 and will further examine the role of cross-border interactions and its effect on economic, social and territorial cohesion. These three projects do not directly relate to the topics of work package five, but they indirectly all study how the institutional environment shifts in border areas of the EU in response to European policies (EUBORDERREGIONS, 2012).

This overview suggests that research into these topics is in its starting phase. Although a number of mechanisms have been explored through which social capital, cultural diversity and institutions influence innovation, both in empirical research on the EU and in academic research;

no-one has specifically examined these effects in ENP countries. Furthermore, although the effects of social capital, cultural diversity and institutions have been explored to some extent, to our knowledge no studies have specifically examined how policies have affected these topics. There is a dearth of data on these topics, and the SEARCH project could contribute significantly to our understanding of the mechanisms that shape these topics, and the mechanisms through which these topics can influence innovation.

Table 6 Overview of European Research Projects relating to the social, cultural, and institutional environment in ENP countries and its impact on innovation.

Institutes	Project Details:	Countries	Topic
Transform consortium	NR 31. TRANSFORM: Benchmarking and Fostering Transformative Use of ICT in EU Region. Jan 2006 – Jun 2008	EU 27 countries	Analyze the transformative role of ICT on a sub-national level, and analyze the way in which the local culture of innovation influences this process
University of Vaasa	NR 32. InnoDrive: Intangible Capital and Innovations, Drivers of Growth and Location in the EU Mar 2008 – Feb 2011 20 academic publications and a number of databases	EU 27 countries	Analysis of the role of intangible capital on innovation in the EU through a range of publications. Development of a database with information on the spread of intangible capital throughout the EU

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WP1/02 SEARCH WORKING PAPER

New Economic Geography and Economic Integration: A Review.

Andrea Ascani, Riccardo Crescenzi, Simona Iammarino

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New Economic Geography and Economic Integration: A Review

Andrea Ascani, Riccardo Crescenzi, Simona Iammarino

Department of Geography and Environment
London School of Economics and Political Science
Email: a.ascani@lse.ac.uk

Abstract

This review explores the main contributions to New Economic Geography (NEG) with a particular focus on the effects of economic integration on spatial development. Firstly, the theoretical framework is explored by presenting the fundamental building blocks of NEG and successively looking at the principal models of NEG. Then, empirical research within a NEG framework is summarised. Mostly, relevant empirical studies are surveyed to give a sense about the main paths that research has covered so far and, more particularly, the debate about the economic integration effect of the EU enlargement to Central Eastern European Countries (CEECs) is explored.

Keywords

New Economic Geography, Economic Integration, Agglomeration, EU Enlargement

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1. Introduction

As two or more countries integrate one major concern arises with respect to the effects that economic integration might have on the distribution of income between countries as well as on the welfare levels of regions within these countries. In traditional trade theory, when economic liberalisation occurs between two countries both of them benefit of the gains of comparative advantages (although these benefits may not be equally distributed). This fundamentally results in higher consumption levels in each country as a result of trade as compared to a situation of autarchy. However, while the notion of economic integration mainly evokes trade-related issues it also entails a wide number of relevant elements for economic geography and spatial development. Although it is only in recent years that these elements have been explored more deeply, it is not new story that the concept of economic integration, along with international trade theory in general, is intimately and unfailingly connected with location issues (Ohlin, 1933; Predöhl, 1950; Balassa, 1967). What is the impact of trade liberalisation on the geographical distribution of industries? How does economic integration shape spatial disparities? Why firms agglomerate in certain places as integration deepens? These and other questions crucially underpin the emergence of what is now well-known as New Economic Geography (hereinafter NEG), that is, a body of research initially stemming from international trade theory which fundamentally attempts “to explain the formation of a large variety of economic agglomeration (or concentration) in geographical space” (Fujita and Krugman, 2004, p. 140). Most of the concepts and tools employed by NEG as well as the ambiguous impact of economic integration on development were well-known before NEG appearance. For instance, the crucial role of increasing returns to scale for agglomeration to occur is anticipated by Myrdal (1957)’s concept of ‘cumulative causation’, the importance of externalities for localisation is firstly discussed by Marshall (1890) and the fact that economic integration might reveal detrimental effects for the economic performance of less developed regions to the advantage of those initially developed is anticipated by Kaldor (1970). Yet, the innovative contribution of NEG consists of the rigorous formalization of such concepts which basically allows accounting for the dynamics of spatial clustering (and dispersing) of economic activity when trade barriers are progressively removed, which is hardly explainable with traditional theory.

The aim of this paper is to review the main contributions to NEG with a particular focus on the effects of economic integration on spatial development. Firstly, the theoretical framework is explored by presenting the fundamental building blocks of NEG and successively looking at the principal models of NEG. Then, empirical research within a NEG framework is briefly

summarised. Due to the asymmetry between theoretical and empirical NEG in terms of contributions and relevance, this paper pays more attention to the former. Mostly, relevant empirical studies are surveyed to give a sense about the main paths that research has covered so far and, more particularly, the debate about the economic integration effect of the EU enlargement to Central Eastern European Countries (CEECs) is explored. Clearly, the information included in this text is not exhaustive of the literature on NEG¹.

2. The building blocks of New Economic Geography

Mechanics of NEG is based on a number of fundamental elements that provide a plausible theorization of why self-reinforcing centripetal forces that pull economic activity into a location occur and persist over time. More particularly, increasing returns to scale, monopolistic competition, transaction costs and the occurrence of external economies collectively underpin the general functioning of NEG models and thus shape firms' and workers' location behaviour. As a result, the combination of such theoretical tools and the occurrence of specific parameters values in the economies modelled by NEG make it possible to explain the geographical unevenness of the economic landscape as a situation of equilibrium.

Firstly, increasing returns to scale are acknowledged to be fundamental when accounting for the spatial unevenness of economic activity given that they allow considering geography as a fundamental element in the analysis. In fact, as Scotchmer and Thisse (1992, p. 272) highlight, the importance of increasing returns constitutes the so-called 'folk theorem of spatial economics' since they by definition stimulate economic production to cluster in space. Indeed, as NEG models allow for increasing returns to occur, manufacturing firms are strongly encouraged to concentrate production in space as a way to benefit from the advantages of scale economies. In other words, increasing returns represent a notable incentive for firms to geographically concentrate their productive activities rather than dispersing them in several locations due to the benefits in terms of production costs deriving from creating larger plants. In this respect, increasing returns crucially constitute a sort of *leitmotiv* of NEG which is central to the explanation of the spatial differences in the distribution of productive activities. However, the mere existence of increasing returns does not imply that production is automatically concentrated

¹ Relevant theoretical reviews of NEG include Ottaviano and Puga (1998) and Baldwin et al. (2003) whilst Overman, Redding and Venables (2003), Head and Mayer (2004b) and Redding (2010) represent notable empirical surveys.

in space. In fact, the agglomerating effect of increasing returns is the complex result of the interaction with other forces within the economy, as explained in the remainder.

Secondly, monopolistic competition, based on works such as Chamberlin (1933), Spence (1976), Lancaster (1979) and in particular Dixit and Stiglitz (1977) enters NEG as a decisive element that underpins the existence of scale economies in formal models. Indeed, including economies of scale implies that competition between firms is far from perfect since each firm can increase production while reducing the average cost per unit of product (Samuelson and Nordhaus, 2001). In contrast, in perfectly competitive markets the assumption of increasing returns (internal to the firm) cannot hold as the cost of producing an additional unit of product necessarily implies negative profits. Moreover, the existence of increasing returns allows for the creation of larger plants that are in turn more efficient than smaller ones since when a firm decide to concentrate production in one single location the benefits of scale economies give it an advantage over spatially dispersed firms. This is extremely different from a situation of perfectly competitive markets where constant or decreasing returns eliminate the occurrence of economies of scale internal to the firm. In fact, in this framework firms are not concerned with any location choices since they cannot benefit from increasing returns by concentrating production. Thus, they will decide to produce in all locations where consumers are, thus distributing economic activity as an *optimum*. Hence, adopting imperfect competition in the economic reasoning becomes essential for considering the benefit of scale economies and explaining spatial pattern in the location of economic production. Generally, monopolistic competition includes horizontally differentiated products with constant elasticity of substitution (CES) so that consumers buy small amounts of each different variety of the good (i.e. varieties enter demand symmetrically). Therefore, each firm operating under increasing returns produces just a single variety of the differentiated good and thus decides its price. As a result, each firm tends to operate monopolistically in the specific market related to the variety that it produces. Since the size of each market is restricted by the existence of alternative varieties of the differentiated product, the monopolistic power of each firm over price is limited by the presence of other firms. Similarly to perfectly competitive markets, monopolistic competition exhibits a wide number of producers as well as the absence of barriers to entry or exit the market. Generally, when operating in a monopolistic competition setting, firms are neither in perfect competition nor in a situation of monopoly (Combes et al., 2008). By adopting such an arrangement NEG basically traces market and demand structure while dealing with increasing returns, thus providing a theoretical framework that permits to investigate the formation of economic agglomeration in space.

Thirdly, transport costs are included in NEG as a crucial element that influences location choices. Whereas in most traditional trade theory such costs equal zero by assumption, NEG generally adopts some forms of ‘iceberg transport costs’ *à la* Samuelson (1952) where only a fraction of the value of the units of product shipped from a location to another arrives while the rest is paid as cost of shipment. Therefore, the impact of transport costs on firms’ location choices clearly depends on the level of such costs. As a consequence, firms decide whether it is more convenient to concentrate in just a single location and serve other regions by exports or alternatively incur in additional fixed costs to open up a second plant in a different location. With this in mind, the interaction between the level of transport costs and increasing returns constitutes a crucial force towards agglomeration (or dispersion) in firms’ location behaviour.

Finally, external economies are incorporated in NEG to give an account for the high level of localisation of individual industries or, for analytical purposes, of localisation of the manufacturing sector as a whole (see Krugman, 1991a, p.485). In doing this, NEG essentially recalls Alfred Marshall’s insights about externalities: labour market pooling, availability of specialised intermediates and technological spillover effects. Firstly, firms that cluster in a single location take advantage of the availability of pooled labour force endowed with industry-specific skills. On the workers’ side, clustering firms represent a situation in which the risk of unemployment is reduced as compared to an economy where firms are dispersed. In general, there is an increase in efficiency emerging from an agglomerating industry connected with a local pooled labour market. As Krugman (1991b) argues, the benefits of market pooling are realised only in presence of increasing returns to scale which actively encourage firms to locate into a single location. Secondly, when firms concentrate production into a single location they also take advantage of the presence of specialised suppliers of intermediate goods and inputs. This means that through the creation of backward and forward linkages between producers of final goods and their suppliers of intermediates a self-reinforcing efficiency gain is determined at the industry level (see Krugman and Venables, 1995). In other words, firms tend to concentrate into a single location to take advantage of scale economies creating an incentive for suppliers of intermediates to locate production in the same location. In turn, as production of final goods by clustered firms becomes gradually less expensive due to better access to intermediates, more firms are attracted into the same location and this effect reinforces industry concentration. Evidently, the efficiency gain of such an external economy is triggered by the presence of increasing returns in the production of both final and intermediate goods. If this is not the case, “even a small-scale center of production could replicate a large one in miniature and still achieve the same level of

efficiency” (Krugman, 1991b, p.49). Thirdly, clustered firms are supposed to benefit from technological spillovers consisting in unintentional flows of knowledge arising from proximity to one another and benefitting the industry as a whole. As a result, firms are encouraged to localise in a single place to benefit from external knowledge arising from other firms’ activities (i.e. R&D). However, while acknowledging the relevance of technological spillovers in explaining the localization patterns of firms, NEG does not focus much on such an externality since it fundamentally presents some operationalization difficulties. Indeed, NEG authors rather prefer to deal with *pecuniary* externalities for which demand and supply can be individuated and modelled. In this respect, both labour market externalities and firms’ forward and backward linkages can be concretely accounted for whereas technological spillover effects are much more uncertain and invisible (Krugman, 1991a and 1991b). As mentioned above, a central point in the theorisation of external economies in NEG is that their effect arises only in presence of increasing returns internal to firms which are then encouraged to concentrate production into a single location as a way to reduce costs.

3. Market access and the emergence of a core-periphery pattern

Krugman and Venables (1990) provide one of the first relevant formal contributions about the functioning of NEG models in predicting agglomeration in a framework of economic integration. Their source of inspiration is the European 1992 Single Market and the previous Southern enlargement which made them investigating the effects of the interaction between market access and integration on the competitiveness of the manufacturing sector in the new access countries. Basically, Krugman and Venables (1990) model a two-sector and two-country economy where the existence of increasing returns in the imperfectly competitive manufacturing sector encourages firms to concentrate production in a few places. The two countries exhibit different market access with the ‘larger’ country benefitting of a central position with better market access than the ‘smaller’ country occupying only a peripheral location with a lower access to demand. The level of trade costs enters the model in a crucial way since its variation ultimately influences the location decisions of firms. Agglomeration forces prevail for intermediate levels of barriers to trade, when proximity to the larger market attracts firms to locate in the core country. This allows firms not only to access a larger number of consumers without incurring in shipment costs, but also to serve the periphery through exports. In fact, for intermediate trade costs firms in the core can easily increase exports towards the periphery thus reducing the dispersion effect of competition in the larger market. In this scenario, peripheral consumers can be served by exports

from the core and most firms relocate in the core country. Differently, in the case of high trade costs each country has a share of manufacturing that equals its endowments. Product market competition represents in this case a sufficient dispersion force towards a more even distribution of economic activity in space. In fact, if one of the two regions, say the centre, has more manufacturing firms than its market size would allow (leaving the periphery with less firms relative to its market size), then increasing product market competition and the lack of opportunities to increase exports due to high trade costs forces some firms to relocate from the centre to the periphery. Finally, for low trade costs location of manufacturing firms is mainly driven by factor market competition which acts as a dispersion force. Indeed, since exporting from the periphery to the core becomes less costly due to reduced trade costs more firms tend to relocate in the periphery as a way take advantage of factor price differentials between the two countries. Briefly, Krugman and Venables (1990) provide a helpful explanation of the ambiguous effect that economic integration has on the competitiveness of industry in the periphery.

4. The centripetal pull of labour mobility

One of the main shortcomings of Krugman and Venables (1990) is that they do not explain the process of emergence of differences in the production and market structure of the two countries considered. Indeed, the core or periphery status is attributed exogenously since countries are endowed with a large or small market as they enter the model. In other words, the authors do not answer the question “why countries that are *a priori* very similar can develop very different production structures” (Ottaviano and Puga, 1998, p.712). This appears to be a very relevant issue when considering the effects of economic integration on the location choices of firms since differentials in market access as in Krugman and Venables (1990) are just part of the story of why firms agglomerate. In this respect, Krugman (1991a) provides an endogenous explanation of the process underlying the occurrence of a core-periphery pattern in the case of two initially identical regional economies. The general setting still encompasses a two-sector and two-region economy where manufacturing activities operates under increasing returns to scale and the market for these goods is monopolistically competitive. The main difference with Krugman and Venables (1990) consists of allowing for labour migration from one region to the other as a response to market signals. This is a crucial difference, since the interaction of interregional migration with increasing returns and trade costs determines the balance between agglomeration and dispersion forces in the economy. When agglomeration forces dominate the resulting concentration process triggers a mechanism of ‘circular causation’ *à la* Myrdal which basically constitutes a self-

reinforcing dynamics in the economy. In other words, when trade costs are sufficiently low, firms decide to locate where demand is larger in order to benefit from economies of scale, and demand becomes larger (i.e. more immigrants) as production of manufactures concentrate. This process feed on itself automatically, resulting in the emergence of persistent differences in the economic structure of the industrial core as compared to the agricultural periphery.

Three main forces shape the process of agglomeration/dispersion of economic activity in space. Firstly, the 'product market competition' effect implies that when one worker migrates from Region B to Region A competition in the latter raises (while it is reduced in the former). Then, firms pay lower wages in Region A relative to Region B as a way to support their competitiveness. This effect clearly constitutes a dispersion force since some workers in Region A will decide to migrate in Region B where the relative wage is higher. Secondly, the 'home market effect' implies that, other things being equal, the region with the larger market for a specific product has the higher wage and it is a net exporter of that product (Krugman, 1980): in fact, more workers in Region A entail a larger share of income spent in industrial goods and this allows local firms to pay higher nominal wages, making this location increasingly attractive for more workers (and consequently more firms). As such, Region A becomes an exporter of industrial goods. Thirdly, the 'price index effect' implies that a larger share of workers in Region A determines lower prices for industrial products in the local market. In fact, more varieties are produced in Region A and they do not incur in trade costs since most firms produce locally. Thus, prices are lower in Region A relative to Region B. As such, the real wage in Region A as compared to real wage in Region B rises attracting more workers in Region A. The intensity of these three forces as well as the balance between them is determined by the level of trade costs between the two regions.

Let us start with a situation where trade costs are high: firms' location behaviour is mainly driven by the competition effect that basically prevents the process of agglomeration and supports a situation where economic production is evenly distributed across space. Since each region has the same endowments (i. e. no *a priori* differences between regions), firms have no incentive to relocate from one region to another since they would face more competition without the possibility to serve the other region's market by exports due to high trade costs. Hence, in this case, final demand is met locally and the share of manufactures in both regions remains the same. This is a stable equilibrium since, for high trade costs, dispersion forces prevail over agglomeration forces.

In order to illustrate this particular case of high trade costs, consider for example that for an exogenous reason (i.e. historical accident) one worker migrates from region B to region A. As a consequence, the latter has a larger share of manufacturing labour force than former and real wage ratio w_A/w_B between the two regions decreases. Firms in Region A face lower profitability due to more intense product market competition (i.e. more varieties produced) on the local market and high trade costs that impede exports. Hence, firms in Region A are forced to reduce wages as a way to increase their competitiveness on the local market. As a result, real wages tend to be lower in Region A. At the same time, firms in Region B face less competition on their local market and have higher profits. In this situation, manufacturing labour force in Region A start migrating to Region B until the ratio w_A/w_B equals 1, that is, until wage differential is eliminated and firms face the same degree of competition in both regions. Therefore, regional convergence is expected and the distribution of industry is basically shaped by that of agriculture, which represents a relevant part of demand for manufactures. In this case, agglomeration forces are not strong enough to prevail on the dispersion effect because firms in Region A cannot compete in distant markets (due to high trade costs). Workers have no incentive to migrate in Region A and agglomeration forces are not triggered. Contrarily, exceeding workers migrate back to Region B where relative wage is higher. As explained, this migration flow ends when wages are the same in both regions. However, if we consider trade costs that are sufficiently low, the dispersion effect is not strong enough to impede concentration. In fact, when a worker relocates from Region B to Region A (again for exogenous reasons), agglomeration forces prevail. More workers are attracted in Region A because this offers higher wages and more varieties. As a result, the larger the share of workers in Region A, the larger the share of income spent in manufacturing goods (i.e. larger demand) in this location and, thus, more firms are attracted from Region B to Region A in order to increase their profitability. The competition effect is weak because low trade costs allow firms in Region A to serve distant markets in addition to the local demand. This dynamics determines a divergence in the economic structure of the two *a priori* identical regions and even with trade costs approaching zero this self-sustaining process does not reverse. The reason basically lies in the circularity of the process of agglomeration sustained by labour migration.

While migration across regions is allowed, workers remain bound to their sectors of origin in Krugman (1991a). Puga (1996) adopts a very similar framework to Krugman (1991a) where he considers the possibility for workers to move from one activity to the other. He suggests that agglomeration most likely occurs when the supply of labour is sufficiently elastic, so that firms can also draw labour force from the agricultural sector without notable increases in the rural wage

rate. As such, sector migration from agriculture to manufacturing only slightly affects the wage differential between rural and industrial activities. In this case, agglomeration takes place since more rural workers find it convenient to move in industry where wages are relatively higher. On the contrary, if more workers relocating from agriculture to industry determine a disincentive for more workers to do the same because of the fall in manufacturing wages relative to agricultural wages, then agglomeration does not take place. This can be the case of inelastic labour supply from agriculture to manufacturing meaning that an initial inflow of rural workers into industry heavily affects the wage ratio between sectors.

5. Vertical linkages as drivers of firms' co-location

The core-periphery patterns that emerge from the interaction of increasing returns and trade costs in the previous theoretical models is mainly based on market size considerations (Krugman and Venables, 1990) and labour mobility both across regions and sectors (Krugman, 1991a; Puga, 1996). However, as far as the EU is concerned, the mobility of workers does not really appear to play the role of an adjustment process to wage differential between countries, as migration in Europe is rather weak (Siebert, 1997; Obstfeld et al., 1998; Puga, 1996, 2002;). As a result, NEG models such as those considered above can only in part explain agglomeration processes in Europe since the differences in wages that start the self-reinforcing concentration of production through labour mobility do not seem to trigger the same dynamics in the European scenario. Patterns of agglomeration of economic activities in space are not only shaped by consumers' final demand. In fact, a considerable part of the demand for manufacturing goods comes from other firms. In other words, firms producing intermediate goods represent a notable market for firms producing final goods. In this respect, Combes et al. (2008) estimate that the share of intermediate goods in the total manufacturing production of the US in 1997 equals 59%. That is, more than a half of total industrial output is consumed by other firms. Hence, this figure suggests that intermediate goods effectively represent an important share of demand. Therefore, even in a setting where labour is immobile across regions agglomeration can equally take place through the interaction of increasing returns, trade costs and vertical linkages between firms.

In this respect, Venables (1996) constructs a NEG model where the main centripetal force for agglomeration arises from cost and demand linkages between firms. The manufacturing sector is split into a sector producing intermediate goods and another one producing final goods. Both of them operate under increasing returns and imperfect competition so that they have an incentive to cluster production in space in order to exploit economies of scale. Agriculture remains perfectly

competitive and characterised by constant returns to scale. The idea is that firms producing intermediate goods decide to locate where the share of firms demanding intermediates is relatively higher. Therefore, in this framework, firms producing final goods create a demand linkage with suppliers. At the same time, firms consuming intermediate inputs will locate where the share of suppliers is relatively higher as a way to access goods by not incurring in trade costs. As such, also a cost linkage ties the two industries. Hence, being the location decisions of upstream and downstream firms mutually dependent and reinforcing, vertical linkages between firms represent a considerable force towards agglomeration. The existence of intermediate goods also implies the occurrence of other spatial forces. Indeed, given that labour is immobile across regions, when Region A has a relatively higher share of firms, the wage rate in this region increases as compared to Region B. As a consequence, demand of final goods grows in Region A attracting new firms from region B. This agglomeration process has a similar effect to the centripetal force seen in Krugman (1991a). Differently from Krugman (1991a), though, here it is an increase in income that affects final demand, rather than a migration-induced increase in local population. In addition, an increase in wages in Region A also triggers a dispersion force. In fact, firms in Region A face higher wages to pay relative to Region B. Therefore, in order to minimize costs firms may be induced to relocate where wages are lower. The balance of centripetal and centrifugal forces is mainly determined by the strength of linkages between firms as well as by trade costs. For high trade costs, the location decisions of firms are driven by market access considerations so that manufacturing of final goods is equally distributed between Region A and Region B. In fact, when trade barriers are high final consumer demand is mostly served locally. With increasing economic integration and trade costs approaching medium levels, differentials in costs between regions appear to be crucial. In this case, the region with more producers of inputs, say Region A, offers cost advantages for downstream firms, which start to move towards this location. As a result, the demand for intermediates in Region A becomes larger and more upstream firms are encouraged to relocate in such region, where demand linkages determine a larger volume of sales. Although rising wages in Region A constitute a force towards dispersion for firms, the interaction of scale economies with vertical linkages and intermediate trade costs makes centripetal pulls prevailing and industry agglomerates. In this case, then, the need of locating where final demand is larger is less important than the need to locate where it is possible to exploit the advantages arising from the presence of firms in the other industry (i.e. downstream or upstream). For low trade costs, firms are dispersed across regions and the main driver of

location decision tend to be the wage rate. In fact, inputs can be shipped without considerable transaction costs and vertical linkages are less relevant in location decisions.

Krugman and Venables (1995) offer a NEG model of vertical linkages which is very similar to Venables (1996). However, they consider just one manufacturing sector producing both intermediate and final goods. The interaction between trade costs and trade in intermediate goods encourages firms to cluster in order to exploit specific spatially-bounded pecuniary externalities (i.e. vertical linkages). The dynamics of such a model are generally the same of Venables (1996) with a non-monotonic relationship between the regional share of manufacturing and trade costs. A relevant contribution appears to be that of Krugman and Venables (1996). They consider a NEG model where vertical linkages are similar to Krugman and Venables (1995) with firms producing both final and intermediate goods. They explain the relationship between economic integration and industrial specialisation at the spatial level. In other words, such a study suggests that agglomeration processes may influence the location decisions of firms in the same industry leading to the emergence of specialised industrial districts. For high trade costs, each region will maintain an identical share of production in every industry, as usual in NEG models. As economic integration increases and the costs of trade approach intermediate levels, different results can occur. If industries are initially evenly distributed across regions agglomeration forces emerge but they are too weak to lead to a geographical concentration of firms. By contrast, in the case where the initial distribution of industries is uneven, centripetal forces are dominant at the sector level. In other words, if Region A initially exhibits a higher concentration of Industry K than Region B, then firms in Industry K located in Region B will find it more profitable to relocate in Region A to take advantages of more intense vertical linkages. Larger shares of firms in Industry K in Region A translate into larger local production of specialised intermediates, which in turn reinforce vertical linkages allowing firms to export at lower costs towards Region B. In addition, a larger industry in a region determines a relatively higher wage and this attracts new firms because consumers' expenditure rises. Therefore, for intermediate trade costs, the initial distribution of industries appears fundamental for industrial specialisation to emerge. Finally, stronger economic integration leads to agglomeration of industries across regions because vertical linkages at the level of individual industries become crucial. In this case the agglomeration process takes the form of regional specialisation. This model appears to be particularly significant with respect to the European integration process, where a polycentric industrial geography exists mainly due to past barriers to trade as well as other differences between European nations (e.g. languages, cultures, etc.). Hence, this suggests that industrial

specialisation patterns in Europe could occur more likely for very low trade costs. In fact, as noted by Krugman and Venables (1996), intermediate economic integration could not be enough strong to lead production of specific industries to agglomerate in just one location as in the case of most industries in the US.

6. The interaction between labour mobility and vertical linkages

Puga (1999) provides a NEG framework combining the insights of models encompassing labour mobility across regions (Krugman, 1991a), across sectors (Puga 1996) and vertical linkages (Krugman and Venables, 1995). Four forces drive location decisions of firms between regions: product and labour market competition (centrifugal forces) and demand and cost linkages (centripetal forces). In this setting, interregional labour mobility fosters agglomeration since workers respond to wage differentials as in Krugman (1991a). As such, when for instance Region A offers a relatively higher wage than Region B, more workers locate in Region A, which in turn attracts more firms because of the larger demand. Contrarily, without migration, differences in wages across regions are not equilibrated by an inflow of labour force in Region A where the wage rate is higher. Therefore, some firms prefer to relocate from Region A to Region B in order to minimize production costs. This suggests that while labour mobility represents a force towards concentration of economic agents in a few places, the lack of interregional mobility, as in the European case, may delay agglomeration as economic integration proceeds. The crucial difference between considering or not labour mobility mainly refers to the case of low trade costs. In this case, labour mobility reinforces agglomeration given that the location of firms is primarily driven by final consumer demand. In fact, trade of intermediates can occur also over long distance without relevant additional costs and vertical linkages as an agglomeration force become weaker. However, when there is lack of labour mobility, low trade costs contribute to dispersion of production in space because some firms in the core move to the periphery where wage costs are lower; vertical linkages become less important due to the fact that strong economic integration allows to access intermediates by trade. Hence, the agglomeration pulls of linkages between firms weaken. In addition, factor market competition encourages firms to relocate where wage costs are lower, thus, dispersing manufacturing in space. For high and intermediate trade costs, instead, the agglomeration process is similar with or without migration across regions. When economic integration is weak firms decide to locate close to final consumer demand and markets are mainly served on a local basis. In this case, factor and product market competition discourage firms to

relocate in the other region and vertical linkages are not strong enough to prevail on dispersion forces.

What is particularly interesting from this scenario with respect to Europe is that future European economic integration may benefit peripheral areas because of the low mobility of labour. The model highlights that the main dispersion force in this case is represented by factor market competition. In fact, the occurrence of wage differentials between core and periphery encourages production to disperse for the benefit of peripheral areas. However, Puga (1999) notices that the existence in European countries of policies aimed at filling the wage differences at the subnational level is an element that weakens the effect of dispersion forces for high levels of economic integration. Thus, in the perspective of NEG, such political measures reduce the centrifugal effect of factor market competition in core areas by making wage costs in the periphery not advantageous for firms to relocate. Moving back to the theoretical model, for medium-level trade costs and labour mobility, agglomeration is favoured since economic integration allows firms to compete in distant markets and vertical linkages become a strong determinant of the concentration of production in space. In addition, even if vertical linkages are not considerable in magnitude, labour mobility still represents a relevant force towards agglomeration. With no labour mobility across regions agglomeration equally occurs. As a matter of fact, vertical linkages are a relevant force towards concentration, say in Region A. Furthermore, clustering firms in Region A start drawing labour from the local agricultural sector. As a result, industrial wages increase in Region A relatively to wages in Region B. This is possible because mobility across sectors is still an option in this framework and follows the same mechanisms of Puga (1996), where the high elasticity of labour supply from the rural to the urban sector allows industry to attract workers with only slight increases in rural wages, thus sustaining the flow of workers from agriculture to industry. Therefore, if firms choose to exploit local vertical linkages to access intermediates rather than importing such goods, then these demand and cost linkages *à la* Krugman and Venables (1995) represent pecuniary externalities that compensate for the higher wage rate that firms in Region A pay relatively to firms in Region B. As a result, agglomeration is sustained by vertical linkages and the inflow of rural workers in the urban sector. To conclude, when both vertical linkages and labour mobility are included in a NEG framework, the dispersion-agglomeration tension tends to follow a monotonic pattern as economic integration deepens. That is, as trade costs fall, economic activity simply concentrates in few places. Even for trade costs approaching to zero the process of concentration of production is not reversed. However, when labour is immobile across regions the agglomeration-dispersion

relationship exhibits a non-monotonic trend for increasing levels of economic integration. In general, such a relationship between different levels of economic integration and the spatial distribution of industry seems to follow what is called the bell-shaped, or Ω -shaped, curve of spatial development (Krugman and Venables, 1990, Puga, 2002; Combes et al., 2008;): for high barriers to trade agglomeration is weak, for intermediate levels of economic integration strong agglomeration occurs and, finally, low trade costs reduce agglomeration. This suggests the fundamental ambiguity of the impact of economic integration on the occurrence of more or less stable core-periphery patterns in industry localisation.

7. From theory to empirics: Applied NEG

What we have seen above represents the main theoretical insights that NEG offers as far as economic integration and agglomeration processes are concerned. So far, NEG has mostly focused on theoretical models which allow making predictions about the effects of liberalisation on the location behaviour of economic agents. Empirical research within NEG appears much less developed relative to such an extensive body of theoretical work (Redding, 2010). A relatively small number of contributions analyse the economic integration impact of the EU enlargement eastward. This evidence is reviewed in this section right after a general overview of general empirical works using NEG tools. In the debate about the effect of integration on Central and Eastern European Countries (CEECs) NEG evidence is accompanied by some empirics from non-NEG literature which is nevertheless very interesting also in a NEG perspective due to the closeness of concepts employed as well as the insights offered.

7.1 NEG and economic integration

What most empirical studies using a NEG framework try to test is just the occurrence of one or more of the elements or forces that underpin agglomeration and dispersion in the economy. As we have discussed, market access represents a crucial driver of firms' location decisions since choosing a region with larger market implies that trade costs are saved. Hanson (1996) represents one of the first attempts to test market access predictions of NEG in empirical work. He explores the effects of falling trade costs between Mexico and USA as a consequence of NAFTA on the location of Mexican manufactures. What Hanson (1996) suggests is that deeper economic integration has increased market access pulls for Mexican firms. In fact, most local production has relocated towards the bordering regions with the US. Moreover, integration has effectively transformed local firms from producers for the domestic market to product assembly for foreign-

owned firms from the developed country. Therefore, the US-Mexican example highlights that economic integration between a developed and a developing area may influence both the geographical distribution of economic activities through market access considerations as well as the location of different stages of production across countries and regions. The importance of market access in the case of international economic integration is also highlighted by Overman and Winters (2006), who study the impact of the UK accession to the larger European market. They generally confirm NEG theoretical insights by explaining that regions hosting a port with better market access for exports and intermediate inputs experience higher employment rates. Instead, regions where accession has triggered a more intense product competition due to imports are characterised by a consequent decrease in employment. The importance of market access is also addressed by analysing the geography of factor prices. Redding and Venables (2004) and Hanson (2005) explore the relevance of spatial demand linkages at different geographical scales and both contributions suggest that wages vary spatially according to demand. In the same vein, Breinlich (2006) and Head and Mayer (2006) confirm the importance of proximity to large markets in shaping the core-periphery pattern of regional per capita income in the EU. In Breinlich (2006), however, distance from larger demand seems to negatively impact wages in the periphery through scarce human and physical capital accumulation rather than through the occurrence of trade costs (see also Redding and Schott, 2003). Other empirical studies conducted for single European countries go in the same general direction confirming that a region market access is positively associated with higher wages (De Bruyne 2003; Mion, 2004; Brakman et al., 2004). Fallah et al. (2011) expand this line of research by exploring the distributional aspects of market access. Analysing US metropolitan areas, they suggest that not only wages are higher in areas with stronger market access, but also that wage inequalities between skilled and unskilled workers become larger in such areas. In fact, since better market access tends to be associated with economic sectors that are skill-intensive, increasing demand for skilled workers in these areas also determines a rise of their relative wage as compared to that of unskilled labour. Therefore, it emerges that the interaction between workers' heterogeneity and market access may increase wage inequalities. In general, as suggested by most studies, demand linkages appear to be crucial for determining spatial patterns in the distribution of income and empirical research fundamentally confirms theoretical predictions.

Other authors have particularly focused on testing the occurrence and the relative importance of the home market effect that we have mentioned in previous sections. Davies and Weinstein (1996; 1998; 2003) constitute the first main attempts to analyse the existence of such an effect. The aim

of these studies is essentially that of investigating whether trade occurs as a result of traditional forces such as comparative advantage or because of increasing returns that give rise to the home market effect itself. While in Davies and Weinstein (1996) the NEG story of trade does not appear to be strong in explaining the structure of production in OECD countries, Davies and Weinstein (1998; 2003) are more refined studies that confirm that the home market effect is a substantial force. Also in other contributions, the home market effect is not always clearly individuated. For instance, Trionfetti (2001) highlights that the 'magnification effect' (i.e. the home market effect in author's words) does not necessarily arise in every sectors of manufacturing activity. Head and Ries (2001) compare an increasing returns model of international trade *à la* Krugman with a model characterised by constant returns and find that in Canada and US a 'reverse home market effect' tend to dominate, i.e. an increase in the domestic demand for a specific product determines a reduction in the output of that product. However, other important contributions suggest that the home market effect exists and it is important. In addition to two later studies by Davies and Weinstein, Feenstra et al. (2001) study bilateral trade flows for Canada and suggest that a notable home market effect occurs.

As mentioned above, factor mobility crucially enters NEG theory. In fact, both the location of production, which underpins capital mobility, as well as labour migration flows are essentially central to the NEG story. Although empirical research using a NEG framework is not particularly rich on these topics, some authors attempt to test theoretical predictions in these areas. Head and Mayer (2004a) study the location behaviour of Japanese firms investing in the EU adopting a model of location choices coherent with the theoretical setting of NEG. It emerges clearly that demand matters for the location of production confirming that market access considerations represent a strong driver of capital mobility. Similarly, Crozet et al. (2004) find evidence of demand linkages shaping FDI in France while LaFountain (2005) confirms the importance of proximity to large markets in firms' location choices in the US just for some sectors of manufacturing activity. Okubo et al. (2010) consider the effect of firms' heterogeneity on location choices in a setting of market integration. This study suggests that for decreasing trade costs more efficient firms tend to agglomerate in the core, where demand is higher, while less efficient firms cluster in the periphery because of the less intense competition in this location. However, in Okubo et al. (2010) this relationship between economic integration and localisation patterns appears not to be monotonic, as suggested instead in Baldwin and Okubo (2006). In fact, as integration deepens further, market access becomes the main pull for firms' location choices, as suggested by above-mentioned studies. Indeed, the effect of protection from competition arising

from locating in the periphery gradually loses relevance as trade costs become lower and lower. As a consequence, less efficient firms modify their location behaviour by setting up in the core, where market access is relatively higher. With respect to migration flows, Crozet (2004) tests the occurrence of forward linkages (i.e. workers are attracted by location with large production) in determining agglomeration in Europe. This contribution suggests that forward linkages do effectively matter but, in the case of Europe, low labour mobility fundamentally impedes the exacerbation of the core-periphery pattern. Similarly, Pons et al. (2007) confirm the relevance of forward linkages for the attraction of migration flows and the consequences on the spatial distribution of economic activity in Spain, whereas d'Artis Kancs (2011) structures a model suggesting that the access of Eastern countries to the EU determines a net (but low) migration of workers from East to the West, as predicted by NEG.

In general, it emerges that NEG theoretical predictions have become to be tested in empirical studies in recent years and this represents a further step towards a better understanding of the implications of economic geography on the spatial structure of economic processes.

7.2 NEG and EU enlargements to neighbouring countries

Other contributions adopting NEG-related concepts explore the importance of various drivers of industry localisation, with particular reference to the case of closer European integration (Midelfart-Knarvik et al., 2000; Forslid et al., 2002a, 2002b; Midelfart-Knarvik and Overman, 2002; Marques, 2005). What most of these studies generally suggest is that deeper integration has specific consequences on the spatial distribution of economic activity. In fact, agglomeration forces seem to drive the localisation of European industry towards few locations as integration becomes tighter. Moreover, sectoral differences arise with capital-intensive and skill-intensive activities concentrating in the core of the EU (sometimes after an initial dispersion) while slow growing industries characterised by unskilled labour tend to agglomerate in peripheral areas. A similar story is told also by Brülhart et al. (2004) and Crozet and Koenig (2004), who study the market access effect of European integration on the location behaviour of economic activity. These studies suggest that European regions close to the border with new member countries will benefit by attracting industry due to market access related advantages and cheaper imports. In general, what is suggested by most is that tighter economic integration in Europe could plausibly trigger agglomeration processes that lead to divergence of income across regions (see Marques, 2008). These kinds of dynamics of divergence and polarisation are also outlined by Petrakos (1996; 2000) and Bradley et al. (2005) with respect to transition economies in a framework which

is not strictly NEG-related. As a matter of fact, such studies argue that the rapid internationalisation of the economy of CEECs and the following integration in the European single market basically results in a disproportionate agglomeration of economic activity in metropolitan regions of CEECs (Petraikos and Economou, 2002) as well as in regions bordering the EU due to better market access. As a consequence, economic polarisation and divergence appears to be associated with closer economic integration in the case of EU enlargement eastward. This view is supported by a series of empirical studies in Traistaru et al. (2003), who find evidence that the process of economic integration of CEECs with the EU has translated into within-countries relocation of industry to the benefit of CEECs capital regions as well as areas bordering the EU, where agglomeration economies and market access considerations, respectively, dominate. Therefore, growth prospects for these winning regions seem relevant while other losing regions are expected to stagnate or decline. In the same debate, Damijan and Kostevc (2011) provide evidence that in most CEECs there exist a U-shaped relationship between economic integration and regional divergence. In other words, initially increasing trade liberalisation sharpens inequalities in relative wages due to strong agglomeration effects. In this phase, developed regions in CEECs disproportionately benefit from economic integration as compared to less favoured regions as a result of strong agglomeration economies which attract industry. As such, these regions exhibit higher wages relative to other regions and polarisation occurs. In a second step, however, Damijan and Kostevc (2011) suggest that in most (but not all) CEECs the growing inflow of foreign capital in regions bordering the EU lead to a fast process of adjustment of regional wages which foster convergence. The debate about regional growth and convergence-divergence patterns in CEECs within the framework of economic integration is further enriched by Monastiriotis (2011) who suggests that such dynamics are particularly complex. Indeed, he highlights that regional growth is far from being a linear process and that neoclassical convergence, cumulative causation leading to divergence, and non-monotonic convergence as a function of national development *à la* Kuznets may coexist. Overall, a divergence path of economic development seems to dominate in CEECs leading gradually to a pattern of polarisation (Monastiriotis, 2011). Moreover, economic integration has implications also in terms of regional specialisation. In the case of closer integration between the EU area and transition economies this adds a dimension to the process of economic restructuring of industry in these countries. Different country-level and comparative studies in Traistaru et al. (2003) note that regional specialisation increases in some CEECs while decreases in others. In some countries important interregional shifts in industry location are found over time (see for example the

chapter by Damijan and Kostevc in Traistaru et al., 2003) and they underpin the concentration and specialisation of industry in some regions while other areas become more diversified. In a study on the effect of integration on the structure of industry in CEECs, Kancs (2007) suggests that specialisation has decreased on average. The apparently ambiguous effect of integration on regional specialisation, however, seems to be justified by the planned economy inheritance of CEECs, according to which regions were in most cases specialised in activities uncorrelated with local comparative advantages. Such a distorted pattern of specialisation might now be under restructuring and CEECs regions may presumably experience a re-specialisation due to transition and integration with the EU. Hence, the new pattern of re-specialisation could justify the fact that not only some CEECs exhibit increasing regional specialisation whilst others a decreasing trend, but also that average industrial specialisation is reduced by closer economic integration with the EU.

In general, most contributions suggest that European economic integration with transition economies determines a set of changes in the economic geography of the latter leading to sectoral restructuring at both intra- and inter-country level (Traistaru et al., 2003) as a result of variations in the drivers of firms' location behaviour (Baldwin and Wyplosz, 2006). Eventually, as outlined above, such a restructuring is frequently deemed to determine divergence patterns between CEECs and old EU members as well as regional polarisation within CEECs (Petraikos et al., 2005; Krieger-Boden and Traistaru-Siedschlag, 2008).

8. Concluding remarks

This paper summarizes the main insights offered by NEG with respect to economic integration between countries and regions. What emerges from reviewing the theoretical framework of NEG is a fundamental ambiguity in the response of spatial economic processes to the gradual removal of trade barriers. In fact, as highlighted in the text, most (but not all) NEG models predict a bell-shaped association between the agglomeration of economic production and welfare in a few places and the intensity of trade liberalisation. As such, with low economic integration the spatial distribution of industry and income is rather dispersed, with each market served locally. However, the gradual removal of trade constraints triggers self-reinforcing agglomeration processes: as a result, industry tends to concentrate in few places. Finally, when economic integration is extremely strong, dispersion forces prevail and factor and product market competition basically drive the geographical distribution of production. Attaining such a deep degree of economic integration, however, is not a simple task. As a matter of fact, barriers to trade are not only

represented by ‘natural’ trade obstacles such as tariffs and quotas, but also by other elements such as different regulatory frameworks as well as different languages and cultures (Krugman and Venables, 1990). Therefore, full economic integration appears to include a wider number of non-economic elements. As we have discussed, most NEG is concerned with the effects of heterogeneous locations on the decisions of a uniform mass of economic actors. In this respect, it is worth highlighting that recent directions in research point out that ‘micro-heterogeneity’ across workers and firms is likely to affect the occurrence, the strength and the distributional effects of agglomeration economies (see for instance Okubo et al., 2010 and Fallah et al., 2011), thus encouraging the analysis of the effects of the interaction between actors’ and locations’ heterogeneous characteristics on centripetal and centrifugal forces (Ottaviano, 2011). With respect to empirical research, we argued that such aspect of NEG is not yet fully developed and we mentioned some relevant contributions aimed at investigating the occurrence and the importance of NEG forces, ranging from the home market effect and market access considerations to the dynamics of capital and labour mobility. We also reviewed relevant empirical studies concerned with the effect of the EU enlargement eastward. Most of these works seem to suggest that economic integration lead to a restructuring of industry in CEECs and that relocation patterns characterise most of the economic geography of such countries. Divergence and polarisation between regions in new EU member countries appear to be among the main consequences of enlargement, with more favoured regions (metropolitan and regions bordering EU) taking off while others stagnating or declining. But how does NEG enter the domain of policy? Clearly, NEG theoretical predictions tend to be rather catastrophic so that policy implications are problematic to draw. Think for instance to cumulative agglomeration processes whose result is the concentration of production in just one location. Nevertheless, this is mainly due to the high level of abstraction of theoretical models which tell nothing about real geography, the role of different institutional settings and history, among others. Generally, as explained by Ottaviano (2002) one major policy implications of NEG is the understanding that all sort of policies and interventions most likely have regional side effects influencing agglomeration and dispersion forces. As such, a careful evaluation of such measures should also include an analysis of the potential effects which might reinforce or alleviate centripetal and centrifugal forces. In other words, it appears crucial to understand all the factors and dynamics that can play a role in the process of integration, ranging from institutional settings to initial conditions and local economic geography (Bradley et al., 2005), in order to define policies that are able to tackle the

negative effects of the agglomeration process through “spatially targeted incentives in specifically designated areas” (Traistaru et al., 2003).

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WP1/03 SEARCH WORKING PAPER

Regional Economic Development: A Review

Andrea Ascani, Riccardo Crescerzi, Simona Iammarino

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Regional Economic Development: A Review

Andrea Ascani, Riccardo Crescenzi, Simona Iammarino

Department of Geography and Environment
London School of Economics and Political Science
Email: a.ascani@lse.ac.uk

Abstract

This review offers an analysis of the main concepts explored in the regional and local economic development literature. We start by explaining the rationale for a regional approach to development in a context of growing internationalisation of the world economy. Therefore, the relevance of local social and institutional characteristics is discussed by arguing that favourable conditions for development are the result of a highly context specific combination of rules, norms and social relations which encourage and facilitate knowledge diffusion and exploitation mostly on a localised basis. In this respect, some evidence is provided about the emergence of spatial inequalities connected to the localised nature of development processes and innovative activities. We then discuss the importance of a bottom-up approach to economic development emerging from the frequent ineffectiveness of top-down policies employed to spur regional development. Finally, we argue that the increasing demand for decentralisation of powers and resources from central governments to regional and local administrations in most parts of the world in the last decades can be interpreted as the acknowledgement that regional forces and characteristics are strongly relevant in shaping local development trajectories in a context of increasing globalisation. In this framework, therefore, decentralisation represents the capacity of heterogeneous regions and territories to tailor specific development strategies in order to address their particular needs and influence their own destinies.

Keywords

Regional development, globalisation, system of innovation, bottom-up, decentralisation

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1. Introduction

Modern growth theory has devoted substantial attention to the search for the determinants of economic growth by means of aggregated models. In these approaches 'economic development' has been often conceptualised as an increase in 'equilibrium' per-capita income and the interest of researchers mainly has concerned the identification of the main economic factors influencing it. From the 'capital fundamentalism' vision of development *à la* Harrod-Domar to the neoclassical model of growth (Solow, 1956), which long dominated both theory and policies, economic development has been considered as a linear process which could be triggered just by moving the right economic pieces on the chessboard, while largely overlooking the process of qualitative change and improvement of the economy as a complex social, institutional and historical system. Later in the 1980s, endogenous growth theorists argued that technological change is at the core of economic growth processes and highlighted the importance of investment in human capital (Romer, 1986; Lucas, 1988; Grossman and Helpman, 1991). However, again the linearity of the process of technological change entailed in such theories fundamentally neglects the importance of non-market processes and socio-institutional characteristics that impact on economic performance and are also extremely significant for human well-being (Sen, 1994). Conversely, other streams of literature, such as the innovation system approach (Freeman, 1987; Lundvall, 1992; Nelson, 1993) and, more generally, the local and regional development literature (Pike et al., 2006) have brought the relevance of contextual socio-economic and institutional characteristics at the core of the analysis of economic growth and development as multidimensional processes. As will be argued in this review, these approaches are particularly informative for policy purposes in a context of increasing globalisation, due to the local embeddedness of the fundamental forces triggering growth and development.

This text offers an overview of the main concepts explored in the regional and local economic development literature. Firstly, we explain the rationale for a regional approach to development in a context of growing internationalisation of the world economy. Secondly, the relevance of regional and local social and institutional characteristics and processes is discussed by arguing that favourable conditions for development are the result of a highly context specific combination of rules, norms and social relations which encourage and facilitate knowledge diffusion and exploitation. Thirdly, we argue that the localised nature of development processes and innovative activities is linked to the emergence of spatial inequalities in development levels. Such disparities at the geographical level appear to be even more relevant in the case of developing and emerging countries, where only a limited set of locations

shows the capability to spur economic growth, while the rest seems to stagnate or decline. In the fourth section, we discuss the importance of a bottom-up approach to economic development given the localised nature of this process and the frequent ineffectiveness of top-down policies. Subsequently, we argue that the increasing demand for decentralisation of powers and resources from central governments to regional and local administrations in most parts of the world in the last decades can be interpreted as the acknowledgement that regional forces and characteristics are strongly relevant in shaping local development trajectories in a context of increasing globalisation. In this framework, therefore, decentralisation represents the capacity of heterogeneous regions and territories to tailor specific development strategies in order to address their particular needs and influence their own destinies. Hence, the relevance of the processes of decentralisation is also connected to the shift from traditional top-down development strategies to bottom-up approaches by means of the increasing level of decision-making power that decentralisation attaches to local authorities and institutions. In other words, decentralised governments are most likely to adopt regional development strategies where the evaluation of territorial strengths and weaknesses as well as the inclusiveness of local agents are at the core of policies. Thus, when discussing the process of decentralisation we also explore its drawbacks and benefits in terms of economic equity and efficiency.

2. Regional perspectives on economic development in a global world

Over the past three decades the process of globalisation has brought forward major changes in the economic landscape. Since the 1980s, the unprecedented expansion in volumes of international trade and capital mobility across countries has dramatically altered pre-existing equilibria based on the strong role of nation states in regulating, orienting and/or restricting such flows. Therefore, globalisation has gradually frayed nation-state level economic institutions as they were known in the post-WWII period. At the same time, globalisation has contributed to the progressive evolution of the industrial organisation paradigm of mass production towards more flexible and successful production systems as a way to respond to the increasing competitive pressure of international markets. As a result, 'standardized' production became progressively obsolete in favour of a specialised and more flexible-to-demand-changes system, which allowed firms to survive to the uncertainty of global challenges. Along with these changes, the importance of Multinational Enterprises (MNEs) has risen and contributed further in the weakening of national borders and economic institutions in managing international flows of goods and capital. The increased importance of MNEs appears to be a response to the changes determined by the process of globalisation as a way for firms to adapt their industrial governance and

competitiveness to the new economic environment. The magnitude of this processes has encouraged some commentators to conceive the globalised world as a 'flat world' (Friedman, 2005) as well as to evoke notions such the 'end of geography' (O'Brien, 1992) and the 'death of distance' (Cairncross, 1997). In this perspective globalisation has basically eroded differences between places through the international reach of its technological and socio-economic forces. As such, locations seem to be emptied of their particular characteristics and local actors fundamentally lose the capacity to shape regional destinies. Improvements in communication technologies and the fall in transportation costs reduce the importance of physical distance in the location of productive activities. Consequently, economic development may virtually occur everywhere without any role being played by local\spatial factors. Convergence in incomes across regions and countries would thus be the ultimate result of globalisation.

This conceptualisation of both the nature and trajectory of the process of globalisation is in sharp contrast with the theoretical insights and empirical evidence produced by a large (and growing) body of literature in the fields of institutional and evolutionary economics, internal business studies and economic geography. In all these disciplines there is increasing awareness that the process of globalisation is progressively increasing the importance of regional processes and the role of local actors in shaping development trajectories. Since the 1980s it is apparent that some regions (and not others) have followed successful post-Fordist development paths. In this respect, Bagnasco (1977) and Piore and Sabel (1984) are among the first scholars to highlight the experience of flexible specialisation, trust and face-to-face social relations in the industry of 'Third Italy' as a case of regional economic success in an era of global economic expansion. In general, the importance of local specificities has increased rather than being marginalised in a context of increasing globalisation and functional economic integration (Storper, 1995): development processes unfold at the local level and globalisation reinforces such patterns. In other words, the emergence of a 'regional world' (Storper, 1997) is essentially underpinned by the spatially-bounded localised forces that trigger economic development and push welfare to agglomerate in specific locations within countries. Hence, economic development stemming from industrial renovation after mass production also seems to coincide with territorial development (Amin and Thirft, 1992). As such, in spite of some evidence in favour of convergence between countries in the last decades (Crafts, 2004; Sala-i-Martin, 2006), disparities within countries have increased in a number of cases (Rodriguez-Pose and Gill, 2006; Brakman and van Marrevijk, 2008), suggesting that economic development patterns are characterised by strong spatial concentration at the regional level

and that distance and geography do matter in a global world. In addition, and perhaps more importantly, such insights also suggest that national economic growth tends to be driven by the performance of a limited number of local economies within nation-states. Particularly, urban areas appear to be the physical *loci* where economic growth most likely concentrates. Indeed, most industrial production, skilled labour and higher wages tend to agglomerate in cities where geographical proximity between economic agents facilitates communication and creates an environment which favours frequent interactions and flows of ideas. This basically consists of the Marshallian idea of agglomeration economies related to knowledge diffusion. The importance of such interactions that give rise to positive externalities in the form of technological or knowledge spillovers is particularly crucial for economic development, as pointed out by various scholars (Romer, 1986, 1990; Grossman and Helpman, 1991; Coe and Helpman, 1995). Moreover, empirical evidence suggests that knowledge externalities provide relevant explanation for spatially uneven economic and innovative performance (Jaffe, 1989; Jaffe et al., 1993; Audretsch and Feldman, 1996). Following this line of reasoning, knowledge-intensive activities become fundamental for economic performance, following distinctive patterns of geographical distribution and contributing to generate localised sources of competitive advantage (Rodríguez-Pose and Crescenzi, 2008a).

As such, cumulative and path-dependent processes of accumulation of knowledge shape the distribution of welfare across space, suggesting the existence of a more complex economic geography than that of a flat world. In other words, economic development is ultimately spurred at the local level where knowledge externalities are generated. As a matter of fact, while codified knowledge becomes largely available and accessible as a result of improvements in communication technologies, tacit knowledge remains spatially bounded and its economic value has even increased as a consequence of its relative scarcity in respect to codified knowledge (Sonn and Storper, 2008). Similarly, while globalisation has determined a net fall of the transmission costs of codified knowledge, economically valuable knowledge which is tacit and complex by nature increasingly requires spatial proximity to be transmitted, absorbed and successfully re-used (Storper and Venables, 2004; McCann, 2008).

Moreover, fast-growing locations are not closed and independent economies, but rather they are most likely those areas hosting MNEs and their international investment which crucially connect the region with foreign markets and resources (McCann and Acs, 2009). As a matter of fact, international capital mobility has increased notably in the past decades: on the one hand, the dispersion of international investments across different countries has increased; on the other hand, it tends to concentrate in a few

regions within these. Locations where MNEs invest thus become part of global production networks (GPN) at different stages of the production process (Ernst and Kim, 2002) or, as it has been suggested, 'neo-Marshallian nodes in global networks' (Amin and Thrift, 1992). In addition, regions involved in such GPN may also benefit of channels for both international knowledge diffusion and local capability building. The creation and maintaining of external linkages, such as hosting international investment, in order to access external knowledge and innovation, is acknowledged to be fundamental for local economies as a way to complement and enrich locally produced knowledge (Bathelt et al., 2004). This is particularly the case of developing countries where the bulk of available information is not locally produced rather than imported from exogenous sources and, thus, such an external knowledge tends to play a primary role (Pietrobelli and Rabellotti, 2009). However, the success of host regions in capturing the advantages of knowledge diffusion through global networks crucially relies on fundamental and structural characteristics ranging from local knowledge-base and absorptive capacity to social and institutional infrastructure. In this respect, the existence of a system of innovation at the local level represents a crucial element for the attraction and exploitation of external knowledge. The system of innovation approach applied to developed countries implies that the existence of linkages between actors and organisations within a framework of a favourable social and institutional context gives rise to positive dynamics of learning, new knowledge creation and exploitation. The nature of these dynamics is systemic in the sense that the innovation process is far from a linear phenomenon, but, contrarily, it is the result of complex patterns of interactions between a number of components acting together according to common norms, practices and historical inheritance. Such a characterisation entails the fact that the concept of system of innovation is not easily applicable to the context of developing countries mainly due to institutional weakness and fragmentation of linkages between relevant actors (Intarakumnerd et al., 2002; Padilla-Perez et al., 2009). As a consequence, the scope of systems of innovation is limited these countries, thus sharpening the localised nature of knowledge-related activities and, eventually, that of economic development.

As mentioned, in combination with highly localised drivers of economic performance, the process of globalisation has also emphasized the developmental impact of the international reach of firms which determine the degree of global connectivity and international competitiveness of their host regions (McCann and Acs, 2009). What emerges from this picture is basically that increasing international trade and capital mobility crucially sharpen the regional character of development processes, emphasizing the role of geographical proximity in shaping successful economic performance. Of course, it is not

geographical proximity *per se* that causes growth, but it is an important factor shaping the location behaviour of economic agents as well as the intensity of linkages between them. In other words, geographical proximity often represents the necessary setting for other positive forces to occur (Rodríguez-Pose and Crescenzi, 2008a) or, similarly, it provides the context favouring development through the occurrence of intangible and complex 'untraded interdependencies' among economic actors (Storper, 1995).

3. Regional development beyond geographical proximity

Even if economic development processes are highly localised not all 'locations' are equally able to succeed in the global competitive environment. In fact, knowledge and innovation activities require a favourable environment to make positive feedback and interactions possible. Therefore, differences in local social, political and institutional settings determine different interactions between local economic agents, knowledge and innovation activities (Rodríguez-Pose, 1999). This translates into different capacities to trigger economic development processes across space. In other words, physical proximity and co-location between economic agents is not a sufficient condition for knowledge spillovers to be effectively exploited and innovation to occur. For instance, Boschma (2005) argues that other 'proximities' between economic actors are also crucial for innovation to take place. Cognitive proximity provides firms with the necessary absorptive capacity to exchange knowledge and make it economically useful (Cohen and Levinthal, 1990). This dimension of proximity appears to be extremely important since it underpins the concrete and productive exchange of tacit knowledge between agents, making knowledge externalities and diffusion ultimately effective. Organisational proximity also favours innovation and interactive learning, providing agents with common mechanisms and arrangements to tackle uncertainty and opportunistic behaviours. Social proximity reflects the embeddedness of firms and workers in informal social relations and networks which are fundamentally based on interpersonal trust. This favours knowledge diffusion and learning through a more communicative context than that of impersonal transactions, eliminating frictions and difficulties related to pure market exchanges (Granovetter, 1985; Knack and Keefer, 1997; Zack and Knack, 2001) or permitting to attain objectives that would not be otherwise realised in absence of social relationships and trust (Trigilia, 2001). Finally, institutional proximity refers to the mechanisms of coordination of the economy, ranging from the legal and regulatory system to informal cultural norms and habits. In this respect, successful innovation and economic performance is facilitated by solid institutional arrangements and common cultural norms which crucially lubricate market mechanisms. Non-geographical proximities shed light on a number of

relevant drivers for the process of economic development. Furthermore, these elements tend to be combined together at the local level in highly context-specific ways shaping the processes of new knowledge generation, collective learning and, eventually, economic performance. In other words, successful innovation and related economic development mostly occur regionally (Amin and Thrift, 1994; Scott, 1996; Storper, 1997; Cooke et al., 1997; Rigby, 2000) where systematic and repeated interactions between relevant local actors encouraged by a favourable institutional framework both shape the innovative capacity of specific regional contexts and allow absorbing and employing exogenously produced knowledge in an economically productive way (Iammarino, 2005, p.499), as highlighted by the (regional) system of innovation literature (Lundvall, 1992; Cooke et al. 1997). As such, local economic development may be encouraged by the realisation of a regional competitive advantage based on location-specific and specialised capabilities and competencies nurtured by socio-institutional and cultural structures. Since such conditions are context-specific, they are extremely difficult to replicate in different settings and each location has to shape its own competitive advantage on the basis of functional and effective interactions between local economic agents and socio-institutional forces. It is exactly the existence of adequate formal (societal) and informal (communitarian) institutions promoting collective action and favouring coordination among local actors that provides the appropriate environment for regional economic development to be spurred (Rodríguez-Pose and Storper, 2006). This conceptualisation of the institutions supporting the process of economic development is not dissimilar from the institutional and social 'proximities' necessary for the diffusion of innovation and knowledge: they provide economic agents with context-specific arrangements of collective organisation, problem-solving, improved predictability about market behaviour and, especially, learning and absorptive competencies. Notwithstanding the polarisation in the debate about the role of informal versus formal institutions, with some pointing out the prominence of formal institutions (North, 1990; Durlauf and Fafchamps, 2004) while other highlighting the relevance of informal ones (Granovetter, 1985; Coleman, 1990; Putnam et al., 1993), the interaction and balance between *society* and *community* appear to be a key element in shaping the development potential of regions (Rodríguez-Pose and Storper, 2006) as learning actors (Morgan, 1997). As such, formal and informal institutions complement each other, offsetting reciprocally the potential negative externalities of the other, which may occur for instance in terms of lack of confidence, more costly conflict resolution, inability to act collectively, low scope of networks, etc. (Storper, 2005; Rodríguez-Pose and Storper, 2006; Rodríguez-Pose, 2010).

In light of the literature reviewed in this section, it is apparent that regional economic development processes are supported by context-specific social and institutional factors. These factors are crucial since they shape local capability to translate knowledge into economic wealth through a complex set of interactions and shared codes and practices. Clearly, spatial variations in the quality of such elements may determine a geographically uneven potential for economic development across regions leading to growing divergence among different locations. Therefore, regional development policies should include measures to address institutional weaknesses. This is certainly not an easy task for policy-makers for a number of reasons ranging from the lack of consensus on 'optimal' institutional arrangements to the fact that institutions are strongly embedded into specific as well as highly path-dependent and particularly resilient to change contexts (Rodríguez-Pose, 2010). This for instance makes it difficult to replicate successful institutional forms of one region in different contexts as well as to intervene on institutional malfunctions in the short period. Nevertheless, acknowledging that innovation and economic development are mostly regional phenomena and that localised social and institutional factors are crucial for them leads to considering the meso-level perspective in both theory and policy as the relevant target for investigation.

4. Local economic development, global economic integration and spatial inequalities: empirical evidence

As discussed above, economic development tends to occur at the local level where interactions between economic agents are particularly dense. At the same time, socio-institutional factors appear crucial for the creation of a local competitive advantage and make interactions work in a systemic way. However, not all locations are characterised by such favourable conditions and we suggested that national growth is often led by few fast-growing and innovative places within a country, mostly coinciding with large metropolitan areas. As a consequence, when looking at the performance of sub-national entities it is not surprising that welfare concentrates in these same few places giving potentially rise to spatial inequalities at the national level. In the case of EU and US, it is well documented that innovation is highly geographically concentrated in a limited number of locations (Carlino et al., 2001; Crescenzi et al., 2007) suggesting that also underlying characteristics for innovation to succeed are highly unevenly distributed. Similarly, it has been suggested that the capacity of European regions to translate knowledge into valuable economic activity differs across space according to qualitatively different local social structures (Rodríguez-Pose, 1999) and regional systems of innovation (Crescenzi and Rodríguez-Pose, 2008b). Studies on convergence across regions usually offer mixed results in the case of developed world

(Magrini, 2004; Rey and Janikas, 2005), but, in the case of the EU, an increasing number of contributions agree to suggest that poor regions tend to lag behind while most prosperous areas exhibit sustained growth (Marcet and Canova, 1995; Magrini, 1999; Cheshire and Magrini, 2000; Magrini, 2004). This leads to substantial public resources being devoted to the alleviation of 'regional divergence' patterns, as in the case of the EU regional policy (Rodríguez-Pose and Fratesi, 2004).

As far as developing countries are concerned, the localised nature of economic development and the importance of socio-institutional factors appear even more crucial since favourable locations and contexts become less likely. This is witnessed by the strong patterns of spatial inequalities experienced by most developing countries in the last few decades, witnessed by the extraordinary fast growth rates of few locations (i.e. metropolitan regions) as compared to the remaining areas within the same country. Furthermore, globalisation crucially contributes to reinforce these trends by attaching strong relevance to localised processes of agglomeration, innovation and growth (Scott and Storper, 2003). For instance, it is widely acknowledged that the participation of China in world trade and international capital flows has strongly contributed to rising internal disparities in welfare levels between mainly agricultural inland areas and strongly urbanised coastal provinces (Fleisher and Chen, 1997; Kanbur and Zhang, 1999; Zhang and Kanbur, 2001; Zhang and Zhang, 2003). Divergence in regional income is suggested also in the case of India, with richer states registering rapid growth rates and driving national economic performance (Milanovic, 2005). Increasing regional disparities connected with agglomerated growth enhancing activities are further confirmed in the case of Indonesia and China (Akita and Kawamura, 2002). Similar evidence is provided in the case of Brazil, where the speed of national growth rate appears positively associated with the evolution of between-regions disparities (Azzoni, 2001). As far as transition economies are concerned, strong polarisation of income at the regional level is also experienced in Central and Eastern European Countries (CEECs) following their integration with the EU (Monastiriotis, 2011). In this case, main metropolitan areas and those bordering old EU members have gained the most from liberalisation while residual regions have in great majority of cases declined (Petrakos, 1996; 2000; Traistaru et al. 2003; Bradley et al., 2005).

Hence, what this reported evidence seems to confirm, especially with respect to developing countries (including transition countries), is that economic development processes are strongly embedded in particular densely developed areas which drive national growth by competing in international markets whereas the rest stagnates or declines with limited benefits from globalisation and integration processes. This pattern eventually produces and reinforces spatially uneven economic development.

5. Bottom-up approach to regional economic development

Once the genesis of economic development is acknowledged as a localised process, the existing policy tools for its support and promotion should be re-considered. Traditional growth policies which have paid little or no attention to forces and features such as agglomeration, physical distance, learning, innovation and institutions appear no longer adequate to respond to economic development needs of regions in an era of increasing globalisation (Barca et al., 2011). Moreover, the growing awareness of the importance of local features in shaping development trajectories crucially undermines one of the main characteristics of top-down policies: the transferability of 'universal' strategies to every region, regardless of local weaknesses and strengths. Such a 'one-size-fits-all' character of top-down policies has frequently led to the promotion of infrastructural investment as a way to improve market access of remote regions or endow poor areas with physical capital in the belief that returns from such a kind of investment are exceptionally high (Aschauer, 1989). The popularity of these policies is still widespread: the Italian Mezzogiorno is often considered as the most typical example of this approach with more than four decades of investment in infrastructures and no real benefits on local economies (Trigilia, 1992). Similar considerations can be made with respect to the development strategy of the city of Seville in the late 1980s, where a strong emphasis has been put on the development of infrastructure in order to promote regional growth (Pike et al., 2006). More recently, in the EU regional policy, almost 50% of the total budget devoted to Objective 1 regions (Convergence regions in the 2007-2013 period terminology) is spent for infrastructures while only the remaining is distributed between other axes such as business, human capital and rural development (Rodríguez-Pose and Fratesi, 2004). To confirm the popularity of top-down policies, the World Bank has also recently suggested that connective infrastructures are a priority for economic development in poor countries (World Bank, 2008). The attraction of large firms to locations with weak levels of industrialisation has been another kind of frequent top-down policy. Italian Mezzogiorno is again a good example of failure of this policy approach (Trigilia, 1992; Viesti, 2000), which has in most cases led to the localisation of firms within contexts which could not support the presence of industry mainly due to the lack of adequate skills and capabilities as well as institutional weaknesses. The generalised failure of most top-down development policies, coupled with the resurgence of regional economies as determined by global forces, has thus encouraged to consider alternative policy options in the form of bottom-up regional development policies (Pike et al., 2006), despite the lack of a clear theoretical foundation of such an approach (Crescenzi and Rodríguez-Pose, 2011). Pike et al. (2006) explain bottom-up development policies as those strategies that fundamentally

aim at unleashing indigenous economic potential by favouring local competitive advantage, and where the involvement of local actors in designing, implementing and managing development strategies is crucial. In so doing, bottom-up development initiatives are built on an in-depth analysis of local characteristics in terms of economic and socio-institutional conditions, in order to embed economic activity in the territory. This appears to be extremely relevant in a period of increasing globalisation, as discussed above. In fact, it is argued that regional institutions are those especially well placed for mitigating and exploiting potentially disruptive global forces (Pike et al., 2010). As compared to top-down development policies, bottom-up initiatives pay thus much more attention to context-related elements. For instance, the role attributed to regional social and institutional forces by bottom-up policies is very close to the importance that the system of innovation approach gives to the same elements as catalysts of the regional capacity to learn, absorb and create knowledge as well as to translate such an economic valuable knowledge into economic growth. The acknowledgement of the relevance of such factors for regional development strategies has also favoured the so-called 'place-based' approach to economic development, which takes into consideration the effects of the local context on economic performance, rather than ignoring regional specificities when designing policies. In this framework, policy interventions should be aware of context diversity and be contingent on the specific characteristics of the target regions (Barca et al., 2011).

Therefore, generally speaking, such local characteristics intimately affect the development trajectory of places, embedding each region's development process in a pattern of path-dependency (Sunley, 2000). Hence, pure traditional top-down interventions may have detrimental or no impact on regional economies since they mostly overlook context-related elements. Contrarily, bottom-up development strategies are based on the claim that context diversity across space fundamentally requests a geographical variation of objectives to be targeted by policy, and that these objectives have to be selected according to local specificities and past trajectories.

6. Decentralisation and regional economic development

The central role played by local forces and spatial proximity in shaping regional economic development has increasingly led to the decentralisation² of decision-making in most parts of the world in the last

² Following the conceptualization of three types of administrative decentralization (Rondinelli, 1981; 1989; Prud'homme, 1994), we use exclusively the concept of devolution meaning the transfer of power to lower tiers of autonomous government, ignoring the notions of redistribution of decision-making to SNG (deconcentration) or

decades. As a matter of fact, some countries have recently opted for federalist state structures according to different degrees of decentralization, such as Italy and Spain, while in others the process of devolution has emerged after a long-standing tradition of centralised government, as in France, UK and some developing countries. Moreover, federalist countries such as the US, Australia and India have experienced a revival of devolution, whereas on-the-paper decentralized states have been characterized by a more concrete push towards devolution, such as Mexico and Brazil (Rodríguez-Pose and Gill, 2003). As mentioned, such global trend of authority transfer from central to sub-national governments (SNG) is intimately connected with economic development since policies are increasingly designed and adopted at regional level, due to the acknowledgement that geography and the local context matter for development strategies to be effective and sustainable. Hence, decentralised administrations are empowered with the capacity to design and implement strategies that recognize the local cultural and socio-institutional underpinnings of regional economic interactions and behaviour. As such, they are in the position to favour "bottom-up, region-specific, longer-term, and plural-actor based policy action" (Amin, 1999, p. 366) which crucially differs from traditional top-down development strategies managed at the central level. In the relevant literature studying the linkages between decentralisation and economic performance, the analysis is carried out from the points of view of equity and efficiency. We will follow the same scheme to review the implications of decentralisation on regional economic development.

6.1 Decentralisation and equity

Economic theory suggests that decentralisation may have – at the same time - both beneficial and detrimental effects on equity. As far as beneficial effects are concerned, it is argued that fiscal decentralization contributes to reduce income inequalities between regions. In fact, poorer regions attempt to fill the gap with richer ones and to attract resources by offering favourable conditions and incentives (Ezcurra and Pascual, 2008). Hence, territorial competition represents an opportunity for poorer regions to manage local economic development since devolution allows them to play an active role in designing their own strategies. This is particularly evident if compared with situations where the central government promotes traditional sectoral development policies. Indeed, since such policies address the most dynamic sectors of the economy that are more likely located in rich areas, poor

the involvement of semi-autonomous organizations (delegation). Thus, we assume that the concepts of devolution and decentralization are interchangeable (Rodríguez-Pose and Gill, 2003).

regions are often excluded from national strategies. Furthermore, decentralization implies the downsizing of central government. This leads to less concentration of economic activity around capital regions and the dispersion of such activity on the whole national territory (Gil Canaleta et al., 2004).

However, the processes of devolution may have negative effects on equity. In this context, Rodríguez-Pose and Gill (2005) identify two key processes increasing spatial inequalities. Firstly, rich regions have stronger bargaining power than poor regions in influencing the decision of the central government. Indeed, not only the economic interest of rich regions may be closer to that of the centre, but also national governments may favour rich regions in order to gain legitimacy in terms of electorate, mass-media influence, etc. Secondly, the competitiveness of rich regions may overwhelm those of poor ones. Indeed, scarce endowment of physical and human capital and other structural gaps make territorial competition too hard for poor regions to gain from devolution. Moreover, the small tax base of poor regions reduces their spending capacity reducing the possibility of implementing development policies.

6.2 Decentralisation and efficiency

The relationship between devolution and efficiency is twofold as well. Arguments in favour of the process of devolution tend to highlight three key points. Firstly, assuming that regional needs may differ from national ones and since SNG are supposed to be better informed about regional demands, local provision of goods and services as well as policies tailored by SNG better fulfil regional needs, determining a greater *allocative efficiency* in the economy (Oates, 1999; Azfar et al., 1999). Secondly, devolution enhances *production efficiency* because it leads SNG to be more efficient and creative in terms of development policies as a result of territorial competition. Indeed, not only SNG have more opportunities to innovate than the centre due to less risks resulting from smaller responsibilities, but also they directly aim at improving their resources and developing their economy through new policy solutions and better local coordination. Furthermore, regional decision-making is more accountable and transparent (Azfar et al., 1999; Ebel and Yilmaz, 2002). This implies the reduction of corruption because of the proximity of voters to SNG, the larger participation of local stakeholders and the possibility to create significant institutions such as trust.

However, devolution may also cause inefficiency. First, a mismatch between resources and authorities combined with a culture of soft budget constraint may be extremely inefficient. That is, in countries where devolved powers are larger than devolved resources, regions are increasingly dependent on external financing such as national transfers or bank loans. Moreover, as a result of soft budget

constraint, information asymmetry in the form of moral-hazard may emerge. Consequently, regions may over-spend and accumulate huge debts, being certain that the national government will bail them out. Hence, regional overspending may negatively affect the macroeconomic stability of the whole country potentially undermining macro-economic stability. Second, central governments may be more efficient in the provision of goods and services because of economies of scale and scope. Indeed, the regional scale may be too small to be efficient and save costs. As Prud'homme (1995) suggests, a minimum critical mass is required to use powers effectively. Hence, devolution increases efficiency only in cases where SNG have a sufficient size in terms of economy, demography, geography, etc. to provide goods and services at smaller cost. Third, territorial competition may reduce efficiency because it leads regions to incur in costs related to making a location more attractive for external resources. Cheshire and Gordon (1998) highlight that the national benefit of attracting foreign resources could be the same regardless of the specific regions receiving the investment, suggesting that territorial competition is a zero-sum game. Furthermore, territorial competition may also lead to a negative-sum game when an industry attracted in a region is less productive than it would be by locating elsewhere without regional competition (World Bank, 2008). Moreover, devolution may affect efficiency because of the possibility of overlapping competencies between different tiers of government that tend to replicate the same services. Finally, efficiency is also reduced by the risk of corruption that is greater at local level where the interaction between economic and political agents is more frequent.

In light of the literature reviewed above, the relationship between devolution and both economic equity and efficiency is ambiguous. Therefore, we suggest that the impact of transferring powers to lower tiers of government on regional economic development most likely depends on the initial level of disparities and inefficiency in a country, on the structural characteristics of countries and regions implementing decentralisation, and on the modalities of transfer of power to SNG. These elements are of utmost importance when designing decentralisation. We will briefly explain this by recalling the Mexican experience of decentralisation. The choice of Mexico is justified in this context by several facts. First, risks (and also benefits) of decentralisation design are strongly evident in this case due to the deep level of decentralisation in this country. Moreover, the Mexican case could also be informative in the perspective of the European Neighbouring Policy (ENP). In fact, Mexico is a developing country (as well as European neighbours) that integrated its economy with the US as a result of NAFTA.

6.3 An example of decentralisation: the experience of Mexico

Mexico has long been a “on-the paper” federalist country, that is, although the Mexican Constitution implied a decentralized state, the central government has always been the core of decision-making (Shirk, 1999; Rodríguez-Pose and Gill, 2004). However, a concrete shift towards decentralization begins in the 1980s to maintain political stability after the debt crisis of 1982 and to respond to regional demands of larger autonomy, such as in the case of the Chiapas revolt (Rodríguez-Pose and Gill, 2003). Therefore, from the presidency of de la Madrid (1982-1988) to that of Salinas (1988-1994) the level of decentralization increases gradually. Then, under the presidency of Zedillo (1994-2000), decentralization plays a major role with the “New Federalism” agenda, aiming at increasing the transfer of resources and authority at sub-national level.

With respect to equity, Rodríguez-Pose and Gill (2004) suggest that the gap in regional GDP widens along with the increase of decentralization from the period of president de la Madrid to the “New Federalism” of Zedillo. Therefore, a temporal (not causal) correlation exists between greater decentralization and rising inequalities. However, they also argue that other significant factors unrelated with devolution may affect equity. For instance, the relatively fast trade liberalization of Mexico from an import-substitution strategy to the GATT regime and then to a free-trade area (NAFTA) contributes to widen disparities among Mexican states, benefitting regions at the border with the US and Mexico City (Krugman and Livas Elizondo, 1996; Sanchez-Reaza and Rodríguez-Pose, 2003). Decentralization may amplify such disparities. Indeed, the existing gap between rich and poor states is perpetuated by decentralization through the particular design of Mexican earmarked grants (*aportaciones federales*) (Joumard, 2005). Such federal transfers to SNG have to be spent for programs regulated at central level (mainly education and health), so that local actors have no autonomy on how to use such resources. Following Joumard (2005, p.13), the rationale for earmarked grants relies “on the existence of regional spillovers in sub-national spending programmes” so that such grants are needed “to avoid sub-optimal spending at a local level”. Moreover, when there are “similar spillover effects across states, then states should receive the same level of earmarked grants per head”. However, in Mexico the amount of grants transferred depends on the costs faced by the central government to provide such services prior to decentralization. Given that transfers were biased towards richer states, earmarked grants not only still largely reflect old disparities but also tend to exacerbate them.

With respect to efficiency, the existing literature seems to suggest that decentralization in Mexico promotes managerial and political innovation. However, the institutional and legal framework associated with fiscal discipline represents a problematic issue for efficiency.

Joumard (2005) has analysed some efficient and creative solutions that SNG have designed to address local problems. For instance, regions such as Chiapas and Jalisco have adopted “a modern budgetary and payment information system which simplifies the registration and control of financial operations, thus reducing the scope for corruption” (Joumard, 2005, p.10). Chiapas and Sonora have created a mechanism of selection of teachers that is more transparent and meritorious than it was under the control of trade unions. Other states have made more accountable and effective their administrative system. In addition, Jalisco has adopted innovative solutions such as support centres for small and medium enterprises and incentives for niche productions as part of a comprehensive strategy of local sustainable development. Most important, successful innovations in one state are being gradually adopted by other states through channels organized by the central government, such as co-operation and technical meetings. Moreover, service provision in rural and remote areas is increasingly being based on consultations between different tiers of government and civil society rather than being adopted with a top-down approach (OECD, 2005), suggesting that decentralization may also facilitate political innovation.

However, efficiency is seriously threatened by the rising debt of most Mexican states, due to a deep imbalance between revenues and expenditures. This may be interpreted as the joint result of two different elements: the extraordinary 1995 federal bailout to Mexican states after the peso crisis of 1994 (IMF, 2004) and a weak general fiscal discipline. Indeed, such a bailout created a moral-hazard problem leading SNG to overborrow from banks given the certainty to be supported by federal transfers (Hernández Trillo et al., 2002), with the risk to harm federal public finance. This situation is negative also in terms of equity since moral-hazard is particularly strong in the case of richer states due to the too-big-to-fail argument. Thus, federal transfers for the support of indebted states are biased towards richer ones.

With respect to weak fiscal discipline, it is reflected in both the soft budget constraint allowing states to borrow without particular restrictions and the Mexican fiscal system that relies mostly on federal transfers rather than regional taxation revenues. In fact, the regulation of sub-national borrowing is soft and banks have no incentive to assess the risk of regional projects (Hernández Trillo et al., 2002).

Moreover, the combination of SNG reliance on federal resources and the limited capacity of raising local taxes (Joumard, 2005) further reduces the spending responsibility of states, exacerbating the accumulation of debt and negatively affecting efficiency.

What can be learnt from the Mexican example is that the overall impact of devolution largely depends on the modalities of the transfer of authority and resources to SNG as well as the specific characteristics of the country. In fact, the unequal system of Mexican earmarked grants as well as weak fiscal instruments and the legal and institutional framework that facilitates the culture of soft budget constraint are issues directly connected with the design and implementation of devolution and local conditions rather than with the notion of devolution itself. Therefore, we argue that good design and correct implementation according to the local context are fundamental elements in order to gain from devolution both at national and sub-national level. As highlighted, national and regional structural characteristics may mediate the relationship between devolution and development. In Mexico, the opportunities of trade liberalization have mainly been caught by the capital-city and the states at the border with the US for geographical reasons linked to the advantage of easier market access to North America (Krugman and Livas Elizondo, 1996; Sanchez-Reaza and Rodríguez-Pose, 2003). Hence, devolution may also exacerbate pre-existing large disparities due to peculiar characteristics of a country, such as economic geography. This remark suggests that, although a well-designed devolution may contribute to regional economic development, some countries and regions may present a number of obstacles implying that not always devolution is desirable or it should be implemented to a lesser degree.

7. Concluding remarks

In this paper we have explored the main concepts and ideas arising from the literature on regional economic development. We argued that geography matters for economic development in the sense that forces that lead to innovation and growth are rooted in specific places or regions (rather than countries) and they cannot be easily moved elsewhere or replicated in different contexts. Therefore, regional economic development literature focuses on the processes that favour learning and new knowledge creation at the local level. A particular relevant role is played by the cultural and socio-institutional characteristics of regions, which basically drive the economic behaviour and attitudes of local actors by providing the appropriate structural relational assets to the regional economy (Storper, 1997; Scott and Storper, 2003) This makes innovation and development no longer a linear but a

multidimensional process by affecting local relations, rules, absorptive capacity and the capability to re-use knowledge. Globalisation sharpens the localised nature of innovation and development rather than alleviating it, since successful regions become able to exploit external knowledge as well as to serve international markets. Acknowledging that development is a localised process dependent on spatially-bounded elements as well as past trajectories (i.e. path dependency) provides an explanation for inequalities between regions within countries. We also argued that the pattern of regional disparities is more evident in developing countries due to the scarcity of locations that are able to absorb external knowledge in these areas. Bottom-up policies are precisely designed to take into consideration forces that influence innovation and development in specific locations. Such policies are in contrast with traditional top-down strategies that basically offer the same general measures of economic policy regardless of local conditions and characteristics. Crescenzi and Rodríguez-Pose (2011) argues for a reconciliation of top-down and bottom-up policies in order to approach regional development issues from a meso-level perspective. This 'integrated framework' makes it possible to analyse with the same conceptual tool different regions and to identify, on the one hand, regularities across space in the development trajectories of different locations and, on the other hand, specificities in the functioning of the economic system related to particular places. The growing awareness about the relevance of local forces in shaping regional economic development path is reinforced by the increasing demand for power decentralisation from national to regional governments in the last decades. Decision-making at the local level could be extremely positive for regional development by encouraging collective action and tailoring strategies to local needs, although some drawbacks also exist in terms of equity and efficiency. In general, regional economic development theories highlight that development potential and competitive advantage are strongly localised elements. Therefore, what development strategies should aim at is basically to adopt balanced policies which build upon local strengths and try to alleviate local weaknesses as the only way to root economic activity in territories in a sustainable manner (Pike et al., 2006).

8. References

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